

Features

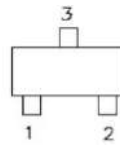
200W (8/20 μ s) Peak Pulse Power
High ESD Protection Level
SOT-323 Thin SMD Package
RoHS compliant
Matte Tin Lead finish (Pb-Free)
Protects two lines

C03

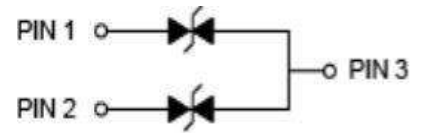
Applications

Dataline
Automatic Teller Machines
Net works
Power line

SOT-323



1.BASE
2.EMITTER
3.COLLECTOR



Schematic & PIN Configuration

Absolute Maximum Rating

| Parameter | Symbol | Limit | Unit |
|--|----------------------|------------|--------------------|
| IEC 61000-4-2 ESD Voltage | Air Model | ± 25 | kV |
| | Contact Model | ± 25 | |
| JESD22-A114-B ESD Voltage | Per Human Body Model | ± 16 | |
| | Machine Model | ± 0.4 | |
| Peak Pulse Power | $P_{PP(2)}$ | 200 | W |
| Peak Pulse Current | $I_{PP(2)}$ | 3 | A |
| Lead Solder Temperature – Maximum (10 Second Duration) | T_L | 260 | $^{\circ}\text{C}$ |
| Junction Temperature | T_j | 150 | $^{\circ}\text{C}$ |
| Storage Temperature Range | T_{stg} | -55 ~ +150 | $^{\circ}\text{C}$ |

(1).Device stressed with ten non-repetitive ESD pulses.

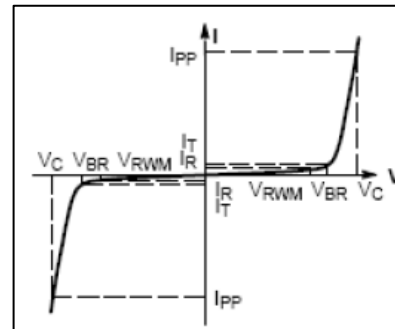
(2).Non-repetitive current pulse 8/20 μ s exponential decay waveform according to IEC61000-4-5.

Electrical Characteristics (TA=25°C unless otherwise specified)

| Symbol | Parameter | Conditions | Min | Typ | Max | Unit |
|--------|------------------------------|--|------|-----|-----|---------------|
| VRWM | Reverse Working Peak Voltage | | | | 24 | V |
| VBR | Reverse Breakdown Voltage | $I_T = 1\text{mA}$ | 26.7 | 28 | 33 | V |
| IR | Reverse Leakage Current | $V_{RWM} = 2.4\text{V}$ | | | 1 | μA |
| VC | Clamping Voltage | $I_{PP} = 1\text{A} (8/20\mu\text{s})$ | | 35 | 40 | V |
| VC | Clamping Voltage | $I_{PP} = 3\text{A} (8/20\mu\text{s})$ | | 38 | 60 | V |
| Ipp | Peak Pulse Current | $t_p = 8/20\ \mu\text{s}$ | | | 3 | A |
| CJ | Capacitance | $V_R = 0\text{V}, f = 1\text{MHz}$ | | 20 | | pF |

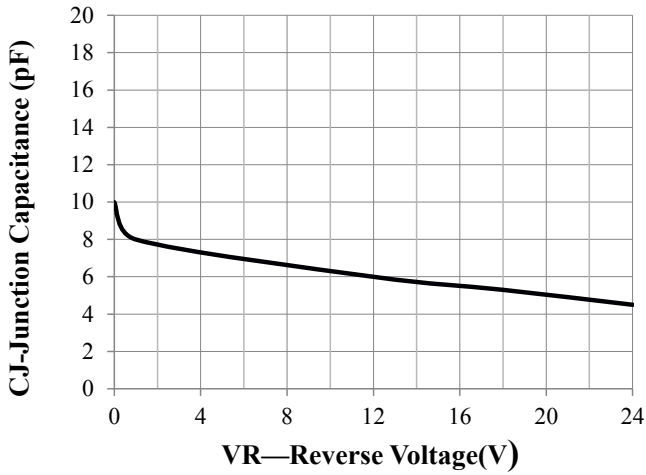
Electrical Parameters (TA = 25°C unless otherwise noted)

| Symbol | Parameter |
|-----------|-------------------------------------|
| V_C | Clamping Voltage @ I_{PP} |
| I_{PP} | Peak Pulse Current |
| V_{BR} | Breakdown Voltage @ I_T |
| I_T | Test Current |
| I_R | Reverse Leakage Current @ V_{RWM} |
| V_{RWM} | Reverse Standoff Voltage |

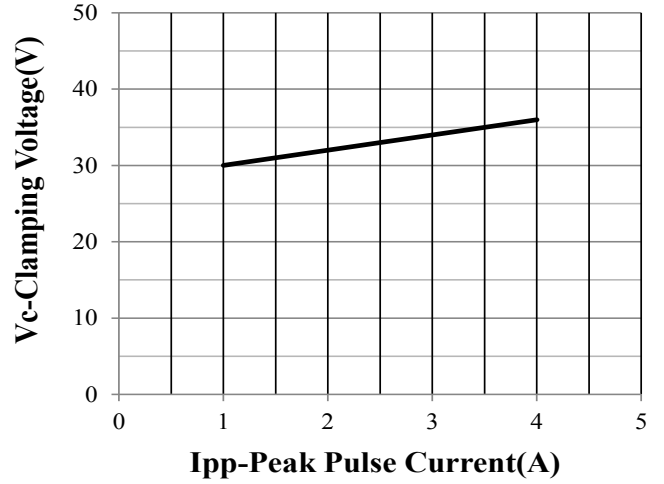


V-I characteristics for a Bi-directional TVS

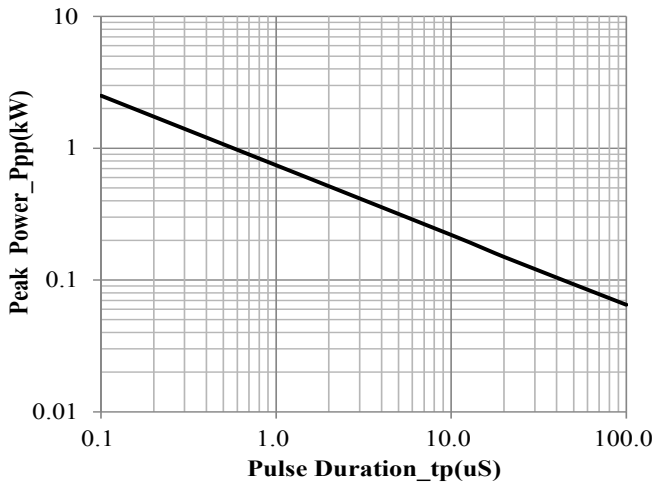
RATING AND CHARACTERISTIC CURVES



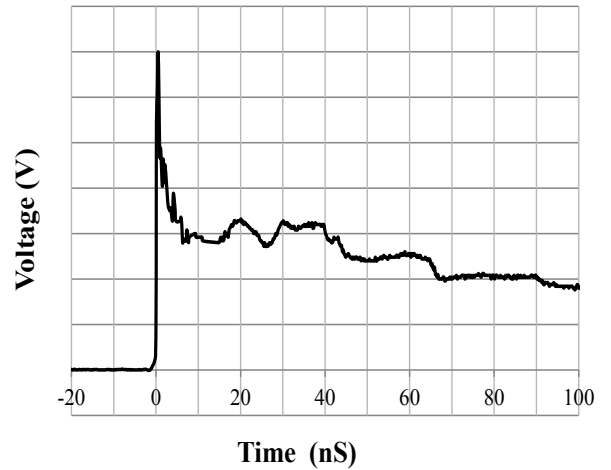
Junction Capacitance vs. Reverse Voltage



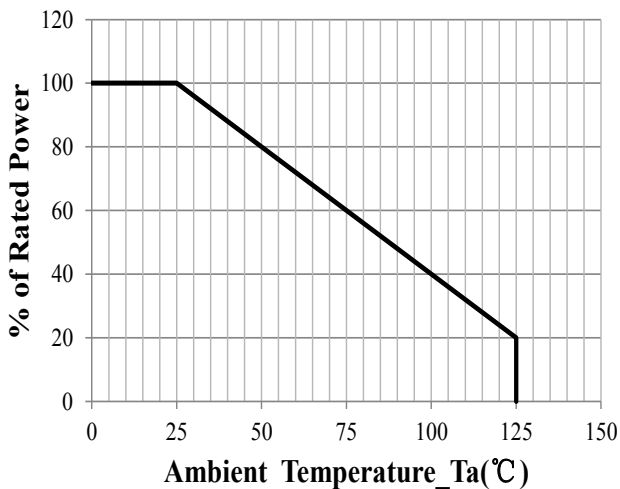
Clamping Voltage vs. Peak Pulse Current



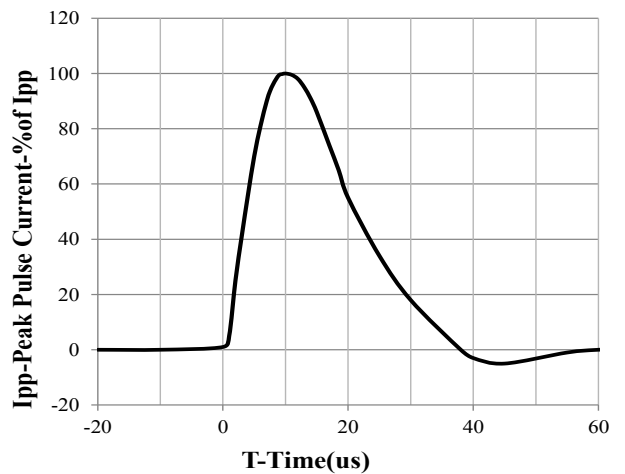
Peak Pulse Power vs. Pulse Time



IEC61000-4-2 Pulse Waveform



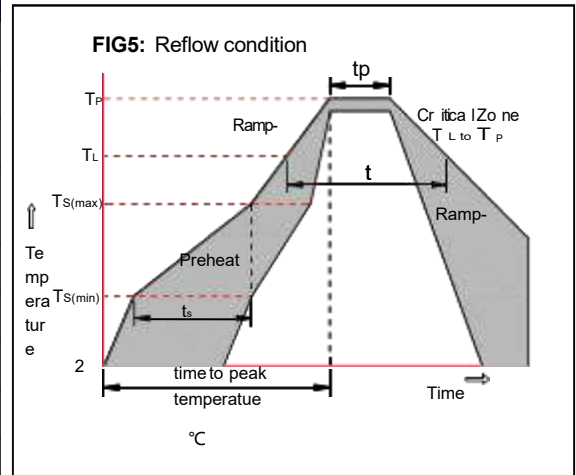
Power Derating Curve



8 X 20us Pulse Waveform

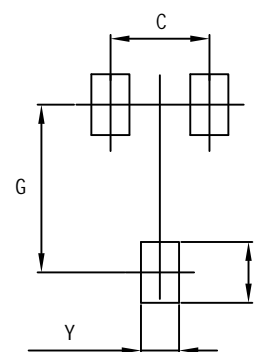
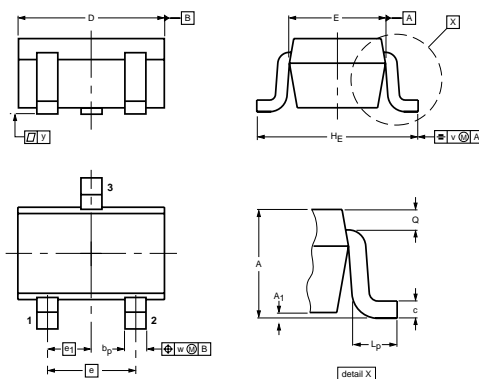
Soldering parameters

| Reflow Condition | | Pb-Free assembly (see as below) |
|---|-----------------------------------|------------------------------------|
| Pre Heat | -Temperature Min ($T_{s(min)}$) | +150 °C |
| | -Temperature Max($T_{s(max)}$) | +200 °C |
| | -Time (Min to Max) (ts) | 60-180 secs. |
| Average ramp up rate (Liquid us Temp (T_L) to peak) | | 3 °C/sec. Max |
| $T_{s(max)}$ to T_L - Ramp-up Rate | | 3 °C/sec. Max |
| Reflow | -Temperature(T_L)(Liquid us) | +217 °C |
| | -Temperature(t_L) | 60-150 secs. |
| Peak Temp (T_P) | | +260(+0/-5) °C |
| Time within 5 °C of actual Peak Temp (t_p) | | 30 secs. Max |
| Ramp-down Rate | | 6 °C/sec. Max |
| Time 25 °C to Peak Temp (T_P) | | 8 min. Max |
| Do not exceed | | +260 °C |



Package Dimensions & Suggested Pad Layout

SOT-323



| Dimensions | Value (in mm) |
|------------|---------------|
| C | 1.30 |
| G | 2.00 |
| X | 0.90 |
| Y | 0.65 |

DIMENSIONS (mm are the original dimensions)

| UNIT | A | A ₁ max | b _p | c | D | E | e | e ₁ | H _E | L _p | Q | v | w |
|------|------------|--------------------|----------------|--------------|------------|--------------|-----|----------------|----------------|----------------|--------------|-----|-----|
| mm | 1.1 0.8 | 0.1 | 0.4 0.3 | 0.25 0.10 | 2.2 1.8 | 1.35 1.15 | 1.3 | 0.65 | 2.2 2.0 | 0.45 0.15 | 0.23 0.13 | 0.2 | 0.2 |

Tape & reel specification

| Tape | | Symbol | Dimension (mm) |
|-------------------|-----------|--------|----------------|
| | | P0 | 4.00±0.20 |
| | | P1 | 4.00±0.20 |
| | | P2 | 2.00±0.20 |
| | | D0 | 1.55±0.20 |
| | | D1 | 1.00±0.20 |
| | | E | 1.55±0.25 |
| | | F | 3.60±0.20 |
| | | W | 8.00±0.20 |
| | | A0 | 2.50±0.20 |
| | | B0 | 2.60±0.20 |
| | | K0 | 1.40±0.20 |
| | | T | 0.20±0.20 |
| | | D2 | 177.0±5.0 |
| | | D3 | 55Min. |
| | | D4 | R24.6±2.0 |
| | | G | R82.0±2.0 |
| I | 13.0±2.0 | | |
| W1 | 10.20±3.0 | | |
| Quantity: 3000PCS | | | |

| 7" Reel | |
|---------|--|
| | |