



PRODUCT DATA SHEET



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Datasheet



Resources



Samples

Please note: Please check the JINGAO Semiconductor website to verify the updated device numbers. The most current and up-to-date ordering information can be found at www.jg-semi.cn. Please email any questions regarding the system integration to JINGAO_questions@jgsemi.com.

Features

- 40Watts peak pulse power ($t_p = 8/20\mu s$)
- Tiny SOT143 package
- Bidirectional configurations
- Solid-state silicon-avalanche technology
- Low clamping voltage
- Low leakage current
- Low capacitance ($C_j = 0.35pF$ typ I/O to I/O.)
- Protection one data/power line
- IEC 61000-4-2 $\pm 15kV$ contact $\pm 20kV$ air
- IEC 61000-4-4 (EFT) 40A (5/50ns)
- IEC 61000-4-5 (Lightning) 3.5A (8/20 μs)



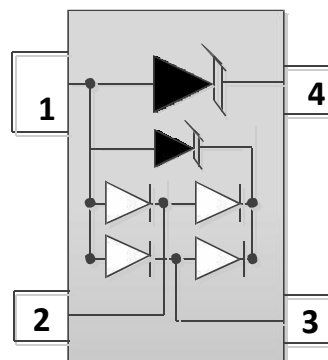
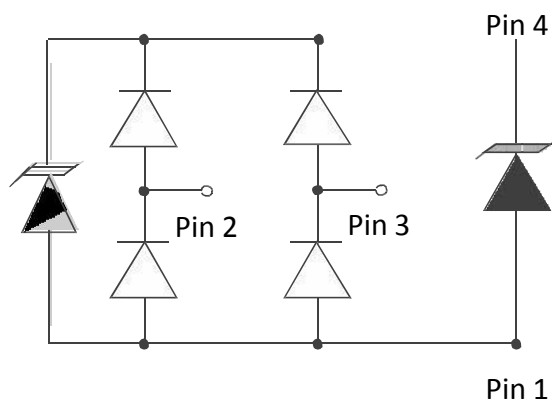
Applications

- USB2.0,
- Ethernet
- Notebooks, Desktops, and Servers
- Video Line Protection

Mechanical Data

- SOT143 package
- Molding compound flammability rating: UL 94V-0
- Packaging: Tape and Reel
- RoHS/WEEE Compliant

Schematic & PIN Configuration



Absolute Maximum Rating

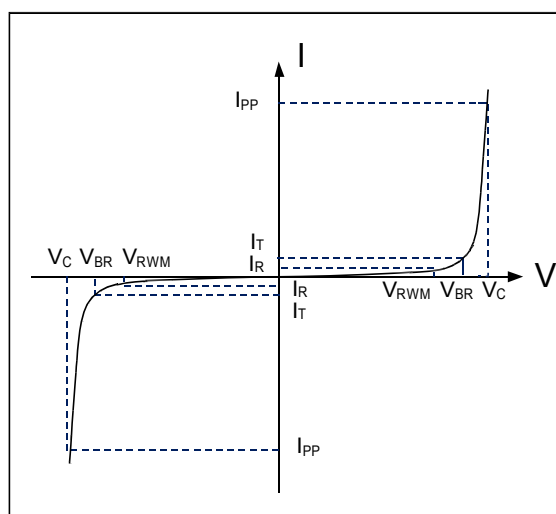
| Rating | Symbol | Value | Units |
|--|-----------|----------------|-------|
| Peak Pulse Power ($t_p = 8/20\mu s$) | P_{PP} | 40 | Watts |
| Peak Pulse Current ($t_p = 8/20\mu s$) (note1) | I_{pp} | 3.5 | A |
| ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact) | V_{ESD} | 20 15 | kV |
| Lead Soldering Temperature | T_L | 260(10seconds) | °C |
| Junction Temperature | T_J | -55 to + 125 | °C |
| Storage Temperature | T_{stg} | -55 to + 125 | °C |

Electrical Characteristics

| Parameter | Symbol | Conditions | Min | Typical | Max | Units |
|---------------------------|-----------|-----------------------------------|-----|---------|-----|-------|
| Reverse Stand-Off Voltage | V_{RWM} | | | | 5.0 | V |
| Reverse Breakdown Voltage | V_{BR} | $I_T = 1mA$ | 6.0 | 7.2 | | V |
| Reverse Leakage Current | I_R | $V_{RWM} = 5V, T = 25^\circ C$ | | 50 | 500 | nA |
| Clamping Voltage | V_C | $I_{PP} = 3.5A, t_p = 8/20\mu s$ | | 10 | | V |
| Junction Capacitance | C_j | $V_R = 0V, f = 1MHz$ IO to IO | | 0.35 | | pF |
| | | $V_R = 0V, f = 1MHz$ IO to GND | | 0.65 | | |

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

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



Note: 8/20μs pulse waveform.

Typical Characteristics

Figure 1: Peak Pulse Power vs. Pulse Time

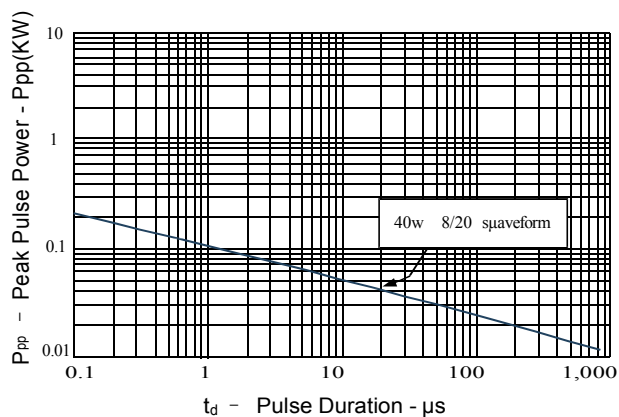


Figure 2: Power Derating Curve

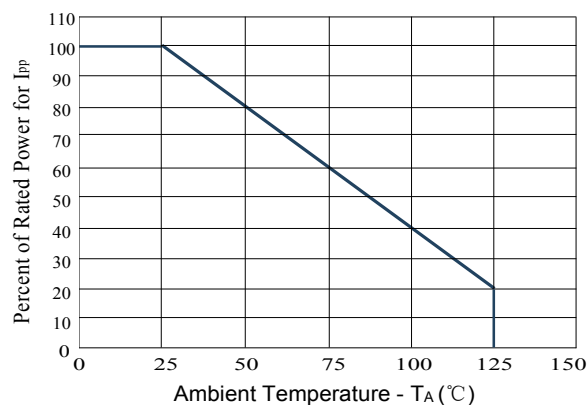


Figure3: Pulse Waveform

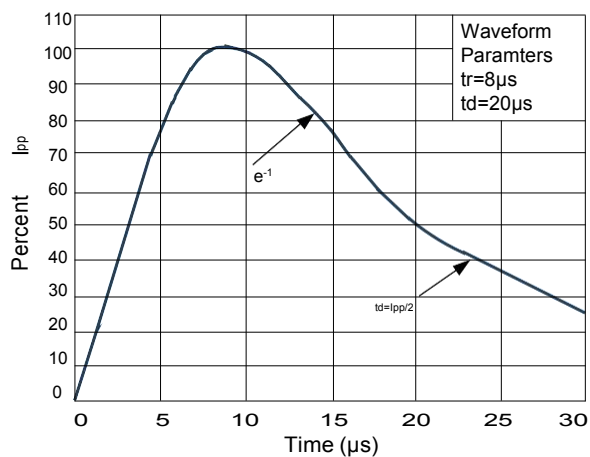
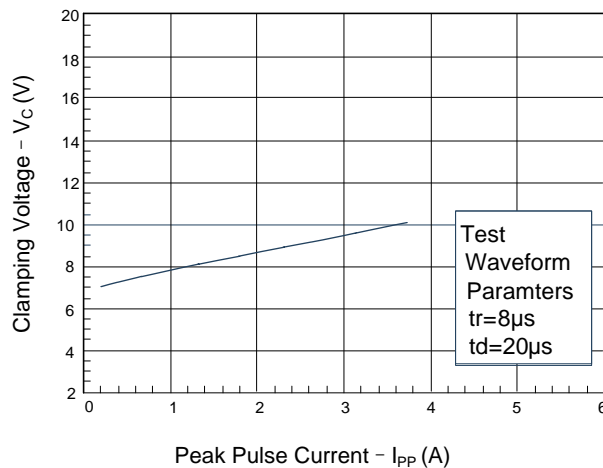
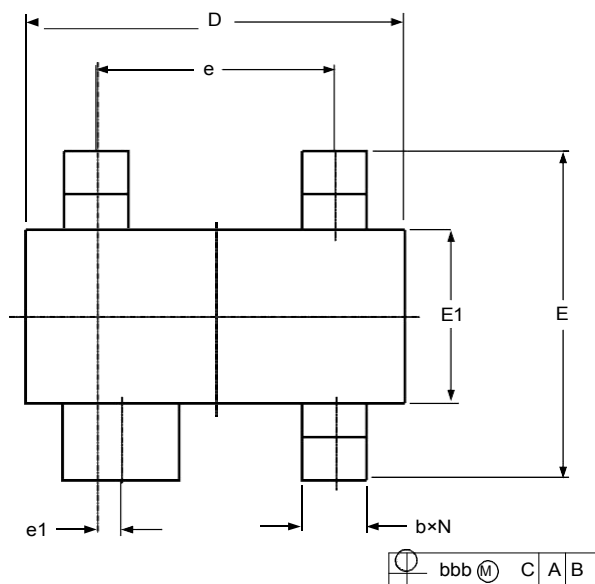


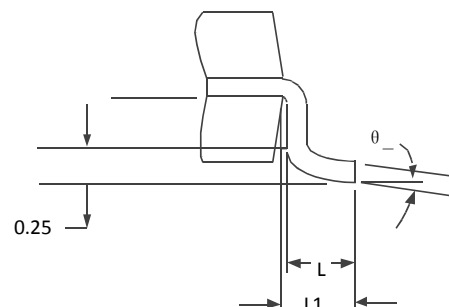
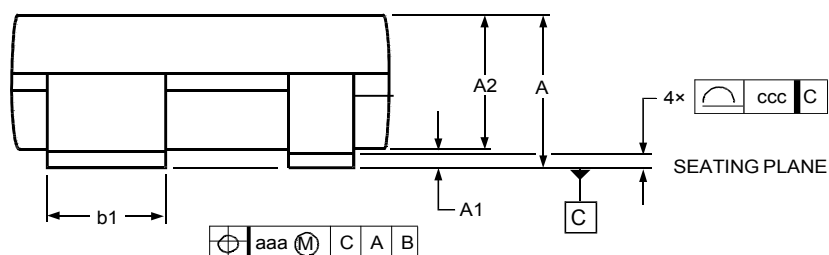
Figure 4: Clamping Voltage vs. Ipp



Outline Drawing – SOT143



| SYMBOL | DIMENSIONS | | | |
|--------|------------|-------|----------|-------|
| | MILLIMETER | | INCHES | |
| | MIN | MAX | MIN | MAX |
| A | 0.900 | 1.150 | 0.035 | 0.045 |
| A1 | 0.000 | 0.100 | 0.000 | 0.004 |
| A2 | 0.900 | 1.050 | 0.035 | 0.041 |
| b | 0.300 | 0.500 | 0.012 | 0.020 |
| b1 | 0.750 | 0.900 | 0.030 | 0.035 |
| D | 2.800 | 3.000 | 0.110 | 0.118 |
| e | 1.800 | 2.000 | 0.071 | 0.079 |
| e1 | 0.200TYP | | 0.008TYP | |
| E | 2.250 | 2.550 | 0.089 | 0.100 |
| E1 | 1.200 | 1.400 | 0.047 | 0.055 |
| θ | 0° | 8° | 0° | 8° |
| aaa | .006 | | 0.15 | |
| bbb | .008 | | 0.20 | |
| ccc | .004 | | 0.10 | |



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