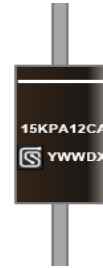


Features

- 15000W peak pulse power capability at 10/1000μs waveform, repetition rate (duty cycles):0.01%
- Excellent clamping capability
- Typical failure mode is a short circuit condition for current events exceeding component rating
- Plastic package is flammability rated V-0 per UL-94
- IEC61000-4-2 +/-30kV both contact and air
- IEC61000-4-4 50A(5/50nS)

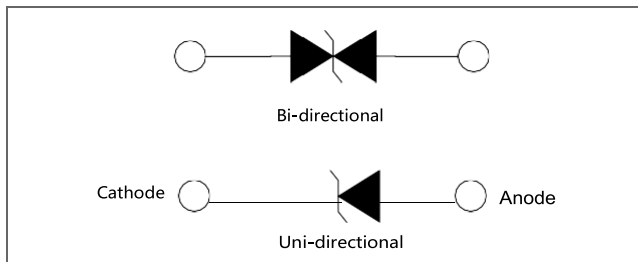
RoHS
Compliant



Applications

TVS devices are ideal for the transient voltage clamp protection of I/O Interfaces, DC power line bus and other circuits used in Telecom, Computer, Industrial and Consumer electronic applications.

Function Diagram




| Maximum Ratings and Thermal Characteristics (T _A =25°C unless otherwise noted) | | | |
|---|------------------|------------|------|
| Parameter | Symbol | Value | Unit |
| Peak Pulse Power Dissipation at T _A =25°C by 10/1000μs Waveform (Fig.3) | P _{PPM} | 15000 | W |
| Power Dissipation on Infinite Heat Sink at T _L =50°C | P _D | 8 | W |
| Peak Forward Surge Current, 8.3ms Single Half Sine Wave (Note 1) | I _{FSM} | 400 | A |
| Maximum Instantaneous Forward Voltage at 50A for Unidirectional Only(Note 2) | V _F | 3.5/5 | V |
| Operating Temperature Range | T _J | -55 to 150 | °C |
| Storage Temperature Range | T _{STG} | -55 to 150 | °C |

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

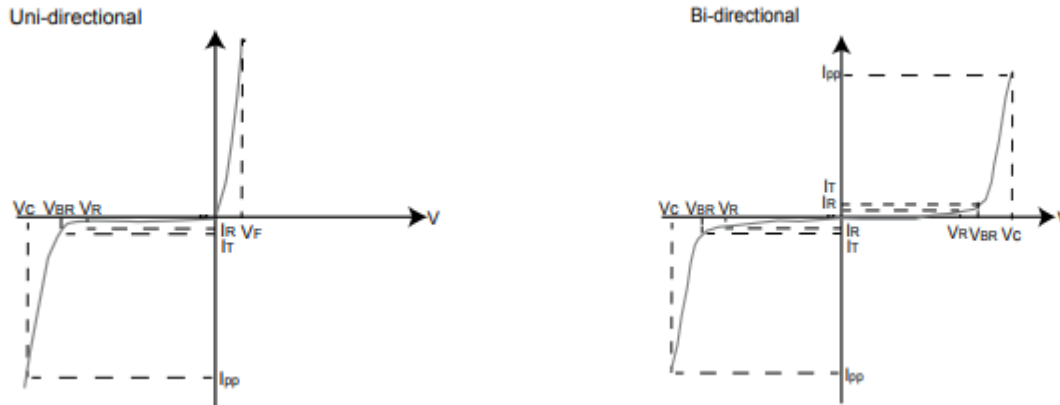
Notes:

1. Measured on 8.3ms single half sine wave or equivalent square wave for unidirectional device only, duty cycle=4 per minute maximum.
2. 3.5V for single die, 5V for stack die

Characteristics (T =25°C unless otherwise noted)

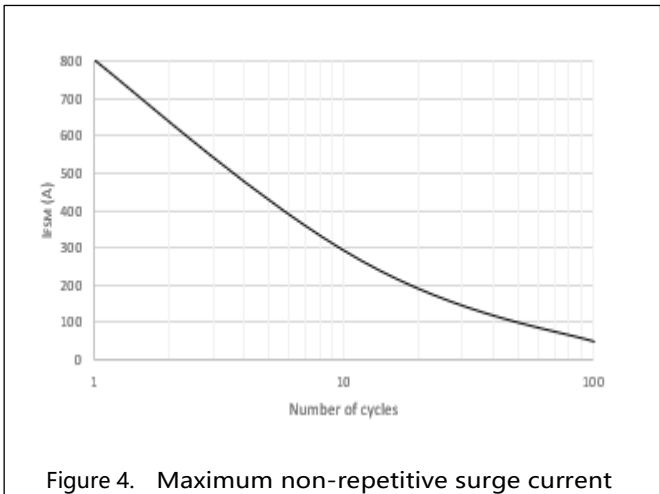
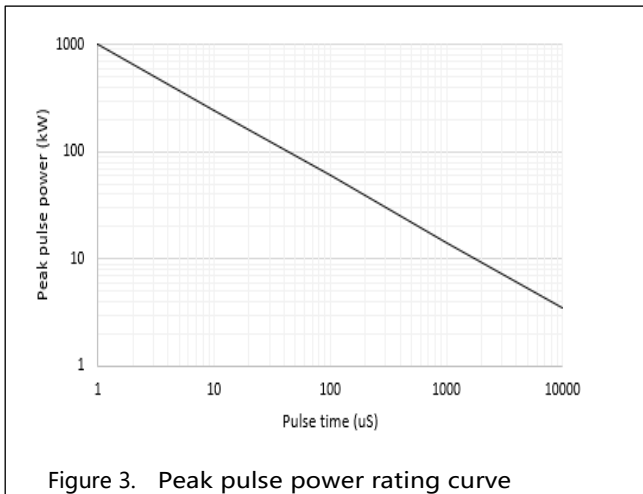
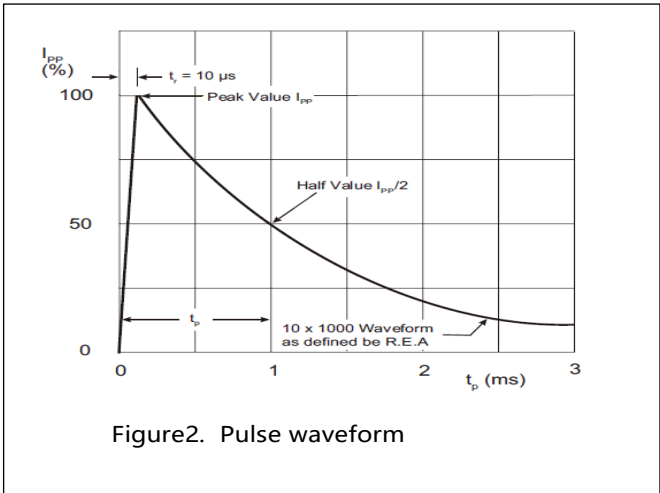
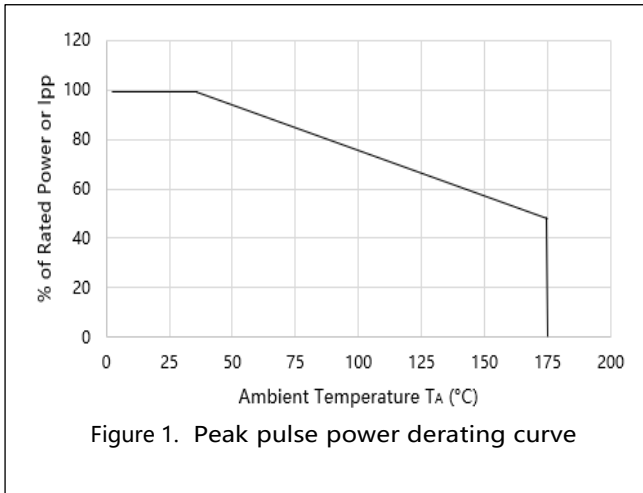
| Part Number (Uni) | Part Number (Bi) | Reverse Stand off Voltage V _R (Volts) | Breakdown Voltage V _{BR} (Volts) @ I _T | | Test Current I _T (mA) | Maximum Clamping Voltage V _C @ I _{nn} (V) | Maximum Peak Pulse Current I _{pp} (A) | Maximum Reverse Leakage I _R @ V _R (μA) | Agency Approval  |
|----------------------|---------------------|--|---|-------|---|---|---|---|---|
| | | | MIN | MAX | | | | | |
| 15KPA17A | 15KPA17CA | 17 | 18.99 | 20.79 | 50 | 29.3 | 515.4 | 5000 | |
| 15KPA18A | 15KPA18CA | 18 | 20.11 | 22.01 | 50 | 30.9 | 488.7 | 5000 | |
| 15KPA20A | 15KPA20CA | 20 | 22.34 | 24.46 | 20 | 34.3 | 440.2 | 1500 | |
| 15KPA22A | 15KPA22CA | 22 | 24.57 | 26.91 | 10 | 37.1 | 407.0 | 500 | |
| 15KPA24A | 15KPA24CA | 24 | 26.81 | 29.35 | 5 | 40.7 | 371.0 | 150 | |
| 15KPA26A | 15KPA26CA | 26 | 29.04 | 31.80 | 5 | 44.0 | 343.2 | 50 | |
| 15KPA28A | 15KPA28CA | 28 | 31.28 | 34.24 | 5 | 47.5 | 317.9 | 25 | |
| 15KPA30A | 15KPA30CA | 30 | 33.51 | 36.70 | 5 | 50.7 | 297.8 | 15 | |
| 15KPA33A | 15KPA33CA | 33 | 36.9 | 40.4 | 5 | 54.7 | 276.1 | 2 | |
| 15KPA36A | 15KPA36CA | 36 | 40.2 | 44.0 | 5 | 59.8 | 252.5 | 2 | |
| 15KPA40A | 15KPA40CA | 40 | 44.7 | 48.9 | 5 | 65.8 | 229.5 | 2 | |
| 15KPA43A | 15KPA43CA | 43 | 48.0 | 52.6 | 5 | 69.8 | 216.3 | 2 | |
| 15KPA45A | 15KPA45CA | 45 | 50.3 | 55.0 | 5 | 72.8 | 207.4 | 2 | |
| 15KPA48A | 15KPA48CA | 48 | 53.6 | 58.7 | 5 | 77.7 | 194.3 | 2 | |
| 15KPA51A | 15KPA51CA | 51 | 57.0 | 62.4 | 5 | 82.9 | 182.1 | 2 | |
| 15KPA54A | 15KPA54CA | 54 | 60.3 | 66.0 | 5 | 87.7 | 172.2 | 2 | |
| 15KPA58A | 15KPA58CA | 58 | 64.8 | 70.9 | 5 | 93.8 | 161.0 | 2 | |
| 15KPA60A | 15KPA60CA | 60 | 67.0 | 73.4 | 5 | 97.4 | 155.0 | 2 | |
| 15KPA64A | 15KPA64CA | 64 | 71.5 | 78.3 | 5 | 104.2 | 144.9 | 2 | |
| 15KPA70A | 15KPA70CA | 70 | 78.2 | 85.6 | 5 | 113.6 | 132.9 | 2 | |
| 15KPA75A | 15KPA75CA | 75 | 83.8 | 91.7 | 5 | 122.0 | 123.8 | 2 | |
| 15KPA78A | 15KPA78CA | 78 | 87.1 | 95.4 | 5 | 126.1 | 119.7 | 2 | |
| 15KPA85A | 15KPA85CA | 85 | 94.9 | 104.0 | 5 | 197.6 | 109.7 | 2 | |
| 15KPA90A | 15KPA90CA | 90 | 100.5 | 110.1 | 5 | 145.6 | 103.7 | 2 | |
| 15KPA100A | 15KPA100CA | 100 | 111.7 | 122.3 | 5 | 161.3 | 93.6 | 2 | |
| 15KPA110A | 15KPA110CA | 110 | 122.9 | 134.5 | 5 | 178.6 | 84.5 | 2 | |
| 15KPA120A | 15KPA120CA | 120 | 134.0 | 146.8 | 5 | 192.3 | 78.5 | 2 | |
| 15KPA130A | 15KPA130CA | 130 | 145.2 | 159.0 | 5 | 208.3 | 72.5 | 2 | |
| 15KPA150A | 15KPA150CA | 150 | 167.6 | 183.5 | 5 | 241.9 | 62.4 | 2 | |
| 15KPA160A | 15KPA160CA | 160 | 178.7 | 195.7 | 5 | 258.6 | 58.4 | 2 | |
| 15KPA170A | 15KPA170CA | 170 | 189.9 | 207.9 | 5 | 272.7 | 55.4 | 2 | |
| 15KPA180A | 15KPA180CA | 180 | 201.1 | 220.1 | 5 | 288.5 | 52.3 | 2 | |
| 15KPA200A | 15KPA200CA | 200 | 223.4 | 244.6 | 5 | 319.1 | 47.3 | 2 | |
| 15KPA220A | 15KPA220CA | 220 | 245.7 | 269.1 | 5 | 356.0 | 42.4 | 2 | |
| 15KPA240A | 15KPA240CA | 240 | 268.1 | 293.5 | 5 | 384.6 | 39.3 | 2 | |
| 15KPA260A | 15KPA260CA | 260 | 290.4 | 318.0 | 5 | 416.7 | 36.2 | 2 | |
| 15KPA280A | 15KPA280CA | 280 | 312.8 | 342.4 | 5 | 454.5 | 33.2 | 2 | |

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 through 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
- V_F Forward Voltage Drop for Uni-directional

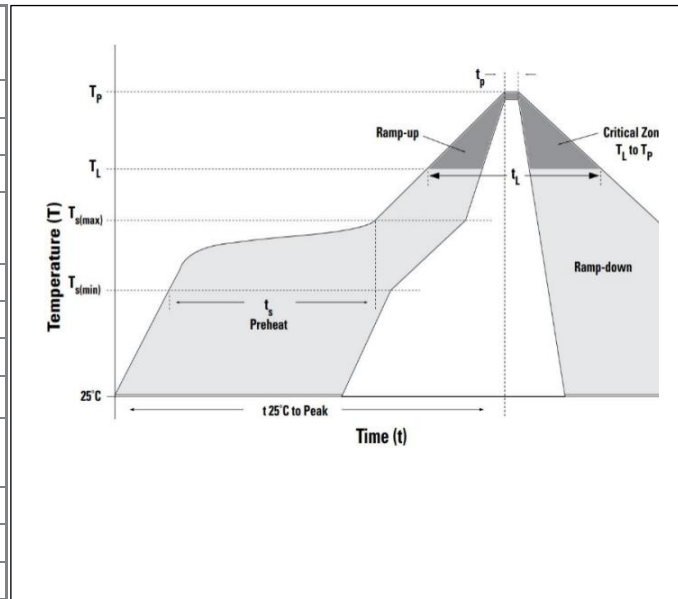
Ratings and Characteristic Curves (T = 25°C unless otherwise noted)



Soldering Parameters

Soldering profile

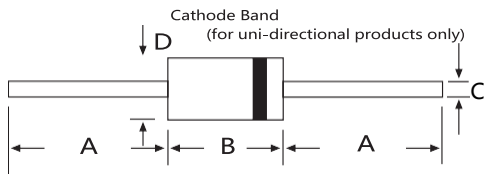
| | | |
|--|------------------------------------|--------------------|
| Reflow Condition | | Lead-free assembly |
| Pre Heat | - Temperature Min ($T_{S(min)}$) | 150°C |
| | - Temperature Max ($T_{S(max)}$) | 200°C |
| | - Time (min to max) (t_g) | 60 – 180 secs |
| Average ramp up rate (Liquidus Temp (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_g) | 60 – 150 seconds |
| Peak Temperature (T_p) | | 260+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 | | 260°C |



Flow/Wave Soldering (Solder Dipping)

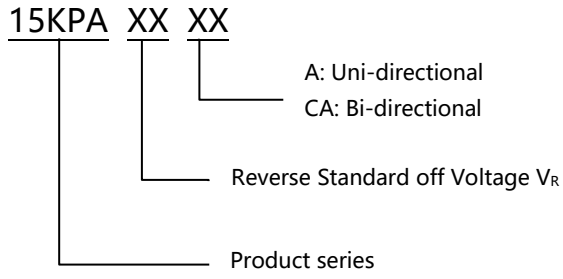
| | |
|-------------------|------------|
| Peak Temperature: | 265°C |
| Dipping Time: | 10 seconds |
| Soldering: | 1 time |

Dimensions

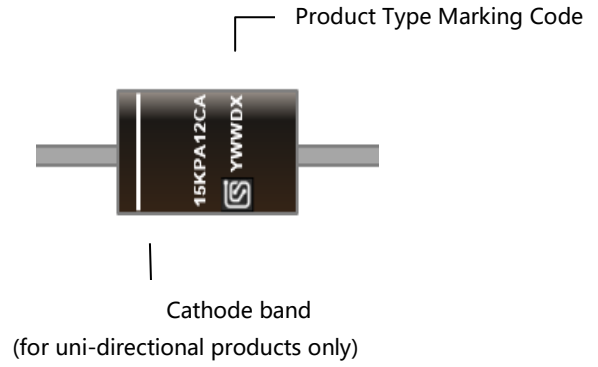


| Dimensions | Inches | | Millimeters | |
|------------|--------|-------|-------------|------|
| | Min | Max | Min | Max |
| A | 1.000 | - | 25.40 | - |
| B | 0.340 | 0.360 | 8.60 | 9.10 |
| C | 0.048 | 0.054 | 1.22 | 1.36 |
| D | 0.340 | 0.360 | 8.60 | 9.10 |

Part Numbering



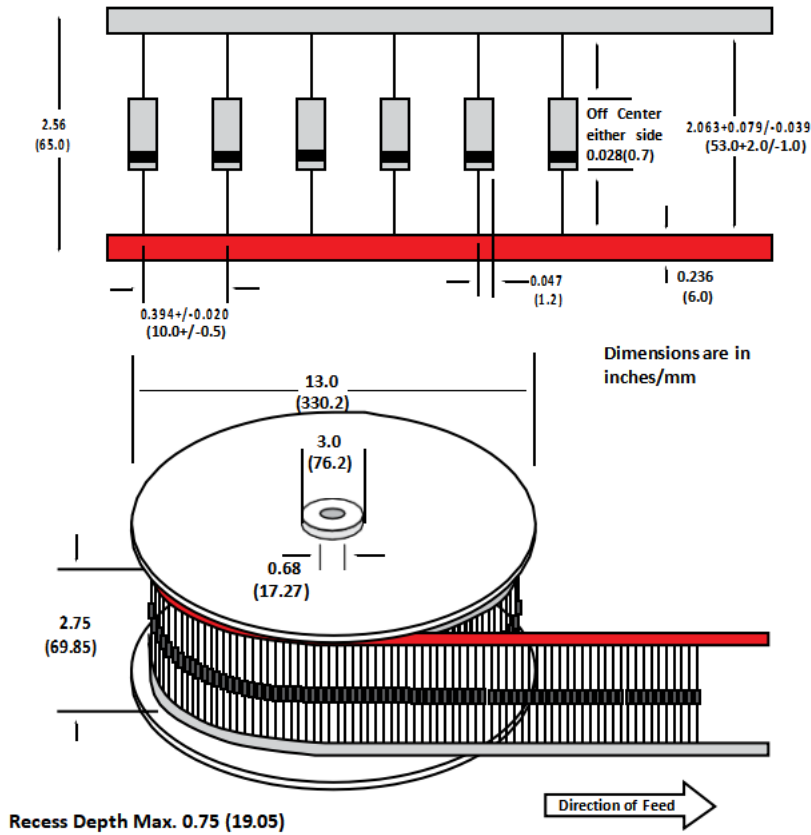
Part Marking



Packing

| Part number | Package name | Small packing quantity | Packing method |
|-------------|--------------|------------------------|----------------|
| 15KPAXXXX | P600 | 800 | Tape & Reel |
| 15KPAXXXX-B | P600 | 100 | Bulk |

Tape and Reel Specification



Revision history of Specification

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

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for [ESD Suppressors / TVS Diodes](#) category:

Click to view products by [SCME](#) manufacturer:

Other Similar products are found below :

[60KS200C](#) [D18V0L1B2LP-7B](#) [D5V0F4U5P5-7](#) [NTE4902](#) [P4KE27CA](#) [P6KE11CA](#) [P6KE8.2A](#) [SA60CA](#) [SA64CA](#) [SMBJ12CATR](#)
[SMBJ33CATR](#) [SMBJ6.5A](#) [SMBJ8.0A](#) [ESD101-B1-02ELS](#) [E6327](#) [ESD112-B1-02EL](#) [E6327](#) [ESD7451N2T5G](#) [19180-510](#) [CPDT-5V0USP-](#)
[HF](#) [3.0SMCJ33CA-F](#) [3.0SMCJ36A-F](#) [HSPC16701B02TP](#) [JANTX1N6126A](#) [D3V3Q1B2DLP3-7](#) [D55V0M1B2WS-7](#) [SCM1293A-04SO](#)
[ESD200-B1-CSP0201](#) [E6327](#) [SM12-7](#) [CEN955](#) [W/DATA](#) [VESD12A1A-HD1-GS08](#) [CPDQC5V0-HF](#) [D1213A-01LP4-7B](#) [ESD101-B1-02EL](#)
[E6327](#) [AOZ8808DI-03](#) [5KP15A](#) [5KP48A](#) [5KP90A](#) [ESD3V3D7-TP](#) [15KPA36A-LF](#) [P4KE56CA](#) [P4KE68A](#) [P4KE91CATR](#) [P6KE120A](#)
[P6KE13CA](#) [P6KE43CA](#) [P6KE6.8CA](#) [P6KE8.2](#) [P6SMBJ20CA](#) [JANTX1N6072A](#) [SR2835ESKG](#) [SA90CA](#)