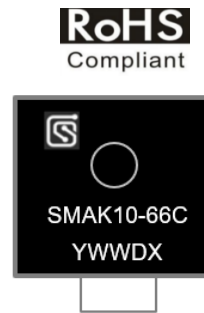
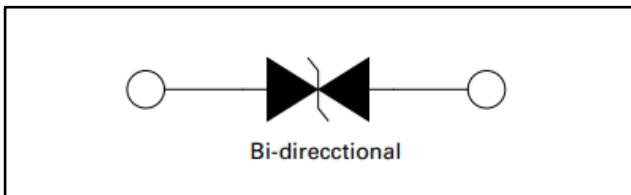


Features

- Patent pending package design
- Tube or tape and reel pack options available
- Low clamping and slope resistance.
- Meet MSL level1, per J-STD-020, LF maximum peak of 245°C
- Sharp breakdown voltage.
- High Power TVS designed in a surface mount and compact SMTO-218 package
- Meets MSL level 1, per J-STD-020, lead frame maximum peak of 260°C
- UL Recognized compound meeting flammability rating V-0



Function Diagram




| Maximum Ratings and Thermal Characteristics (T _A =25°C unless otherwise noted) | | | |
|--|------------------|------------|------|
| Parameter | Symbol | Value | Unit |
| Operating Junction Temperature | T _J | -55 to 125 | °C |
| Storage Temperature | T _{STG} | -55 to 150 | °C |
| Current Rating ¹ | I _{PP} | 10 | kA |
| Typical Thermal Resistance Junction to Lead | R _{θJL} | 10 | °C/W |
| Typical Thermal Resistance Junction to Ambient | R _{θJA} | 50 | °C/W |

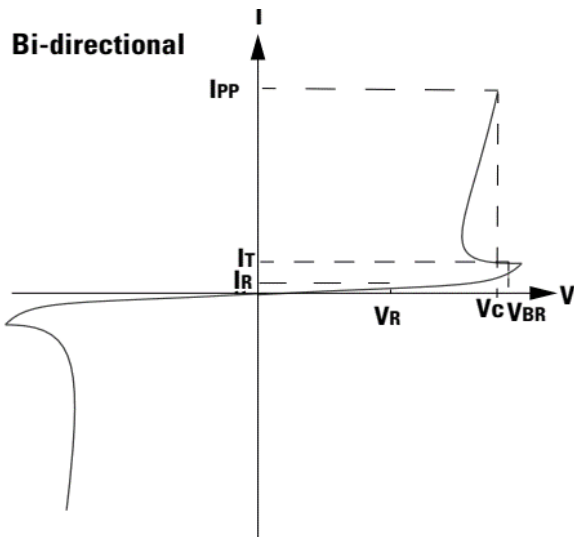
| AGENCY | AGENCY FILE NUMBER |
|--------|--------------------|
| | Pending |

Notes:
1. Rated I_{PP} measured with 8/20µs pulse.

Characteristics (T = 25°C unless otherwise noted)

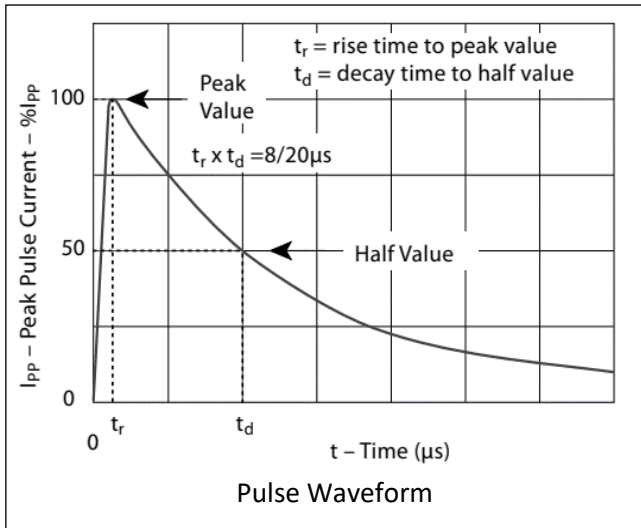
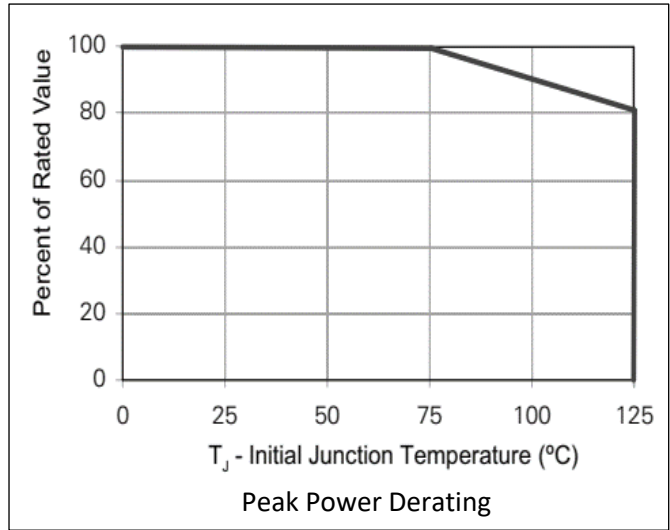
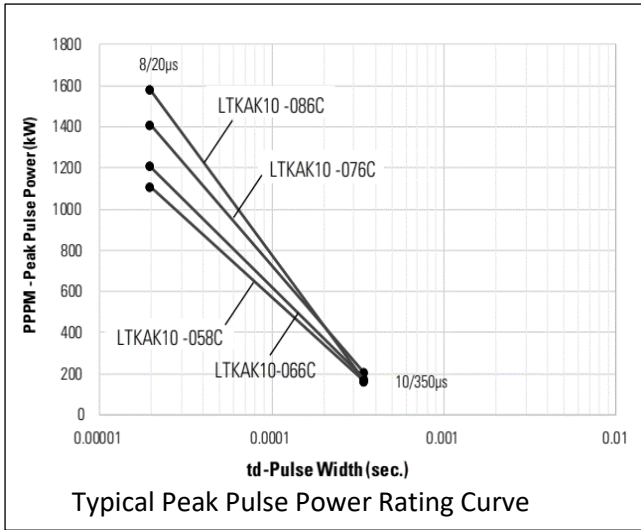
| Part Numbers | Standoff Voltage (V _{SO}) (V) | Max. Reverse Leakage (I _R) @V _{SO} (μA) | Reverse Breakdown Voltage (V _{BR}) @ I _T | | Test Current I _T (mA) | Max. Clamping Voltage V _{CL} @ Peak Pulse Current (I _{PP}) | | | Max. Temp Coefficient of V _{BR} (%/°C) | Max. Capacitance OV Bias 10kHz (nF) | Agency Approval | |
|--------------|---|--|---|-----------|----------------------------------|---|-----------------|----------------|---|-------------------------------------|-----------------|---|
| | | | Min Volts | Max Volts | | V _{CL} Volts | I _{PP} | | | | | |
| | | | | | | | (8/20μs) (A) | (10/350μs) (A) | | | | |
| SMAK10-030C | 30 | 30 | 32 | 37 | 10 | 58 | 10000 | 1400 | 1700 | 0.1 | 8.5 |  |
| SMAK10-058C | 58 | 10 | 64 | 70 | 10 | 110 | 10000 | 1400 | 1700 | 0.1 | 8.5 | |
| SMAK10-066C | 66 | 10 | 72 | 80 | 10 | 120 | 10000 | 1400 | 1700 | 0.1 | 7.5 | |
| SMAK10-076C | 76 | 10 | 85 | 95 | 10 | 140 | 10000 | 1400 | 1700 | 0.1 | 6.5 | |
| SMAK10-086C | 86 | 10 | 95 | 105 | 10 | 157 | 10000 | 1400 | 1700 | 0.1 | 6.5 | |

I-V Curve Characteristics



- P_{PPM} Peak Pulse Power Dissipation -- Max power dissipation
- V_R Stand-off Voltage -- Maximum voltage that can be applied to the TVS without operation
- V_{BR} Breakdown Voltage -- Maximum voltage that flows though the TVS at a specified test current (I_T)
- V_C Clamping Voltage -- Peak voltage measured across the TVS at a specified I_{PPM} (peak impulse current)
- I_R Reverse Leakage Current -- Current measured at V_R

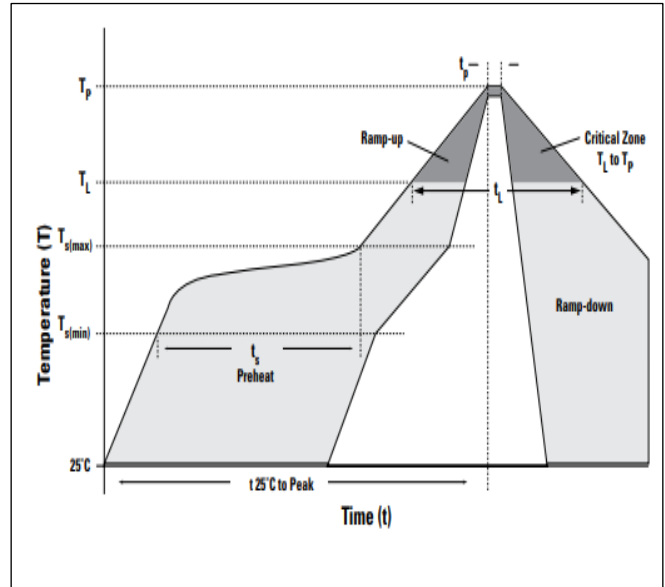
Ratings and Characteristic Curves (T = 25°C unless otherwise noted)



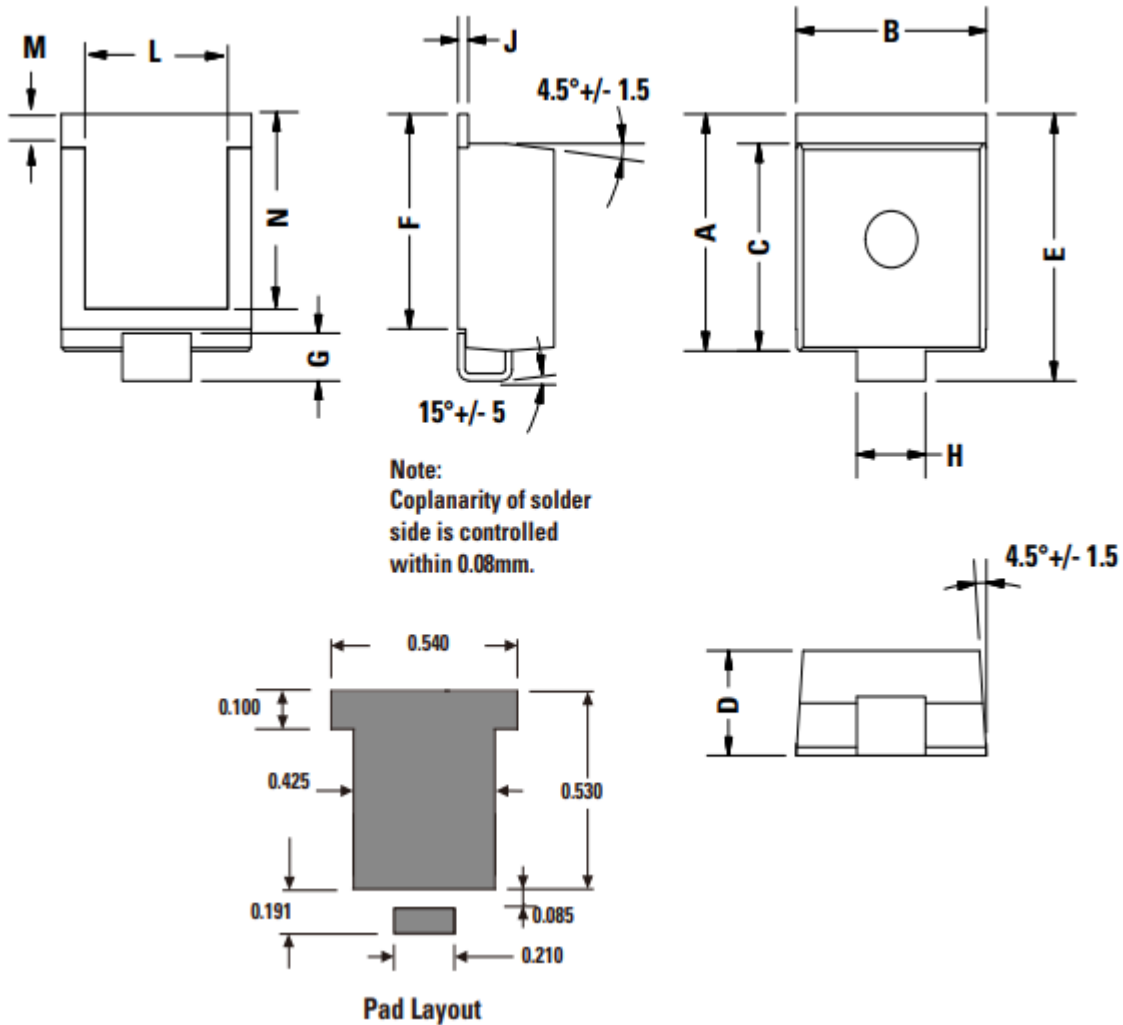
| Reflow Condition | | Lead-free assembly |
|--|------------------------------------|-------------------------|
| Pre Heat | - Temperature Min ($T_{s(min)}$) | 150°C |
| | - Temperature Max ($T_{s(max)}$) | 200°C |
| | - Time (min to max) (t_s) | 60 – 180 secs |
| Average ramp up rate (Liquidus Temp (T_A) to peak) | | 3°C/second max |
| $T_{s(max)}$ to T_A - Ramp-up Rate | | 3°C/second max |
| Reflow | - Temperature (T_A) (Liquidus) | 217°C |
| | - Time (min to max) (t_s) | 60 – 150 seconds |
| Peak Temperature (T_p) | | 245 ^{+0/-5} °C |
| Time within 5°C of actual peak Temperature (t_p) | | 20 – 40 seconds |
| Ramp-down Rate | | 6°C/second max |
| Time 25°C to peak Temperature (T_p) | | 8 minutes Max. |
| Do not exceed | | 245°C |

Soldering Parameters

Soldering profile



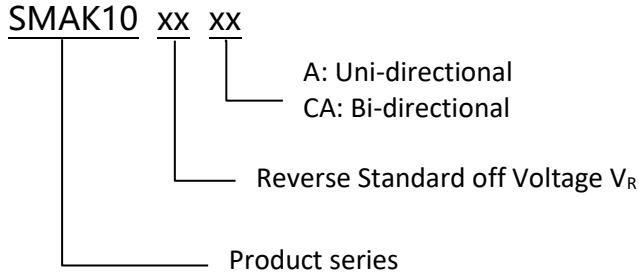
Dimensions



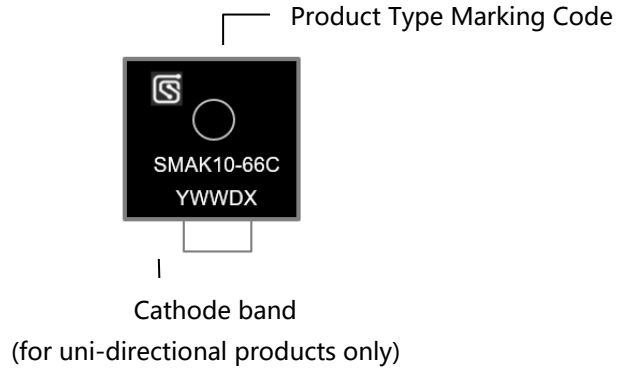
| Dimension | Inches | | Millimeters | |
|-----------|--------|-------|-------------|-------|
| | Min | Max | Min | Min |
| A | 0.621 | 0.655 | 15.78 | 16.63 |
| B | 0.529 | 0.594 | 13.43 | 15.29 |
| C | 0.544 | 0.561 | 13.83 | 14.24 |
| D | 0.273 | 0.285 | 6.94 | 7.24 |
| E | 0.702 | 0.737 | 17.82 | 18.72 |
| F | 0.567 | 0.587 | 14.40 | 14.90 |
| G | 0.087 | 0.126 | 2.20 | 3.20 |
| H | 0.193 | 0.222 | 4.89 | 5.65 |
| J | 0.028 | 0.033 | 0.72 | 0.85 |
| L | 0.400 | 0.440 | 10.17 | 11.17 |

| | | | | |
|---|-------|-------|-------|-------|
| M | 0.073 | 0.112 | 1.85 | 2.85 |
| N | 0.510 | 0.533 | 12.95 | 13.55 |

Part Numbering



Part Marking



Packing

| Part number | Package name | Small packing quantity | Packing method |
|-------------|--------------|------------------------|----------------|
| SMAK10XXXX | SMTO-218 | 400 | Tape & Reel |

Revision history of Specification

| Version | Change Items | Effective Date |
|---------|-----------------|----------------|
| 1.0 | Initial Release | 15-Aug-2021 |