

# SPD2 Series

## Type 2 Surge Protection Devices

# COMPETITIVE ADVANTAGES

**INTERNAL  
USE ONLY**

1 of 10

**CHARACTERISTICS**
**LITTELFUSE  
SPD2  
MOV**

**PHOENIX  
Valvetrab-SEC-T2  
MOV**


|                                    |           |           |
|------------------------------------|-----------|-----------|
| Lightning Impulse Current (10/350) | Not Rated | Not Rated |
|------------------------------------|-----------|-----------|

**IEC Characteristics**

| Voltage Range                            | Maximum Continuous Operating Voltage (U <sub>C</sub> ) | I <sub>max</sub> | Voltage Protection Level (Up) | TOV U <sub>T</sub> Withstand (5 sec) | TOV U <sub>T</sub> Safe Failure (120 min) | Maximum Continuous Operating Voltage (U <sub>C</sub> ) | I <sub>max</sub> | Voltage Protection Level (Up) | TOV U <sub>T</sub> Withstand (5 sec) | TOV U <sub>T</sub> Safe Failure (120 min) |
|------------------------------------------|--------------------------------------------------------|------------------|-------------------------------|--------------------------------------|-------------------------------------------|--------------------------------------------------------|------------------|-------------------------------|--------------------------------------|-------------------------------------------|
| > 100 V ac                               | 75 V                                                   | 50 kA            | 800 V                         | 114 V                                | 229 V                                     | Unknown                                                |                  |                               |                                      |                                           |
|                                          | No Cross                                               |                  |                               |                                      |                                           | Unknown                                                |                  |                               |                                      |                                           |
| 101–200 V ac                             | 150 V                                                  | 50 kA            | 1250 V                        | 229 V                                | 229 V                                     | 175 V                                                  | 40 kA            | 850 V                         | 240 V                                | 240 V                                     |
| 201–300 V ac                             | 300 V                                                  | 50 kA            | 1500 V                        | 337 V                                | 442 V                                     | Unknown                                                |                  |                               |                                      |                                           |
|                                          | No Cross                                               |                  |                               |                                      |                                           | Unknown                                                |                  |                               |                                      |                                           |
| 301–400 V ac                             | 350 V                                                  | 50 kA            | 1750 V                        | 403 V                                | 529 V                                     | 350 V                                                  | 40 kA            | 1500 V                        | 415 V                                | 457 V                                     |
|                                          | No Cross                                               |                  |                               |                                      |                                           | Unknown                                                |                  |                               |                                      |                                           |
| 401 V–600 V ac                           | 480 V                                                  | 50 kA            | 2300 V                        | 581 V                                | 762 V                                     | Unknown                                                |                  |                               |                                      |                                           |
|                                          | 550 V                                                  | 50 kA            | 2500 V                        | 697 V                                | 915 V                                     | Unknown                                                |                  |                               |                                      |                                           |
| 601 V ac–1000 V ac                       | 750 V                                                  | 35 kA            | 3400 V                        | 871 V                                | 1143 V                                    | Unknown                                                |                  |                               |                                      |                                           |
|                                          | No Cross                                               |                  |                               |                                      |                                           | Unknown                                                |                  |                               |                                      |                                           |
| 1000 V dc–1300 V dc                      |                                                        | 40 kA            | 3800 V                        |                                      |                                           | Unknown                                                |                  |                               |                                      |                                           |
| 1300 V dc–1500 V dc                      |                                                        | 30 kA            | 5000 V                        |                                      |                                           | Unknown                                                |                  |                               |                                      |                                           |
| I <sub>nominal</sub> (IEC, all voltages) | 20 kA                                                  |                  |                               |                                      |                                           | 20 kA                                                  |                  |                               |                                      |                                           |
| Back Up Fuse (IEC, all voltages)         | 315 A gG / 200 A gG                                    |                  |                               |                                      |                                           | 315 A gG / 200 A gG                                    |                  |                               |                                      |                                           |
| I <sub>SCCR</sub> (IEC, all voltages)    | 25 kA / 50 kA (except PV, 11 kA)                       |                  |                               |                                      |                                           | 25 kA / 50 kA                                          |                  |                               |                                      |                                           |

**UL Characteristics**

| Voltage Range       | Max Continuous Voltage (MCOV) | Voltage Protection Rating (VPR) | I <sub>nominal</sub> | SCCR   | Poles      | Max Continuous Voltage (MCOV) | Voltage Protection Rating (VPR) | I <sub>nominal</sub> | SCCR        | Poles      |
|---------------------|-------------------------------|---------------------------------|----------------------|--------|------------|-------------------------------|---------------------------------|----------------------|-------------|------------|
| > 100 V ac          | 75                            | 330 V                           | 20 kA                | 100 kA | 1, 2, 3, 4 | Unknown                       |                                 |                      |             |            |
|                     | No Cross                      |                                 |                      |        |            | Unknown                       |                                 |                      |             |            |
| 101–200 V ac        | 150                           | 600 V                           | 20 kA                | 200 kA | 1, 2, 3, 4 | 175 V                         | Unavailable                     | 20 kA                | Unavailable | 1, 2, 3, 4 |
| 201–300 V ac        | 300                           | 900 V                           | 20 kA                | 150 kA | 1, 2, 3, 4 | Unknown                       |                                 |                      |             |            |
|                     | No Cross                      |                                 |                      |        |            | 350 V                         | 1200 V                          | 20 kA                | 50 kA       |            |
| 301–400 V ac        | 350                           | 1000 V                          | 20 kA                | 200 kA | 1, 2, 3, 4 | Unknown                       |                                 |                      |             |            |
|                     | No Cross                      |                                 |                      |        |            | Unknown                       |                                 |                      |             |            |
| 401–600 V ac        | 480                           | 1500 V                          | 20 kA                | 200 kA | 1, 2, 3, 4 | 440 V                         | Unknown                         | Unknown              | Unknown     | Unknown    |
|                     | 550                           | 2000 V                          | 20 kA                | 200 kA | 1, 2, 3, 4 | Unknown                       |                                 |                      |             |            |
| 601 V ac–1000 V ac  | 750                           | 2500 V                          | 20 kA                | 200 kA | 1, 2, 3    | Unknown                       |                                 |                      |             |            |
|                     | No Cross                      |                                 |                      |        |            | Unknown                       |                                 |                      |             |            |
| 1000 V dc–1300 V dc | 1100                          | 2500 V                          | 20 kA                | 50 kA  | 3          | Unknown                       |                                 |                      |             |            |
| 1300 V dc–1500 V dc | 1500                          | 4000 V                          | 20 kA                | 65 kA  | 3          | Unknown                       |                                 |                      |             |            |

**Miscellaneous**

|                    |                             |                             |
|--------------------|-----------------------------|-----------------------------|
| Fault Indication   | Yes, Mechanical (Red/Green) | Yes, Mechanical (Red/Green) |
| Safety Reserve     | No                          | No                          |
| Thermal Protection | Y                           | Unknown                     |
| Follow Current     | No                          | No                          |
| Leakage Free       | No                          | No                          |

**Standards & Certifications**

|                     |   |   |
|---------------------|---|---|
| IEC 61643-11        | Y | Y |
| UL 1449 4th Edition | Y | Y |

# SPD2 Series

## Type 2 Surge Protection Devices

# COMPETITIVE ADVANTAGES

**INTERNAL  
USE ONLY**

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**CHARACTERISTICS**
**LITTELFUSE  
SPD2  
MOV**

**CITEL  
DS40  
MOV**


|                                    |           |           |
|------------------------------------|-----------|-----------|
| Lightning Impulse Current (10/350) | Not Rated | Not Rated |
|------------------------------------|-----------|-----------|

**IEC Characteristics**

| Voltage Range                            | Maximum Continuous Operating Voltage (U <sub>C</sub> ) | I <sub>max</sub> | Voltage Protection Level (Up) | TOV U <sub>T</sub> Withstand (5 sec) | TOV U <sub>T</sub> Safe Failure (120 min) | Maximum Continuous Operating Voltage (U <sub>C</sub> ) | I <sub>max</sub> | Voltage Protection Level (Up) | TOV U <sub>T</sub> Withstand (5 sec) | TOV U <sub>T</sub> Safe Failure (120 min) |
|------------------------------------------|--------------------------------------------------------|------------------|-------------------------------|--------------------------------------|-------------------------------------------|--------------------------------------------------------|------------------|-------------------------------|--------------------------------------|-------------------------------------------|
| > 100 V ac                               | 75 V                                                   | 50 kA            | 800 V                         | 114 V                                | 229 V                                     | No Cross                                               |                  |                               |                                      |                                           |
|                                          | No Cross                                               |                  |                               |                                      |                                           | No Cross                                               |                  |                               |                                      |                                           |
| 101–200 V ac                             | 150 V                                                  | 50 kA            | 1250 V                        | 229 V                                | 229 V                                     | 150 V                                                  | 40 kA            | 900 V                         | 180 V                                | 230 V                                     |
| 201–300 V ac                             | 300 V                                                  | 50 kA            | 1500 V                        | 337 V                                | 442 V                                     | 255 V                                                  | 40 kA            | 1250 V                        | 335 V                                | 440 V                                     |
|                                          | No Cross                                               |                  |                               |                                      |                                           | 280 V                                                  | 40 kA            | 1300 V                        | 335 V                                | 440 V                                     |
| 301–400 V ac                             | 350 V                                                  | 50 kA            | 1750 V                        | 403 V                                | 529 V                                     | 320 V                                                  | 40 kA            | 1500 V                        | 335 V                                | 440 V                                     |
|                                          | No Cross                                               |                  |                               |                                      |                                           | 385 V                                                  | 40 kA            | 1800 V                        | 335 V                                | 440 V                                     |
| 401 V–600 V ac                           | 480 V                                                  | 50 kA            | 2300 V                        | 581 V                                | 762 V                                     | 440 V                                                  | 40 kA            | 1800 V                        | 580 V                                | 770 V                                     |
|                                          | 550 V                                                  | 50 kA            | 2500 V                        | 697 V                                | 915 V                                     | 530 V                                                  | 40 kA            | 2500 V                        | 700 V                                | 920 V                                     |
| 601 V ac–1000 V ac                       | 750 V                                                  | 35 kA            | 3400 V                        | 871 V                                | 1143 V                                    | 660 V                                                  | 40 kA            | 3200 V                        | 870 V                                | 1150 V                                    |
|                                          | No Cross                                               |                  |                               |                                      |                                           | 760 V                                                  | 40 kA            | 3500 V                        | 1000 V                               | 1325 V                                    |
| 1000 V dc–1300 V dc                      |                                                        | 40 kA            | 3800 V                        |                                      |                                           | No Cross                                               |                  |                               |                                      |                                           |
| 1300 V dc–1500 V dc                      |                                                        | 30 kA            | 5000 V                        |                                      |                                           | No Cross                                               |                  |                               |                                      |                                           |
| I <sub>nominal</sub> (IEC, all voltages) | 20 kA                                                  |                  |                               |                                      |                                           | 20 kA                                                  |                  |                               |                                      |                                           |
| Back Up Fuse (IEC, all voltages)         | 315 A gG / 200 A gG                                    |                  |                               |                                      |                                           | 50 A gG                                                |                  |                               |                                      |                                           |
| I <sub>SCCR</sub> (IEC, all voltages)    | 25 kA / 50 kA (except PV, 11 kA)                       |                  |                               |                                      |                                           | 25 kA                                                  |                  |                               |                                      |                                           |

**UL Characteristics**

| Voltage Range       | Max Continuous Voltage (MCOV) | Voltage Protection Rating (VPR) | I <sub>nominal</sub> | SCCR   | Poles      | Max Continuous Voltage (MCOV) | Voltage Protection Rating (VPR) | I <sub>nominal</sub> | SCCR   | Poles      |
|---------------------|-------------------------------|---------------------------------|----------------------|--------|------------|-------------------------------|---------------------------------|----------------------|--------|------------|
| > 100 V ac          | 75                            | 330 V                           | 20 kA                | 100 kA | 1, 2, 3, 4 | No Cross                      |                                 |                      |        |            |
|                     | No Cross                      |                                 |                      |        |            | No Cross                      |                                 |                      |        |            |
| 101–200 V ac        | 150                           | 600 V                           | 20 kA                | 200 kA | 1, 2, 3, 4 | 150 V                         | Non-UL                          |                      |        |            |
| 201–300 V ac        | 300                           | 900 V                           | 20 kA                | 150 kA | 1, 2, 3, 4 | 255 V                         | Non-UL                          |                      |        |            |
|                     | No Cross                      |                                 |                      |        |            | 280 V                         | Non-UL                          |                      |        |            |
| 301–400 V ac        | 350                           | 1000 V                          | 20 kA                | 200 kA | 1, 2, 3, 4 | 320 V                         | Non-UL                          |                      |        |            |
|                     | No Cross                      |                                 |                      |        |            | 385 V                         | Non-UL                          |                      |        |            |
| 401–600 V ac        | 480                           | 1500 V                          | 20 kA                | 200 kA | 1, 2, 3, 4 | 440 V                         | 1500 V                          | 20 kA                | 100 kA | 1, 2, 3, 4 |
|                     | 550                           | 2000 V                          | 20 kA                | 200 kA | 1, 2, 3, 4 | 530 V                         | 1800 V                          | 20 kA                | 100 kA | 1, 2, 3, 4 |
| 601 V ac–1000 V ac  | 750                           | 2500 V                          | 20 kA                | 200 kA | 1, 2, 3    | 660 V                         | Non-UL                          | Non-UL               | Non-UL | Non-UL     |
|                     | No Cross                      |                                 |                      |        |            | 760 V                         | 2500 V                          | 20 kA                | 100 kA | 1, 2, 3, 4 |
| 1000 V dc–1300 V dc | 1100                          | 2500 V                          | 20 kA                | 50 kA  | 3          | Unknown                       |                                 |                      |        |            |
| 1300 V dc–1500 V dc | 1500                          | 4000 V                          | 20 kA                | 65 kA  | 3          | Unknown                       |                                 |                      |        |            |

**Miscellaneous**

|                    |                             |                             |
|--------------------|-----------------------------|-----------------------------|
| Fault Indication   | Yes, Mechanical (Red/Green) | Yes, Mechanical (Red/Green) |
| Safety Reserve     | N                           | N                           |
| Thermal Protection | Y                           | Unknown                     |
| Follow Current     | N                           | N                           |
| Leakage Free       | N                           | N                           |

**Standards & Certifications**

|                     |   |   |
|---------------------|---|---|
| IEC 61643-11        | Y | Y |
| UL 1449 4th Edition | Y | Y |

# SPD2 Series

## Type 2 Surge Protection Devices

# COMPETITIVE ADVANTAGES

**INTERNAL  
USE ONLY**

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**CHARACTERISTICS**
**LITTELFUSE  
SPD2  
MOV**

**CITEL  
DS70R  
MOV**


|                                    |           |           |
|------------------------------------|-----------|-----------|
| Lightning Impulse Current (10/350) | Not Rated | Not Rated |
|------------------------------------|-----------|-----------|

**IEC Characteristics**

| Voltage Range                            | Maximum Continuous Operating Voltage (U <sub>C</sub> ) | I <sub>max</sub> | Voltage Protection Level (Up) | TOV U <sub>T</sub> Withstand (5 sec) | TOV U <sub>T</sub> Safe Failure (120 min) | Maximum Continuous Operating Voltage (U <sub>C</sub> ) | I <sub>max</sub> | Voltage Protection Level (Up) | TOV U <sub>T</sub> Withstand (5 sec) | TOV U <sub>T</sub> Safe Failure (120 min) |
|------------------------------------------|--------------------------------------------------------|------------------|-------------------------------|--------------------------------------|-------------------------------------------|--------------------------------------------------------|------------------|-------------------------------|--------------------------------------|-------------------------------------------|
| > 100 V ac                               | 75 V                                                   | 50 kA            | 800 V                         | 114 V                                | 229 V                                     | No Cross                                               |                  |                               |                                      |                                           |
|                                          | No Cross                                               |                  |                               |                                      |                                           | No Cross                                               |                  |                               |                                      |                                           |
| 101–200 V ac                             | 150 V                                                  | 50 kA            | 1250 V                        | 229 V                                | 229 V                                     | 150                                                    | 70 kA            | 1000 V                        | 180 V                                | 230 V                                     |
| 201–300 V ac                             | 300 V                                                  | 50 kA            | 1500 V                        | 337 V                                | 442 V                                     | 255                                                    | 70 kA            | 1400 V                        | 335 V                                | 440 V                                     |
|                                          | No Cross                                               |                  |                               |                                      |                                           | 280                                                    | 70 kA            | 1500 V                        | 335 V                                | 440 V                                     |
| 301–400 V ac                             | 350 V                                                  | 50 kA            | 1750 V                        | 403 V                                | 529 V                                     | 320                                                    | 70 kA            | 1600 V                        | 335 V                                | 440 V                                     |
|                                          | No Cross                                               |                  |                               |                                      |                                           | No Cross                                               |                  |                               |                                      |                                           |
| 401 V–600 V ac                           | 480 V                                                  | 50 kA            | 2300 V                        | 581 V                                | 762 V                                     | 440                                                    | 70 kA            | 1.8 kV                        | 580 V                                | 770V                                      |
|                                          | 550 V                                                  | 50 kA            | 2500 V                        | 697 V                                | 915 V                                     | No Cross                                               |                  |                               |                                      |                                           |
| 601 V ac–1000 V ac                       | 750 V                                                  | 35 kA            | 3400 V                        | 871 V                                | 1143 V                                    | No Cross                                               |                  |                               |                                      |                                           |
|                                          | No Cross                                               |                  |                               |                                      |                                           | No Cross                                               |                  |                               |                                      |                                           |
| 1000 V dc–1300 V dc                      |                                                        | 40 kA            | 3800 V                        |                                      |                                           | No Cross                                               |                  |                               |                                      |                                           |
| 1300 V dc–1500 V dc                      |                                                        | 30 kA            | 5000 V                        |                                      |                                           | No Cross                                               |                  |                               |                                      |                                           |
| I <sub>nominal</sub> (IEC, all voltages) | 20 kA                                                  |                  |                               |                                      |                                           | 30 kA                                                  |                  |                               |                                      |                                           |
| Back Up Fuse (IEC, all voltages)         | 315 A gG / 200 A gG                                    |                  |                               |                                      |                                           | 100 A gG                                               |                  |                               |                                      |                                           |
| I <sub>SCCR</sub> (IEC, all voltages)    | 25 kA / 50 kA (except PV, 11 kA)                       |                  |                               |                                      |                                           | 25 kA                                                  |                  |                               |                                      |                                           |

**UL Characteristics**

| Voltage Range       | Max Continuous Voltage (MCOV) | Voltage Protection Rating (VPR) | I <sub>nominal</sub> | SCCR   | Poles      | Max Continuous Voltage (MCOV) | Voltage Protection Rating (VPR) | I <sub>nominal</sub> | SCCR   | Poles      |
|---------------------|-------------------------------|---------------------------------|----------------------|--------|------------|-------------------------------|---------------------------------|----------------------|--------|------------|
| > 100 V ac          | 75                            | 330 V                           | 20 kA                | 100 kA | 1, 2, 3, 4 | No Cross                      |                                 |                      |        |            |
|                     | No Cross                      |                                 |                      |        |            | No Cross                      |                                 |                      |        |            |
| 101–200 V ac        | 150                           | 600 V                           | 20 kA                | 200 kA | 1, 2, 3, 4 | 150                           | Non-UL                          |                      |        |            |
| 201–300 V ac        | 300                           | 900 V                           | 20 kA                | 150 kA | 1, 2, 3, 4 | 255                           | Non-UL                          |                      |        |            |
|                     | No Cross                      |                                 |                      |        |            | 280                           | Non-UL                          |                      |        |            |
| 301–400 V ac        | 350                           | 1000 V                          | 20 kA                | 200 kA | 1, 2, 3, 4 | 320                           | Non-UL                          |                      |        |            |
|                     | No Cross                      |                                 |                      |        |            | No Cross                      |                                 |                      |        |            |
| 401–600 V ac        | 480                           | 1500 V                          | 20 kA                | 200 kA | 1, 2, 3, 4 | 440                           | 1500 V                          | 20 kA                | 100 kA | 1, 2, 3, 4 |
|                     | 550                           | 2000 V                          | 20 kA                | 200 kA | 1, 2, 3, 4 | No Cross                      |                                 |                      |        |            |
| 601 V ac–1000 V ac  | 750                           | 2500 V                          | 20 kA                | 200 kA | 1, 2, 3    | No Cross                      |                                 |                      |        |            |
|                     | No Cross                      |                                 |                      |        |            | No Cross                      |                                 |                      |        |            |
| 1000 V dc–1300 V dc | 1100                          | 2500 V                          | 20 kA                | 50 kA  | 3          | No Cross                      |                                 |                      |        |            |
| 1300 V dc–1500 V dc | 1500                          | 4000 V                          | 20 kA                | 65 kA  | 3          | No Cross                      |                                 |                      |        |            |

**Miscellaneous**

|                    |                             |                             |
|--------------------|-----------------------------|-----------------------------|
| Fault Indication   | Yes, Mechanical (Red/Green) | Yes, Mechanical (Red/Green) |
| Safety Reserve     | N                           | N                           |
| Thermal Protection | Y                           | Unknown                     |
| Follow Current     | N                           | N                           |
| Leakage Free       | N                           | Y                           |

**Standards & Certifications**

|                     |   |   |
|---------------------|---|---|
| IEC 61643-11        | Y | Y |
| UL 1449 4th Edition | Y | Y |

# SPD2 Series

## Type 2 Surge Protection Devices

# COMPETITIVE ADVANTAGES

**INTERNAL  
USE ONLY**

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**CHARACTERISTICS**
**LITTELFUSE  
SPD2  
MOV**

**MERSEN  
Surge-Trap  
STP Series  
MOV**


|                                          |                                                        |                                 |                               |                                      |                                           |                                                        |                                 |                               |                                      |                                           |
|------------------------------------------|--------------------------------------------------------|---------------------------------|-------------------------------|--------------------------------------|-------------------------------------------|--------------------------------------------------------|---------------------------------|-------------------------------|--------------------------------------|-------------------------------------------|
| Lightning Impulse Current (10/350)       | Not Rated                                              |                                 |                               |                                      |                                           | Not Rated                                              |                                 |                               |                                      |                                           |
| IEC Characteristics                      |                                                        |                                 |                               |                                      |                                           |                                                        |                                 |                               |                                      |                                           |
| Voltage Range                            | Maximum Continuous Operating Voltage (U <sub>C</sub> ) | I <sub>max</sub>                | Voltage Protection Level (Up) | TOV U <sub>T</sub> Withstand (5 sec) | TOV U <sub>T</sub> Safe Failure (120 min) | Maximum Continuous Operating Voltage (U <sub>C</sub> ) | I <sub>max</sub>                | Voltage Protection Level (Up) | TOV U <sub>T</sub> Withstand (5 sec) | TOV U <sub>T</sub> Safe Failure (120 min) |
| > 100 V ac                               | 75 V                                                   | 50 kA                           | 800 V                         | 114 V                                | 229 V                                     | No Cross                                               |                                 |                               |                                      |                                           |
|                                          | No Cross                                               |                                 |                               |                                      |                                           | No Cross                                               |                                 |                               |                                      |                                           |
| 101–200 V ac                             | 150 V                                                  | 50 kA                           | 1250 V                        | 229 V                                | 229 V                                     | 180                                                    | 75 kA                           | Non-IEC                       | Non-IEC                              | Non-IEC                                   |
| 201–300 V ac                             | 300 V                                                  | 50 kA                           | 1500 V                        | 337 V                                | 442 V                                     | 275                                                    | 75 kA                           | Non-IEC                       | Non-IEC                              | Non-IEC                                   |
|                                          | No Cross                                               |                                 |                               |                                      |                                           | No Cross                                               |                                 |                               |                                      |                                           |
| 301–400 V ac                             | 350 V                                                  | 50 kA                           | 1750 V                        | 403 V                                | 529 V                                     | 320                                                    | 75 kA                           | Non-IEC                       | Non-IEC                              | Non-IEC                                   |
|                                          | No Cross                                               |                                 |                               |                                      |                                           | No Cross                                               |                                 |                               |                                      |                                           |
| 401 V–600 V ac                           | 480 V                                                  | 50 kA                           | 2300 V                        | 581 V                                | 762 V                                     | 420                                                    | 75 kA                           | Non-IEC                       | Non-IEC                              | Non-IEC                                   |
|                                          | 550 V                                                  | 50 kA                           | 2500 V                        | 697 V                                | 915 V                                     | 550                                                    | 75 kA                           | Non-IEC                       | Non-IEC                              | Non-IEC                                   |
| 601 V ac–1000 V ac                       | 750 V                                                  | 35 kA                           | 3400 V                        | 871 V                                | 1143 V                                    | 650                                                    | 75 kA                           | Non-IEC                       | Non-IEC                              | Non-IEC                                   |
|                                          | No Cross                                               |                                 |                               |                                      |                                           | No Cross                                               |                                 |                               |                                      |                                           |
| 1000 V dc–1300 V dc                      |                                                        | 40 kA                           | 3800 V                        |                                      |                                           | No Cross                                               |                                 |                               |                                      |                                           |
| 1300 V dc–1500 V dc                      |                                                        | 30 kA                           | 5000 V                        |                                      |                                           | No Cross                                               |                                 |                               |                                      |                                           |
| I <sub>nominal</sub> (IEC, all voltages) | 20 kA                                                  |                                 |                               |                                      |                                           | 20 kA (up to 400 V ac), 10 kA (600 - 1000 V ac)        |                                 |                               |                                      |                                           |
| Back Up Fuse (IEC, all voltages)         | 315 A gG / 200 A gG                                    |                                 |                               |                                      |                                           | Non-IEC                                                |                                 |                               |                                      |                                           |
| I <sub>SCCR</sub> (IEC, all voltages)    | 25 kA / 50 kA (except PV, 11 kA)                       |                                 |                               |                                      |                                           | Non-IEC                                                |                                 |                               |                                      |                                           |
| UL Characteristics                       |                                                        |                                 |                               |                                      |                                           |                                                        |                                 |                               |                                      |                                           |
| Voltage Range                            | Max Continuous Voltage (MCOV)                          | Voltage Protection Rating (VPR) | I <sub>nominal</sub>          | SCCR                                 | Poles                                     | Max Continuous Voltage (MCOV)                          | Voltage Protection Rating (VPR) | I <sub>nominal</sub>          | SCCR                                 | Poles                                     |
| > 100 V ac                               | 75                                                     | 330 V                           | 20 kA                         | 100 kA                               | 1, 2, 3, 4                                | No Cross                                               |                                 |                               |                                      |                                           |
|                                          | No Cross                                               |                                 |                               |                                      |                                           | No Cross                                               |                                 |                               |                                      |                                           |
| 101–200 V ac                             | 150                                                    | 600 V                           | 20 kA                         | 200 kA                               | 1, 2, 3, 4                                | 175                                                    | 600 V                           | 20 kA                         | 200 kA                               | 1, 2, 3, 4                                |
| 201–300 V ac                             | 300                                                    | 900 V                           | 20 kA                         | 150 kA                               | 1, 2, 3, 4                                | 275                                                    | 600 V                           | 20 kA                         | 200 kA                               | 1, 2                                      |
|                                          | No Cross                                               |                                 |                               |                                      |                                           | No Cross                                               |                                 |                               |                                      |                                           |
| 301–400 V ac                             | 350                                                    | 1000 V                          | 20 kA                         | 200 kA                               | 1, 2, 3, 4                                | 320                                                    | 1000 V                          | 20 kA                         | 200 kA                               | 1, 3, 4                                   |
|                                          | No Cross                                               |                                 |                               |                                      |                                           | No Cross                                               |                                 |                               |                                      |                                           |
| 401–600 V ac                             | 480                                                    | 1500 V                          | 20 kA                         | 200 kA                               | 1, 2, 3, 4                                | 420                                                    | 1500 V                          | 10 kA                         | 200 kA                               | 1, 3, 4                                   |
|                                          | 550                                                    | 2000 V                          | 20 kA                         | 200 kA                               | 1, 2, 3, 4                                | 550                                                    | 1500 V                          | 10 kA                         | 200 kA                               | 3, 4                                      |
| 601 V ac–1000 V ac                       | 750                                                    | 2500 V                          | 20 kA                         | 200 kA                               | 1, 2, 3                                   | No Cross                                               |                                 |                               |                                      |                                           |
|                                          | No Cross                                               |                                 |                               |                                      |                                           | No Cross                                               |                                 |                               |                                      |                                           |
| 1000 V dc–1300 V dc                      | 1100                                                   | 2500 V                          | 20 kA                         | 50 kA                                | 3                                         | No Cross                                               |                                 |                               |                                      |                                           |
| 1300 V dc–1500 V dc                      | 1500                                                   | 4000 V                          | 20 kA                         | 65 kA                                | 3                                         | No Cross                                               |                                 |                               |                                      |                                           |
| Miscellaneous                            |                                                        |                                 |                               |                                      |                                           |                                                        |                                 |                               |                                      |                                           |
| Fault Indication                         | Yes, Mechanical (Red/Green)                            |                                 |                               |                                      |                                           | Yes, Mechanical (Red/Green)                            |                                 |                               |                                      |                                           |
| Safety Reserve                           | N                                                      |                                 |                               |                                      |                                           | N                                                      |                                 |                               |                                      |                                           |
| Thermal Protection                       | Y                                                      |                                 |                               |                                      |                                           | Y                                                      |                                 |                               |                                      |                                           |
| Follow Current                           | N                                                      |                                 |                               |                                      |                                           | N                                                      |                                 |                               |                                      |                                           |
| Leakage Free                             | N                                                      |                                 |                               |                                      |                                           | N                                                      |                                 |                               |                                      |                                           |
| Standards & Certifications               |                                                        |                                 |                               |                                      |                                           |                                                        |                                 |                               |                                      |                                           |
| IEC 61643-11                             | Y                                                      |                                 |                               |                                      |                                           | N                                                      |                                 |                               |                                      |                                           |
| UL 1449 4th Edition                      | Y                                                      |                                 |                               |                                      |                                           | Y                                                      |                                 |                               |                                      |                                           |

# SPD2 Series

## Type 2 Surge Protection Devices

# COMPETITIVE ADVANTAGES

**INTERNAL  
USE ONLY**

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**CHARACTERISTICS**
**LITTELFUSE  
SPD2  
MOV**

**ABB  
OVR T2 80-...  
S P TS QS  
MOV**


|                                          |                                                        |                                 |                               |                                      |                                           |                                                        |                                 |                               |                                      |                                           |
|------------------------------------------|--------------------------------------------------------|---------------------------------|-------------------------------|--------------------------------------|-------------------------------------------|--------------------------------------------------------|---------------------------------|-------------------------------|--------------------------------------|-------------------------------------------|
| Lightning Impulse Current (10/350)       | Not Rated                                              |                                 |                               |                                      |                                           | 6.25 kA                                                |                                 |                               |                                      |                                           |
| IEC Characteristics                      |                                                        |                                 |                               |                                      |                                           |                                                        |                                 |                               |                                      |                                           |
| Voltage Range                            | Maximum Continuous Operating Voltage (U <sub>C</sub> ) | I <sub>max</sub>                | Voltage Protection Level (Up) | TOV U <sub>T</sub> Withstand (5 sec) | TOV U <sub>T</sub> Safe Failure (120 min) | Maximum Continuous Operating Voltage (U <sub>C</sub> ) | I <sub>max</sub>                | Voltage Protection Level (Up) | TOV U <sub>T</sub> Withstand (5 sec) | TOV U <sub>T</sub> Safe Failure (120 min) |
| > 100 V ac                               | 75 V                                                   | 50 kA                           | 800 V                         | 114 V                                | 229 V                                     | Unknown                                                |                                 |                               |                                      |                                           |
|                                          | No Cross                                               |                                 |                               |                                      |                                           | Unknown                                                |                                 |                               |                                      |                                           |
| 101–200 V ac                             | 150 V                                                  | 50 kA                           | 1250 V                        | 229 V                                | 229 V                                     | Unknown                                                |                                 |                               |                                      |                                           |
| 201–300 V ac                             | 300 V                                                  | 50 kA                           | 1500 V                        | 337 V                                | 442 V                                     | 275V                                                   | 80 kA                           | 1400 V                        | 337 V                                | Unknown                                   |
|                                          | No Cross                                               |                                 |                               |                                      |                                           | Unknown                                                |                                 |                               |                                      |                                           |
| 301–400 V ac                             | 350 V                                                  | 50 kA                           | 1750 V                        | 403 V                                | 529 V                                     | 350V                                                   | 80 kA                           | 1400 V                        | 1200 V                               | Unknown                                   |
|                                          | No Cross                                               |                                 |                               |                                      |                                           | Unknown                                                |                                 |                               |                                      |                                           |
| 401 V–600 V ac                           | 480 V                                                  | 50 kA                           | 2300 V                        | 581 V                                | 762 V                                     | 440V                                                   | 80 kA                           | 1800 V                        | 581 V                                | Unknown                                   |
|                                          | 550 V                                                  | 50 kA                           | 2500 V                        | 697 V                                | 915 V                                     | Unknown                                                |                                 |                               |                                      |                                           |
| 601 V ac–1000 V ac                       | 750 V                                                  | 35 kA                           | 3400 V                        | 871 V                                | 1143 V                                    | Unknown                                                |                                 |                               |                                      |                                           |
|                                          | No Cross                                               |                                 |                               |                                      |                                           | Unknown                                                |                                 |                               |                                      |                                           |
| 1000 V dc–1300 V dc                      |                                                        | 40 kA                           | 3800 V                        |                                      |                                           | Unknown                                                |                                 |                               |                                      |                                           |
| 1300 V dc–1500 V dc                      |                                                        | 30 kA                           | 5000 V                        |                                      |                                           | Unknown                                                |                                 |                               |                                      |                                           |
| I <sub>nominal</sub> (IEC, all voltages) | 20 kA                                                  |                                 |                               |                                      |                                           | 20 kA                                                  |                                 |                               |                                      |                                           |
| Back Up Fuse (IEC, all voltages)         | 315 A gG / 200 A gG                                    |                                 |                               |                                      |                                           | 125 A gG / 50 A gG                                     |                                 |                               |                                      |                                           |
| I <sub>SCCR</sub> (IEC, all voltages)    | 25 kA / 50 kA (except PV, 11 kA)                       |                                 |                               |                                      |                                           | 100 kA                                                 |                                 |                               |                                      |                                           |
| UL Characteristics                       |                                                        |                                 |                               |                                      |                                           |                                                        |                                 |                               |                                      |                                           |
| Voltage Range                            | Max Continuous Voltage (MCOV)                          | Voltage Protection Rating (VPR) | I <sub>nominal</sub>          | SCCR                                 | Poles                                     | Max Continuous Voltage (MCOV)                          | Voltage Protection Rating (VPR) | I <sub>nominal</sub>          | SCCR                                 | Poles                                     |
| > 100 V ac                               | 75                                                     | 330 V                           | 20 kA                         | 100 kA                               | 1, 2, 3, 4                                | Unknown                                                |                                 |                               |                                      |                                           |
|                                          | No Cross                                               |                                 |                               |                                      |                                           | Unknown                                                |                                 |                               |                                      |                                           |
| 101–200 V ac                             | 150                                                    | 600 V                           | 20 kA                         | 200 kA                               | 1, 2, 3, 4                                | Unknown                                                |                                 |                               |                                      |                                           |
| 201–300 V ac                             | 300                                                    | 900 V                           | 20 kA                         | 150 kA                               | 1, 2, 3, 4                                | 275 V                                                  | Unavailable                     | Unavailable                   | Unavailable                          | Unavailable                               |
|                                          | No Cross                                               |                                 |                               |                                      |                                           | Unknown                                                |                                 |                               |                                      |                                           |
| 301–400 V ac                             | 350                                                    | 1000 V                          | 20 kA                         | 200 kA                               | 1, 2, 3, 4                                | 350 V                                                  | Unavailable                     | Unavailable                   | Unavailable                          | Unavailable                               |
|                                          | No Cross                                               |                                 |                               |                                      |                                           | Unknown                                                |                                 |                               |                                      |                                           |
| 401–600 V ac                             | 480                                                    | 1500 V                          | 20 kA                         | 200 kA                               | 1, 2, 3, 4                                | 440 V                                                  | Unavailable                     | Unavailable                   | Unavailable                          | Unavailable                               |
|                                          | 550                                                    | 2000 V                          | 20 kA                         | 200 kA                               | 1, 2, 3, 4                                | Unknown                                                |                                 |                               |                                      |                                           |
| 601 V ac–1000 V ac                       | 750                                                    | 2500 V                          | 20 kA                         | 200 kA                               | 1, 2, 3                                   | Unknown                                                |                                 |                               |                                      |                                           |
|                                          | No Cross                                               |                                 |                               |                                      |                                           | Unknown                                                |                                 |                               |                                      |                                           |
| 1000 V dc–1300 V dc                      | 1100                                                   | 2500 V                          | 20 kA                         | 50 kA                                | 3                                         | Unknown                                                |                                 |                               |                                      |                                           |
| 1300 V dc–1500 V dc                      | 1500                                                   | 4000 V                          | 20 kA                         | 65 kA                                | 3                                         | Unknown                                                |                                 |                               |                                      |                                           |
| Miscellaneous                            |                                                        |                                 |                               |                                      |                                           |                                                        |                                 |                               |                                      |                                           |
| Fault Indication                         | Yes, Mechanical (Red/Green)                            |                                 |                               |                                      |                                           | Yes, Mechanical ( Red/Yellow/Green)                    |                                 |                               |                                      |                                           |
| Safety Reserve                           | N                                                      |                                 |                               |                                      |                                           | Optional                                               |                                 |                               |                                      |                                           |
| Thermal Protection                       | Y                                                      |                                 |                               |                                      |                                           | Unknown                                                |                                 |                               |                                      |                                           |
| Follow Current                           | N                                                      |                                 |                               |                                      |                                           | N                                                      |                                 |                               |                                      |                                           |
| Leakage Free                             | N                                                      |                                 |                               |                                      |                                           | Y                                                      |                                 |                               |                                      |                                           |
| Standards & Certifications               |                                                        |                                 |                               |                                      |                                           |                                                        |                                 |                               |                                      |                                           |
| IEC 61643-11                             | Y                                                      |                                 |                               |                                      |                                           | N                                                      |                                 |                               |                                      |                                           |
| UL 1449 4th Edition                      | Y                                                      |                                 |                               |                                      |                                           | Y                                                      |                                 |                               |                                      |                                           |

# SPD2 Series

## Type 2 Surge Protection Devices

# COMPETITIVE ADVANTAGES

**INTERNAL  
USE ONLY**

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**CHARACTERISTICS**
**LITTELFUSE  
SPD2  
MOV**

**ABB  
OVR T2 40-...  
S P TS QS  
MOV**


| Lightning Impulse Current (10/350)       | Not Rated                                              |                                 |                               |                                      |                                           | 2 kA                                                   |                                 |                               |                                      |                                           |
|------------------------------------------|--------------------------------------------------------|---------------------------------|-------------------------------|--------------------------------------|-------------------------------------------|--------------------------------------------------------|---------------------------------|-------------------------------|--------------------------------------|-------------------------------------------|
| IEC Characteristics                      |                                                        |                                 |                               |                                      |                                           |                                                        |                                 |                               |                                      |                                           |
| Voltage Range                            | Maximum Continuous Operating Voltage (U <sub>C</sub> ) | I <sub>max</sub>                | Voltage Protection Level (Up) | TOV U <sub>T</sub> Withstand (5 sec) | TOV U <sub>T</sub> Safe Failure (120 min) | Maximum Continuous Operating Voltage (U <sub>C</sub> ) | I <sub>max</sub>                | Voltage Protection Level (Up) | TOV U <sub>T</sub> Withstand (5 sec) | TOV U <sub>T</sub> Safe Failure (120 min) |
| > 100 V ac                               | 75 V                                                   | 50 kA                           | 800 V                         | 114 V                                | 229 V                                     | Unknown                                                |                                 |                               |                                      |                                           |
|                                          | No Cross                                               |                                 |                               |                                      |                                           | Unknown                                                |                                 |                               |                                      |                                           |
| 101–200 V ac                             | 150 V                                                  | 50 kA                           | 1250 V                        | 229 V                                | 229 V                                     | Unknown                                                |                                 |                               |                                      |                                           |
| 201–300 V ac                             | 300 V                                                  | 50 kA                           | 1500 V                        | 337 V                                | 442 V                                     | 275 V                                                  | 40 kA                           | 1400 V                        | 337 V                                | Unknown                                   |
|                                          | No Cross                                               |                                 |                               |                                      |                                           | Unknown                                                |                                 |                               |                                      |                                           |
| 301–400 V ac                             | 350 V                                                  | 50 kA                           | 1750 V                        | 403 V                                | 529 V                                     | 350 V                                                  | 40 kA                           | 1500 V                        | 462 V                                | Unknown                                   |
|                                          | No Cross                                               |                                 |                               |                                      |                                           | Unknown                                                |                                 |                               |                                      |                                           |
| 401 V–600 V ac                           | 480 V                                                  | 50 kA                           | 2300 V                        | 581 V                                | 762 V                                     | 440 V                                                  | 40 kA                           | 1800 V                        | 581 V                                | Unknown                                   |
|                                          | 550 V                                                  | 50 kA                           | 2500 V                        | 697 V                                | 915 V                                     | Unknown                                                |                                 |                               |                                      |                                           |
| 601 V ac–1000 V ac                       | 750 V                                                  | 35 kA                           | 3400 V                        | 871 V                                | 1143 V                                    | 600 V                                                  | 40 kA                           | 2300 V                        | 792 V                                | Unknown                                   |
|                                          | No Cross                                               |                                 |                               |                                      |                                           | Unknown                                                |                                 |                               |                                      |                                           |
| 1000 V dc–1300 V dc                      |                                                        | 40 kA                           | 3800 V                        |                                      |                                           | Unknown                                                |                                 |                               |                                      |                                           |
| 1300 V dc–1500 V dc                      |                                                        | 30 kA                           | 5000 V                        |                                      |                                           | Unknown                                                |                                 |                               |                                      |                                           |
| I <sub>nominal</sub> (IEC, all voltages) | 20 kA                                                  |                                 |                               |                                      |                                           | 20 kA                                                  |                                 |                               |                                      |                                           |
| Back Up Fuse (IEC, all voltages)         | 315 A gG / 200 A gG                                    |                                 |                               |                                      |                                           | 125 A gG / 50 A gG                                     |                                 |                               |                                      |                                           |
| I <sub>SCCR</sub> (IEC, all voltages)    | 25 kA / 50 kA (except PV, 11 kA)                       |                                 |                               |                                      |                                           | 100 kA                                                 |                                 |                               |                                      |                                           |
| UL Characteristics                       |                                                        |                                 |                               |                                      |                                           |                                                        |                                 |                               |                                      |                                           |
| Voltage Range                            | Max Continuous Voltage (MCOV)                          | Voltage Protection Rating (VPR) | I <sub>nominal</sub>          | SCCR                                 | Poles                                     | Max Continuous Voltage (MCOV)                          | Voltage Protection Rating (VPR) | I <sub>nominal</sub>          | SCCR                                 | Poles                                     |
| > 100 V ac                               | 75                                                     | 330 V                           | 20 kA                         | 100 kA                               | 1, 2, 3, 4                                | Unknown                                                |                                 |                               |                                      |                                           |
|                                          | No Cross                                               |                                 |                               |                                      |                                           | Unknown                                                |                                 |                               |                                      |                                           |
| 101–200 V ac                             | 150                                                    | 600 V                           | 20 kA                         | 200 kA                               | 1, 2, 3, 4                                | Unknown                                                |                                 |                               |                                      |                                           |
| 201–300 V ac                             | 300                                                    | 900 V                           | 20 kA                         | 150 kA                               | 1, 2, 3, 4                                | 275 V                                                  | Unavailable                     | Unavailable                   | Unavailable                          | Unavailable                               |
|                                          | No Cross                                               |                                 |                               |                                      |                                           | Unknown                                                |                                 |                               |                                      |                                           |
| 301–400 V ac                             | 350                                                    | 1000 V                          | 20 kA                         | 200 kA                               | 1, 2, 3, 4                                | 350 V                                                  | Unavailable                     | Unavailable                   | Unavailable                          | Unavailable                               |
|                                          | No Cross                                               |                                 |                               |                                      |                                           | Unknown                                                |                                 |                               |                                      |                                           |
| 401–600 V ac                             | 480                                                    | 1500 V                          | 20 kA                         | 200 kA                               | 1, 2, 3, 4                                | 440 V                                                  | Unavailable                     | Unavailable                   | Unavailable                          | Unavailable                               |
|                                          | 550                                                    | 2000 V                          | 20 kA                         | 200 kA                               | 1, 2, 3, 4                                | Unknown                                                |                                 |                               |                                      |                                           |
| 601 V ac–1000 V ac                       | 750                                                    | 2500 V                          | 20 kA                         | 200 kA                               | 1, 2, 3                                   | 600 V                                                  | Unavailable                     | Unavailable                   | Unavailable                          | Unavailable                               |
|                                          | No Cross                                               |                                 |                               |                                      |                                           | Unknown                                                |                                 |                               |                                      |                                           |
| 1000 V dc–1300 V dc                      | 1100                                                   | 2500 V                          | 20 kA                         | 50 kA                                | 3                                         | Unknown                                                |                                 |                               |                                      |                                           |
| 1300 V dc–1500 V dc                      | 1500                                                   | 4000 V                          | 20 kA                         | 65 kA                                | 3                                         | Unknown                                                |                                 |                               |                                      |                                           |
| Miscellaneous                            |                                                        |                                 |                               |                                      |                                           |                                                        |                                 |                               |                                      |                                           |
| Fault Indication                         | Yes, Mechanical (Red/Green)                            |                                 |                               |                                      |                                           | Yes, Mechanical ( Red/Yellow/Green)                    |                                 |                               |                                      |                                           |
| Safety Reserve                           | N                                                      |                                 |                               |                                      |                                           | Optional                                               |                                 |                               |                                      |                                           |
| Thermal Protection                       | Y                                                      |                                 |                               |                                      |                                           | Unknown                                                |                                 |                               |                                      |                                           |
| Follow Current                           | N                                                      |                                 |                               |                                      |                                           | N                                                      |                                 |                               |                                      |                                           |
| Leakage Free                             | N                                                      |                                 |                               |                                      |                                           | Y                                                      |                                 |                               |                                      |                                           |
| Standards & Certifications               |                                                        |                                 |                               |                                      |                                           |                                                        |                                 |                               |                                      |                                           |
| IEC 61643-11                             | Y                                                      |                                 |                               |                                      |                                           | N                                                      |                                 |                               |                                      |                                           |
| UL 1449 4th Edition                      | Y                                                      |                                 |                               |                                      |                                           | Y                                                      |                                 |                               |                                      |                                           |

# SPD2 Series

## Type 2 Surge Protection Devices

# COMPETITIVE ADVANTAGES

**INTERNAL  
USE ONLY**

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**CHARACTERISTICS**
**LITTELFUSE  
SPD2  
MOV**

**BOURNS  
1210 Series  
MOV**


|                                          |                                                        |                                 |                               |                                      |                                           |                                                        |                                 |                               |                                      |                                           |
|------------------------------------------|--------------------------------------------------------|---------------------------------|-------------------------------|--------------------------------------|-------------------------------------------|--------------------------------------------------------|---------------------------------|-------------------------------|--------------------------------------|-------------------------------------------|
| Lightning Impulse Current (10/350)       | Not Rated                                              |                                 |                               |                                      |                                           | Not Rated                                              |                                 |                               |                                      |                                           |
| IEC Characteristics                      |                                                        |                                 |                               |                                      |                                           |                                                        |                                 |                               |                                      |                                           |
| Voltage Range                            | Maximum Continuous Operating Voltage (U <sub>C</sub> ) | I <sub>max</sub>                | Voltage Protection Level (Up) | TOV U <sub>T</sub> Withstand (5 sec) | TOV U <sub>T</sub> Safe Failure (120 min) | Maximum Continuous Operating Voltage (U <sub>C</sub> ) | I <sub>max</sub>                | Voltage Protection Level (Up) | TOV U <sub>T</sub> Withstand (5 sec) | TOV U <sub>T</sub> Safe Failure (120 min) |
| > 100 V ac                               | 75 V                                                   | 50 kA                           | 800 V                         | 114 V                                | 229 V                                     | No Cross                                               |                                 |                               |                                      |                                           |
|                                          | No Cross                                               |                                 |                               |                                      |                                           | No Cross                                               |                                 |                               |                                      |                                           |
| 101–200 V ac                             | 150 V                                                  | 50 kA                           | 1250 V                        | 229 V                                | 229 V                                     | 150 V                                                  | 100 kA                          | 900 V                         | 230 V                                | Unknown                                   |
| 201–300 V ac                             | 300 V                                                  | 50 kA                           | 1500 V                        | 337 V                                | 442 V                                     | 275 V                                                  | 100 kA                          | 1250 V                        | 440 V                                | Unknown                                   |
|                                          | No Cross                                               |                                 |                               |                                      |                                           | No Cross                                               |                                 |                               |                                      |                                           |
| 301–400 V ac                             | 350 V                                                  | 50 kA                           | 1750 V                        | 403 V                                | 529 V                                     | No Cross                                               |                                 |                               |                                      |                                           |
|                                          | No Cross                                               |                                 |                               |                                      |                                           | No Cross                                               |                                 |                               |                                      |                                           |
| 401 V–600 V ac                           | 480 V                                                  | 50 kA                           | 2300 V                        | 581 V                                | 762 V                                     | 420 V                                                  | 100 kA                          | 1800 V                        | 770 V                                | Unknown                                   |
|                                          | 550 V                                                  | 50 kA                           | 2500 V                        | 697 V                                | 915 V                                     | No Cross                                               |                                 |                               |                                      |                                           |
| 601 V ac–1000 V ac                       | 750 V                                                  | 35 kA                           | 3400 V                        | 871 V                                | 1143 V                                    | No Cross                                               |                                 |                               |                                      |                                           |
|                                          | No Cross                                               |                                 |                               |                                      |                                           | 840 V                                                  | 100 kA                          | 4000 V                        | 1117 V                               | Unknown                                   |
| 1000 V dc–1300 V dc                      |                                                        | 40 kA                           | 3800 V                        |                                      |                                           | No Cross                                               |                                 |                               |                                      |                                           |
| 1300 V dc–1500 V dc                      |                                                        | 30 kA                           | 5000 V                        |                                      |                                           | No Cross                                               |                                 |                               |                                      |                                           |
| I <sub>nominal</sub> (IEC, all voltages) | 20 kA                                                  |                                 |                               |                                      |                                           | 20 kA                                                  |                                 |                               |                                      |                                           |
| Back Up Fuse (IEC, all voltages)         | 315 A gG / 200 A gG                                    |                                 |                               |                                      |                                           | Unknown                                                |                                 |                               |                                      |                                           |
| I <sub>SCCR</sub> (IEC, all voltages)    | 25 kA / 50 kA (except PV, 11 kA)                       |                                 |                               |                                      |                                           | Unknown                                                |                                 |                               |                                      |                                           |
| UL Characteristics                       |                                                        |                                 |                               |                                      |                                           |                                                        |                                 |                               |                                      |                                           |
| Voltage Range                            | Max Continuous Voltage (MCOV)                          | Voltage Protection Rating (VPR) | I <sub>nominal</sub>          | SCCR                                 | Poles                                     | Max Continuous Voltage (MCOV)                          | Voltage Protection Rating (VPR) | I <sub>nominal</sub>          | SCCR                                 | Poles                                     |
| > 100 V ac                               | 75                                                     | 330 V                           | 20 kA                         | 100 kA                               | 1, 2, 3, 4                                | No Cross                                               |                                 |                               |                                      |                                           |
|                                          | No Cross                                               |                                 |                               |                                      |                                           | No Cross                                               |                                 |                               |                                      |                                           |
| 101–200 V ac                             | 150                                                    | 600 V                           | 20 kA                         | 200 kA                               | 1, 2, 3, 4                                | 150                                                    | 600 V                           | 20 kA                         | 100 kA                               | 1, 2, 3, 4                                |
| 201–300 V ac                             | 300                                                    | 900 V                           | 20 kA                         | 150 kA                               | 1, 2, 3, 4                                | 275                                                    | 900 V                           | 20 kA                         | 100 kA                               | 1, 2, 3, 4                                |
|                                          | No Cross                                               |                                 |                               |                                      |                                           | No Cross                                               |                                 |                               |                                      |                                           |
| 301–400 V ac                             | 350                                                    | 1000 V                          | 20 kA                         | 200 kA                               | 1, 2, 3, 4                                | No Cross                                               |                                 |                               |                                      |                                           |
|                                          | No Cross                                               |                                 |                               |                                      |                                           | No Cross                                               |                                 |                               |                                      |                                           |
| 401–600 V ac                             | 480                                                    | 1500 V                          | 20 kA                         | 200 kA                               | 1, 2, 3, 4                                | 420                                                    | 1200 V                          | 20 kA                         | 100 kA                               | 1, 2, 3, 4                                |
|                                          | 550                                                    | 2000 V                          | 20 kA                         | 200 kA                               | 1, 2, 3, 4                                | No Cross                                               |                                 |                               |                                      |                                           |
| 601 V ac–1000 V ac                       | 750                                                    | 2500 V                          | 20 kA                         | 200 kA                               | 1, 2, 3                                   | No Cross                                               |                                 |                               |                                      |                                           |
|                                          | No Cross                                               |                                 |                               |                                      |                                           | 840                                                    | 3000 V                          | 20 kA                         | 100 kA                               | 1, 2, 3, 4                                |
| 1000 V dc–1300 V dc                      | 1100                                                   | 2500 V                          | 20 kA                         | 50 kA                                | 3                                         | No Cross                                               |                                 |                               |                                      |                                           |
| 1300 V dc–1500 V dc                      | 1500                                                   | 4000 V                          | 20 kA                         | 65 kA                                | 3                                         | No Cross                                               |                                 |                               |                                      |                                           |
| Miscellaneous                            |                                                        |                                 |                               |                                      |                                           |                                                        |                                 |                               |                                      |                                           |
| Fault Indication                         | Yes, Mechanical (Red/Green)                            |                                 |                               |                                      |                                           | Y                                                      |                                 |                               |                                      |                                           |
| Safety Reserve                           | N                                                      |                                 |                               |                                      |                                           | Unknown                                                |                                 |                               |                                      |                                           |
| Thermal Protection                       | Y                                                      |                                 |                               |                                      |                                           | Unknown                                                |                                 |                               |                                      |                                           |
| Follow Current                           | N                                                      |                                 |                               |                                      |                                           | N                                                      |                                 |                               |                                      |                                           |
| Leakage Free                             | N                                                      |                                 |                               |                                      |                                           | <1 mA                                                  |                                 |                               |                                      |                                           |
| Standards & Certifications               |                                                        |                                 |                               |                                      |                                           |                                                        |                                 |                               |                                      |                                           |
| IEC 61643-11                             | Y                                                      |                                 |                               |                                      |                                           | Y                                                      |                                 |                               |                                      |                                           |
| UL 1449 4th Edition                      | Y                                                      |                                 |                               |                                      |                                           | Y                                                      |                                 |                               |                                      |                                           |

# SPD2 Series

## Type 2 Surge Protection Devices

# COMPETITIVE ADVANTAGES

**INTERNAL  
USE ONLY**

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**CHARACTERISTICS**
**LITTELFUSE  
SPD2  
MOV**

**BOURNS  
1250 Series  
MOV**


|                                          |                                                        |                                 |                               |                                      |                                           |                                                        |                                 |                               |                                      |                                           |
|------------------------------------------|--------------------------------------------------------|---------------------------------|-------------------------------|--------------------------------------|-------------------------------------------|--------------------------------------------------------|---------------------------------|-------------------------------|--------------------------------------|-------------------------------------------|
| Lightning Impulse Current (10/350)       | Not Rated                                              |                                 |                               |                                      |                                           | Not Rated                                              |                                 |                               |                                      |                                           |
| IEC Characteristics                      |                                                        |                                 |                               |                                      |                                           |                                                        |                                 |                               |                                      |                                           |
| Voltage Range                            | Maximum Continuous Operating Voltage (U <sub>C</sub> ) | I <sub>max</sub>                | Voltage Protection Level (Up) | TOV U <sub>T</sub> Withstand (5 sec) | TOV U <sub>T</sub> Safe Failure (120 min) | Maximum Continuous Operating Voltage (U <sub>C</sub> ) | I <sub>max</sub>                | Voltage Protection Level (Up) | TOV U <sub>T</sub> Withstand (5 sec) | TOV U <sub>T</sub> Safe Failure (120 min) |
| > 100 V ac                               | 75 V                                                   | 50 kA                           | 800 V                         | 114 V                                | 229 V                                     | No Cross                                               |                                 |                               |                                      |                                           |
|                                          | No Cross                                               |                                 |                               |                                      |                                           | No Cross                                               |                                 |                               |                                      |                                           |
| 101–200 V ac                             | 150 V                                                  | 50 kA                           | 1250 V                        | 229 V                                | 229 V                                     | 150                                                    | 50 kA                           | 900 V                         | 230 V                                | Unknown                                   |
| 201–300 V ac                             | 300 V                                                  | 50 kA                           | 1500 V                        | 337 V                                | 442 V                                     | 275                                                    | 50 kA                           | 1250 V                        | 440 V                                | Unknown                                   |
|                                          | No Cross                                               |                                 |                               |                                      |                                           | No Cross                                               |                                 |                               |                                      |                                           |
| 301–400 V ac                             | 350 V                                                  | 50 kA                           | 1750 V                        | 403 V                                | 529 V                                     | No Cross                                               |                                 |                               |                                      |                                           |
|                                          | No Cross                                               |                                 |                               |                                      |                                           | No Cross                                               |                                 |                               |                                      |                                           |
| 401 V–600 V ac                           | 480 V                                                  | 50 kA                           | 2300 V                        | 581 V                                | 762 V                                     | 420                                                    | 50 kA                           | 1800 V                        | 440 V                                | Unknown                                   |
|                                          | 550 V                                                  | 50 kA                           | 2500 V                        | 697 V                                | 915 V                                     | 550                                                    | 50 kA                           | 2500 V                        | 770 V                                | Unknown                                   |
| 601 V ac–1000 V ac                       | 750 V                                                  | 35 kA                           | 3400 V                        | 871 V                                | 1143 V                                    | No Cross                                               |                                 |                               |                                      |                                           |
|                                          | No Cross                                               |                                 |                               |                                      |                                           | No Cross                                               |                                 |                               |                                      |                                           |
| 1000 V dc–1300 V dc                      |                                                        | 40 kA                           | 3800 V                        |                                      |                                           | No Cross                                               |                                 |                               |                                      |                                           |
| 1300 V dc–1500 V dc                      |                                                        | 30 kA                           | 5000 V                        |                                      |                                           | No Cross                                               |                                 |                               |                                      |                                           |
| I <sub>nominal</sub> (IEC, all voltages) | 20 kA                                                  |                                 |                               |                                      |                                           | 20 kA                                                  |                                 |                               |                                      |                                           |
| Back Up Fuse (IEC, all voltages)         | 315 A gG / 200 A gG                                    |                                 |                               |                                      |                                           | Unknown                                                |                                 |                               |                                      |                                           |
| I <sub>SCCR</sub> (IEC, all voltages)    | 25 kA / 50 kA (except PV, 11 kA)                       |                                 |                               |                                      |                                           | Unknown                                                |                                 |                               |                                      |                                           |
| UL Characteristics                       |                                                        |                                 |                               |                                      |                                           |                                                        |                                 |                               |                                      |                                           |
| Voltage Range                            | Max Continuous Voltage (MCOV)                          | Voltage Protection Rating (VPR) | I <sub>nominal</sub>          | SCCR                                 | Poles                                     | Max Continuous Voltage (MCOV)                          | Voltage Protection Rating (VPR) | I <sub>nominal</sub>          | SCCR                                 | Poles                                     |
| > 100 V ac                               | 75                                                     | 330 V                           | 20 kA                         | 100 kA                               | 1, 2, 3, 4                                | No Cross                                               |                                 |                               |                                      |                                           |
|                                          | No Cross                                               |                                 |                               |                                      |                                           | No Cross                                               |                                 |                               |                                      |                                           |
| 101–200 V ac                             | 150                                                    | 600 V                           | 20 kA                         | 200 kA                               | 1, 2, 3, 4                                | 150                                                    | 700 V                           | 20 kA                         | 100 kA                               | 1, 2, 3, 4                                |
| 201–300 V ac                             | 300                                                    | 900 V                           | 20 kA                         | 150 kA                               | 1, 2, 3, 4                                | 275                                                    | 1000 V                          | 20 kA                         | 100 kA                               | 1, 2, 3, 4                                |
|                                          | No Cross                                               |                                 |                               |                                      |                                           | No Cross                                               |                                 |                               |                                      |                                           |
| 301–400 V ac                             | 350                                                    | 1000 V                          | 20 kA                         | 200 kA                               | 1, 2, 3, 4                                | No Cross                                               |                                 |                               |                                      |                                           |
|                                          | No Cross                                               |                                 |                               |                                      |                                           | No Cross                                               |                                 |                               |                                      |                                           |
| 401–600 V ac                             | 480                                                    | 1500 V                          | 20 kA                         | 200 kA                               | 1, 2, 3, 4                                | 420                                                    | 1200 V                          | 20 kA                         | 100 kA                               | 1, 2, 3, 4                                |
|                                          | 550                                                    | 2000 V                          | 20 kA                         | 200 kA                               | 1, 2, 3, 4                                | 550                                                    | 1800 V                          | 20 kA                         | 100 kA                               | 1, 2, 3, 4                                |
| 601 V ac–1000 V ac                       | 750                                                    | 2500 V                          | 20 kA                         | 200 kA                               | 1, 2, 3                                   | No Cross                                               |                                 |                               |                                      |                                           |
|                                          | No Cross                                               |                                 |                               |                                      |                                           | No Cross                                               |                                 |                               |                                      |                                           |
| 1000 V dc–1300 V dc                      | 1100                                                   | 2500 V                          | 20 kA                         | 50 kA                                | 3                                         | No Cross                                               |                                 |                               |                                      |                                           |
| 1300 V dc–1500 V dc                      | 1500                                                   | 4000 V                          | 20 kA                         | 65 kA                                | 3                                         | No Cross                                               |                                 |                               |                                      |                                           |
| Miscellaneous                            |                                                        |                                 |                               |                                      |                                           |                                                        |                                 |                               |                                      |                                           |
| Fault Indication                         | Yes, Mechanical (Red/Green)                            |                                 |                               |                                      |                                           | Y                                                      |                                 |                               |                                      |                                           |
| Safety Reserve                           | N                                                      |                                 |                               |                                      |                                           | Unknown                                                |                                 |                               |                                      |                                           |
| Thermal Protection                       | Y                                                      |                                 |                               |                                      |                                           | Unknown                                                |                                 |                               |                                      |                                           |
| Follow Current                           | N                                                      |                                 |                               |                                      |                                           | N                                                      |                                 |                               |                                      |                                           |
| Leakage Free                             | N                                                      |                                 |                               |                                      |                                           | <1 mA                                                  |                                 |                               |                                      |                                           |
| Standards & Certifications               |                                                        |                                 |                               |                                      |                                           |                                                        |                                 |                               |                                      |                                           |
| IEC 61643-11                             | Y                                                      |                                 |                               |                                      |                                           | Y                                                      |                                 |                               |                                      |                                           |
| UL 1449 4th Edition                      | Y                                                      |                                 |                               |                                      |                                           | Y                                                      |                                 |                               |                                      |                                           |

# SPD2 Series

## Type 2 Surge Protection Devices

# COMPETITIVE ADVANTAGES

**INTERNAL  
USE ONLY**

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**CHARACTERISTICS**
**LITTELFUSE  
SPD2  
MOV**

**DEHN  
DEHNguard M  
MOV**


|                                          |                                                        |                                 |                               |                                      |                                           |                                                                |                                 |                               |                                      |                                           |
|------------------------------------------|--------------------------------------------------------|---------------------------------|-------------------------------|--------------------------------------|-------------------------------------------|----------------------------------------------------------------|---------------------------------|-------------------------------|--------------------------------------|-------------------------------------------|
| Lightning Impulse Current (10/350)       | Not Rated                                              |                                 |                               |                                      |                                           | Not Rated                                                      |                                 |                               |                                      |                                           |
| IEC Characteristics                      |                                                        |                                 |                               |                                      |                                           |                                                                |                                 |                               |                                      |                                           |
| Voltage Range                            | Maximum Continuous Operating Voltage (U <sub>C</sub> ) | I <sub>max</sub>                | Voltage Protection Level (Up) | TOV U <sub>T</sub> Withstand (5 sec) | TOV U <sub>T</sub> Safe Failure (120 min) | Maximum Continuous Operating Voltage (U <sub>C</sub> )         | I <sub>max</sub>                | Voltage Protection Level (Up) | TOV U <sub>T</sub> Withstand (5 sec) | TOV U <sub>T</sub> Safe Failure (120 min) |
| > 100 V ac                               | 75 V                                                   | 50 kA                           | 800 V                         | 114 V                                | 229 V                                     | No Cross                                                       |                                 |                               |                                      |                                           |
|                                          | No Cross                                               |                                 |                               |                                      |                                           | No Cross                                                       |                                 |                               |                                      |                                           |
| 101–200 V ac                             | 150 V                                                  | 50 kA                           | 1250 V                        | 229 V                                | 229 V                                     | 150 V                                                          | 40 kA                           | 700 V                         | 175 V                                | 230 V                                     |
| 201–300 V ac                             | 300 V                                                  | 50 kA                           | 1500 V                        | 337 V                                | 442 V                                     | 275 V                                                          | 40 kA                           | 1500 V                        | 335 V                                | 440 V                                     |
|                                          | No Cross                                               |                                 |                               |                                      |                                           | No Cross                                                       |                                 |                               |                                      |                                           |
| 301–400 V ac                             | 350 V                                                  | 50 kA                           | 1750 V                        | 403 V                                | 529 V                                     | 385 V                                                          | 40 kA                           | 1750 V                        | 335 V                                | 440 V                                     |
|                                          | No Cross                                               |                                 |                               |                                      |                                           | No Cross                                                       |                                 |                               |                                      |                                           |
| 401 V–600 V ac                           | 480 V                                                  | 50 kA                           | 2300 V                        | 581 V                                | 762 V                                     | 440 V                                                          | 40 kA                           | 2000 V                        | 335 V                                | 440 V                                     |
|                                          | 550 V                                                  | 50 kA                           | 2500 V                        | 697 V                                | 915 V                                     | No Cross                                                       |                                 |                               |                                      |                                           |
| 601 V ac–1000 V ac                       | 750 V                                                  | 35 kA                           | 3400 V                        | 871 V                                | 1143 V                                    | No Cross                                                       |                                 |                               |                                      |                                           |
|                                          | No Cross                                               |                                 |                               |                                      |                                           | No Cross                                                       |                                 |                               |                                      |                                           |
| 1000 V dc–1300 V dc                      |                                                        | 40 kA                           | 3800 V                        |                                      |                                           | No Cross                                                       |                                 |                               |                                      |                                           |
| 1300 V dc–1500 V dc                      |                                                        | 30 kA                           | 5000 V                        |                                      |                                           | No Cross                                                       |                                 |                               |                                      |                                           |
| I <sub>nominal</sub> (IEC, all voltages) | 20 kA                                                  |                                 |                               |                                      |                                           | 20 kA (Under 200 V ac 15 kA)                                   |                                 |                               |                                      |                                           |
| Back Up Fuse (IEC, all voltages)         | 315 A gG / 200 A gG                                    |                                 |                               |                                      |                                           | 125 A gG (Version Uc 600 V 100 A gG and 25 kA <sub>rms</sub> ) |                                 |                               |                                      |                                           |
| I <sub>SCCR</sub> (IEC, all voltages)    | 25 kA / 50 kA (except PV, 11 kA)                       |                                 |                               |                                      |                                           | 50 kA                                                          |                                 |                               |                                      |                                           |
| UL Characteristics                       |                                                        |                                 |                               |                                      |                                           |                                                                |                                 |                               |                                      |                                           |
| Voltage Range                            | Max Continuous Voltage (MCOV)                          | Voltage Protection Rating (VPR) | I <sub>nominal</sub>          | SCCR                                 | Poles                                     | Max Continuous Voltage (MCOV)                                  | Voltage Protection Rating (VPR) | I <sub>nominal</sub>          | SCCR                                 | Poles                                     |
| > 100 V ac                               | 75                                                     | 330 V                           | 20 kA                         | 100 kA                               | 1, 2, 3, 4                                | No Cross                                                       |                                 |                               |                                      |                                           |
|                                          | No Cross                                               |                                 |                               |                                      |                                           | No Cross                                                       |                                 |                               |                                      |                                           |
| 101–200 V ac                             | 150                                                    | 600 V                           | 20 kA                         | 200 kA                               | 1, 2, 3, 4                                | 150 V                                                          | Unknown                         | 20 kA                         | Unknown                              | 2, 3, 4                                   |
| 201–300 V ac                             | 300                                                    | 900 V                           | 20 kA                         | 150 kA                               | 1, 2, 3, 4                                | 275 V                                                          | Unknown                         | 20 kA                         | Unknown                              | 2, 3, 4                                   |
|                                          | No Cross                                               |                                 |                               |                                      |                                           | No Cross                                                       |                                 |                               |                                      |                                           |
| 301–400 V ac                             | 350                                                    | 1000 V                          | 20 kA                         | 200 kA                               | 1, 2, 3, 4                                | 385 V                                                          | Unknown                         | 20 kA                         | Unknown                              | 2, 3, 4                                   |
|                                          | No Cross                                               |                                 |                               |                                      |                                           | No Cross                                                       |                                 |                               |                                      |                                           |
| 401–600 V ac                             | 480                                                    | 1500 V                          | 20 kA                         | 200 kA                               | 1, 2, 3, 4                                | 440 V                                                          | Unknown                         | 10 kA                         | Unknown                              | 2, 3, 4                                   |
|                                          | 550                                                    | 2000 V                          | 20 kA                         | 200 kA                               | 1, 2, 3, 4                                | No Cross                                                       |                                 |                               |                                      |                                           |
| 601 V ac–1000 V ac                       | 750                                                    | 2500 V                          | 20 kA                         | 200 kA                               | 1, 2, 3                                   | No Cross                                                       |                                 |                               |                                      |                                           |
|                                          | No Cross                                               |                                 |                               |                                      |                                           | No Cross                                                       |                                 |                               |                                      |                                           |
| 1000 V dc–1300 V dc                      | 1100                                                   | 2500 V                          | 20 kA                         | 50 kA                                | 3                                         | No Cross                                                       |                                 |                               |                                      |                                           |
| 1300 V dc–1500 V dc                      | 1500                                                   | 4000 V                          | 20 kA                         | 65 kA                                | 3                                         | No Cross                                                       |                                 |                               |                                      |                                           |
| Miscellaneous                            |                                                        |                                 |                               |                                      |                                           |                                                                |                                 |                               |                                      |                                           |
| Fault Indication                         | Yes, Mechanical (Red/Green)                            |                                 |                               |                                      |                                           | Yes, Mechanical (Red/Green)                                    |                                 |                               |                                      |                                           |
| Safety Reserve                           | N                                                      |                                 |                               |                                      |                                           | N                                                              |                                 |                               |                                      |                                           |
| Thermal Protection                       | Y                                                      |                                 |                               |                                      |                                           | Unknown                                                        |                                 |                               |                                      |                                           |
| Follow Current                           | N                                                      |                                 |                               |                                      |                                           | N                                                              |                                 |                               |                                      |                                           |
| Leakage Free                             | N                                                      |                                 |                               |                                      |                                           | N                                                              |                                 |                               |                                      |                                           |
| Standards & Certifications               |                                                        |                                 |                               |                                      |                                           |                                                                |                                 |                               |                                      |                                           |
| IEC 61643-11                             | Y                                                      |                                 |                               |                                      |                                           | Y                                                              |                                 |                               |                                      |                                           |
| UL 1449 4th Edition                      | Y                                                      |                                 |                               |                                      |                                           | Y                                                              |                                 |                               |                                      |                                           |

# SPD2 Series

## Type 2 Surge Protection Devices

# COMPETITIVE ADVANTAGES

**INTERNAL  
USE ONLY**

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| CHARACTERISTICS                          |                                                        | LITTELFUSE<br>SPD2<br>MOV       |                                            |                                      |                                           |                                                                       | DEHN<br>DEHNguard S<br>MOV      |                                            |                                                        |                                           |  |
|------------------------------------------|--------------------------------------------------------|---------------------------------|--------------------------------------------|--------------------------------------|-------------------------------------------|-----------------------------------------------------------------------|---------------------------------|--------------------------------------------|--------------------------------------------------------|-------------------------------------------|--|
| Lightning Impulse Current (10/350)       |                                                        | Not Rated                       |                                            |                                      |                                           |                                                                       | Not Rated                       |                                            |                                                        |                                           |  |
| IEC Characteristics                      |                                                        |                                 |                                            |                                      |                                           |                                                                       |                                 |                                            |                                                        |                                           |  |
| Voltage Range                            | Maximum Continuous Operating Voltage (U <sub>C</sub> ) | I <sub>max</sub>                | Voltage Protection Level (U <sub>p</sub> ) | TOV U <sub>T</sub> Withstand (5 sec) | TOV U <sub>T</sub> Safe Failure (120 min) | Maximum Continuous Operating Voltage (U <sub>C</sub> )                | I <sub>max</sub>                | Voltage Protection Level (U <sub>p</sub> ) | TOV U <sub>T</sub> Withstand (5 sec)                   | TOV U <sub>T</sub> Safe Failure (120 min) |  |
| > 100 V ac                               | 75 V                                                   | 50 kA                           | 800 V                                      | 114 V                                | 229 V                                     | 48                                                                    | 25 kA                           | 330 V                                      | 70 V                                                   | 90 V                                      |  |
|                                          | No Cross                                               |                                 |                                            |                                      |                                           | 75                                                                    | 40 kA                           | 400 V                                      | 90 V                                                   | 115 V                                     |  |
| 101–200 V ac                             | 150 V                                                  | 50 kA                           | 1250 V                                     | 229 V                                | 229 V                                     | 150                                                                   | 40 kA                           | 700 V                                      | 175 V                                                  | 230 V                                     |  |
| 201–300 V ac                             | 300 V                                                  | 50 kA                           | 1500 V                                     | 337 V                                | 442 V                                     | 275                                                                   | 40 kA                           | 1500 V                                     | 335 V                                                  | 440 V                                     |  |
|                                          | No Cross                                               |                                 |                                            |                                      |                                           | No Cross                                                              |                                 |                                            |                                                        |                                           |  |
| 301–400 V ac                             | 350 V                                                  | 50 kA                           | 1750 V                                     | 403 V                                | 529 V                                     | 320                                                                   | 40 kA                           | 1500 V                                     | 335 V                                                  | 440 V                                     |  |
|                                          | No Cross                                               |                                 |                                            |                                      |                                           | 385                                                                   | 40 kA                           | 1750 V                                     | 385 V                                                  | 440 V                                     |  |
| 401 V–600 V ac                           | 480 V                                                  | 50 kA                           | 2300 V                                     | 581 V                                | 762 V                                     | 440                                                                   | 40 kA                           | 2000 V                                     | 580 V                                                  | 765 V                                     |  |
|                                          | 550 V                                                  | 50 kA                           | 2500 V                                     | 697 V                                | 915 V                                     | No Cross                                                              |                                 |                                            |                                                        |                                           |  |
| 601 V ac–1000 V ac                       | 750 V                                                  | 35 kA                           | 3400 V                                     | 871 V                                | 1143 V                                    | 600                                                                   | 30 kA                           | 2500 V                                     | 700 V                                                  | 915 V                                     |  |
|                                          | No Cross                                               |                                 |                                            |                                      |                                           | No Cross                                                              |                                 |                                            |                                                        |                                           |  |
| 1000 V dc–1300 V dc                      |                                                        | 40 kA                           | 3800 V                                     |                                      |                                           | No Cross                                                              |                                 |                                            |                                                        |                                           |  |
| 1300 V dc–1500 V dc                      |                                                        | 30 kA                           | 5000 V                                     |                                      |                                           | No Cross                                                              |                                 |                                            |                                                        |                                           |  |
| I <sub>nominal</sub> (IEC, all voltages) | 20 kA                                                  |                                 |                                            |                                      |                                           | 7.5 kA (48 V ac and under)<br>15 kA (100 V ac–200 V ac and 500+ V ac) |                                 |                                            | 10 kA (75 V ac–100 V ac),<br>20 kA (200 V ac–500 V ac) |                                           |  |
| Back Up Fuse (IEC, all voltages)         | 315 A gG / 200 A gG                                    |                                 |                                            |                                      |                                           | 125 A gG (Version Uc 600 V 100 A gG and 25 kA <sub>rms</sub> )        |                                 |                                            |                                                        |                                           |  |
| I <sub>SCCR</sub> (IEC, all voltages)    | 25 kA / 50 kA (except PV, 11 kA)                       |                                 |                                            |                                      |                                           | 50 kA                                                                 |                                 |                                            |                                                        |                                           |  |
| UL Characteristics                       |                                                        |                                 |                                            |                                      |                                           |                                                                       |                                 |                                            |                                                        |                                           |  |
| Voltage Range                            | Max Continuous Voltage (MCOV)                          | Voltage Protection Rating (VPR) | I <sub>nominal</sub>                       | SCCR                                 | Poles                                     | Max Continuous Voltage (MCOV)                                         | Voltage Protection Rating (VPR) | I <sub>nominal</sub>                       | SCCR                                                   | Poles                                     |  |
| > 100 V ac                               | 75                                                     | 330 V                           | 20 kA                                      | 100 kA                               | 1, 2, 3, 4                                | 48                                                                    | Unknown                         | Unknown                                    | Unknown                                                | 1                                         |  |
|                                          | No Cross                                               |                                 |                                            |                                      |                                           | 75                                                                    | Unknown                         | Unknown                                    | Unknown                                                | 1                                         |  |
| 101–200 V ac                             | 150                                                    | 600 V                           | 20 kA                                      | 200 kA                               | 1, 2, 3, 4                                | 150                                                                   | Unknown                         | Unknown                                    | Unknown                                                | 1                                         |  |
| 201–300 V ac                             | 300                                                    | 900 V                           | 20 kA                                      | 150 kA                               | 1, 2, 3, 4                                | 275                                                                   | Unknown                         | Unknown                                    | Unknown                                                | 1                                         |  |
|                                          | No Cross                                               |                                 |                                            |                                      |                                           | No Cross                                                              |                                 |                                            |                                                        |                                           |  |
| 301–400 V ac                             | 350                                                    | 1000 V                          | 20 kA                                      | 200 kA                               | 1, 2, 3, 4                                | 320                                                                   | Unknown                         | Unknown                                    | Unknown                                                | 1                                         |  |
|                                          | No Cross                                               |                                 |                                            |                                      |                                           | 385                                                                   | Unknown                         | Unknown                                    | Unknown                                                | 1                                         |  |
| 401–600 V ac                             | 480                                                    | 1500 V                          | 20 kA                                      | 200 kA                               | 1, 2, 3, 4                                | 440                                                                   | Unknown                         | Unknown                                    | Unknown                                                | 1                                         |  |
|                                          | 550                                                    | 2000 V                          | 20 kA                                      | 200 kA                               | 1, 2, 3, 4                                | No Cross                                                              |                                 |                                            |                                                        |                                           |  |
| 601 V ac–1000 V ac                       | 750                                                    | 2500 V                          | 20 kA                                      | 200 kA                               | 1, 2, 3                                   | 600                                                                   | Unknown                         | Unknown                                    | Unknown                                                | 1                                         |  |
|                                          | No Cross                                               |                                 |                                            |                                      |                                           | No Cross                                                              |                                 |                                            |                                                        |                                           |  |
| 1000 V dc–1300 V dc                      | 1100                                                   | 2500 V                          | 20 kA                                      | 50 kA                                | 3                                         | No Cross                                                              |                                 |                                            |                                                        |                                           |  |
| 1300 V dc–1500 V dc                      | 1500                                                   | 4000 V                          | 20 kA                                      | 65 kA                                | 3                                         | No Cross                                                              |                                 |                                            |                                                        |                                           |  |
| Miscellaneous                            |                                                        |                                 |                                            |                                      |                                           |                                                                       |                                 |                                            |                                                        |                                           |  |
| Fault Indication                         | Yes, Mechanical (Red/Green)                            |                                 |                                            |                                      |                                           | Yes, Mechanical (Red/Green)                                           |                                 |                                            |                                                        |                                           |  |
| Safety Reserve                           | N                                                      |                                 |                                            |                                      |                                           | N                                                                     |                                 |                                            |                                                        |                                           |  |
| Thermal Protection                       | Y                                                      |                                 |                                            |                                      |                                           | Unknown                                                               |                                 |                                            |                                                        |                                           |  |
| Follow Current                           | N                                                      |                                 |                                            |                                      |                                           | N                                                                     |                                 |                                            |                                                        |                                           |  |
| Leakage Free                             | N                                                      |                                 |                                            |                                      |                                           | N                                                                     |                                 |                                            |                                                        |                                           |  |
| Standards & Certifications               |                                                        |                                 |                                            |                                      |                                           |                                                                       |                                 |                                            |                                                        |                                           |  |
| IEC 61643-11                             | Y                                                      |                                 |                                            |                                      |                                           | Y                                                                     |                                 |                                            |                                                        |                                           |  |
| UL 1449 4th Edition                      | Y                                                      |                                 |                                            |                                      |                                           | Y                                                                     |                                 |                                            |                                                        |                                           |  |