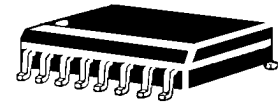


DESCRIPTION

This 16 pin 8-line Low Capacitance Unidirectional array is designed for use in applications where protection is required at the board level from voltage transients caused by electrostatic discharge (ESD) as defined in IEC 1000-4-2, electrical fast transients (EFT) per IEC 1000-4-4 and effects of secondary lighting.

These TRANSIENT VOLTAGE SUPPRESSOR (TVS) Diode Arrays have a peak power of 500 watts for an 8/20 μsec pulse and are designed to protect 3.0/3.3 volt components such as DRAM's, SRAM's, CMOS, HCMOS, HSIC, and low voltage interfaces up to 24 volts.

APPEARANCE



SO-16

IMPORTANT: For the most current data, consult MICROSEMI's website: <http://www.microsemi.com>

FEATURES

- Protects 3.0/3.3 up through 24 V Components
- Protects 8 lines Unidirectional
- Provides electrically isolated protection
- SO-16 Packaging
- RoHS Compliant devices available by adding "e3" suffix

APPLICATIONS / BENEFITS

- Low Capacitance Unidirectional TVS Array (8)
- Protects: DRAM's, SRAM's, CMOS, HCMOS, HSIC
- RS-232, RS-422, RS-423, RS-449 data rates: 10 Mbs
- WAN Equipment: Multiplexers, Routers, ISP, CSU/DSU
- Multi-mode Transceiver Protection

MAXIMUM RATINGS

- Operating Temperatures: -55°C to +150°C
- Storage Temperature: -55°C to +150°C
- Peak Pulse Power: 500 Watts (8/20 μsec, Figure 1)
- Pulse Repetition Rate: <.01%

MECHANICAL AND PACKAGING

- Molded SO-16 Surface Mount
- Finish: Tin-Lead or RoHS Compliant matte-Tin plating solderable per MIL-STD-750, method 2026
- Weight: 0.128 grams (approximate)
- Body Marked with Logo, and device number
- Pin #1 defined by DOT on top of package
- Pins#1 thru 8 are the anodes of each TVS (biased negative with respect to cathodes pins#9 thru 16)
- Encapsulation meets UL 94V-0
- Tape & Reel EIA Standard 481-1-B
- Carrier tubes 48 pieces per (STANDARD)
- 13 inch reel 2,500 pieces (OPTIONAL)

ELECTRICAL CHARACTERISTICS @ 25°C Unless otherwise specified

| PART NUMBER | DEVICE MARKING | STANDOFF VOLTAGE | BREAKDOWN VOLTAGE | CLAMPING VOLTAGE | CLAMPING VOLTAGE | REVERSE CURRENT | CAPACITANCE | TEMPERATURE |
|-------------|----------------|------------------|-------------------|------------------|------------------|-----------------|-------------|-------------|
| | | V_{WM} | V_{BR} | V_C | V_C | I_D | (f=1 MHz) | COEFFICIENT |
| | | VOLTS | VOLTS | VOLTS | VOLTS | @ V_{WM} | @0V | OF V_{BR} |
| | | MAX | MIN | MAX | MAX | μA | pF | αV(BR) |
| | | | | | | | TYP | MAX |
| SM16LC03 | MCA | 3.3 | 4 | 7.0 | 9.0 | 200 | 25 | -5 |
| SM16LC05 | MCB | 5.0 | 6 | 9.8 | 11 | 20 | 25 | 1 |
| SM16LC12 | MCC | 12 | 13.3 | 19 | 24 | 1 | 25 | 8 |
| SM16LC15 | MCD | 15 | 16.7 | 24 | 30 | 1 | 25 | 11 |
| SM16LC24 | MCE | 24 | 26.7 | 43 | 55 | 1 | 25 | 28 |

NOTE: Transient Voltage Suppression (TVS) product is normally selected based on its standoff voltage V_{WM} . Product selected voltage should be equal to or greater than the continuous peak operating voltage of the circuit to be protected.

Application: The SM16LCXX product is designed for unidirectional transient voltage suppression protection of components at the board level. It is an ideal product to be used for protection of I/O Transceivers. See separate data sheet for bidirectional TVS in the SM16LCXXC series (with C suffix).

GRAPHS

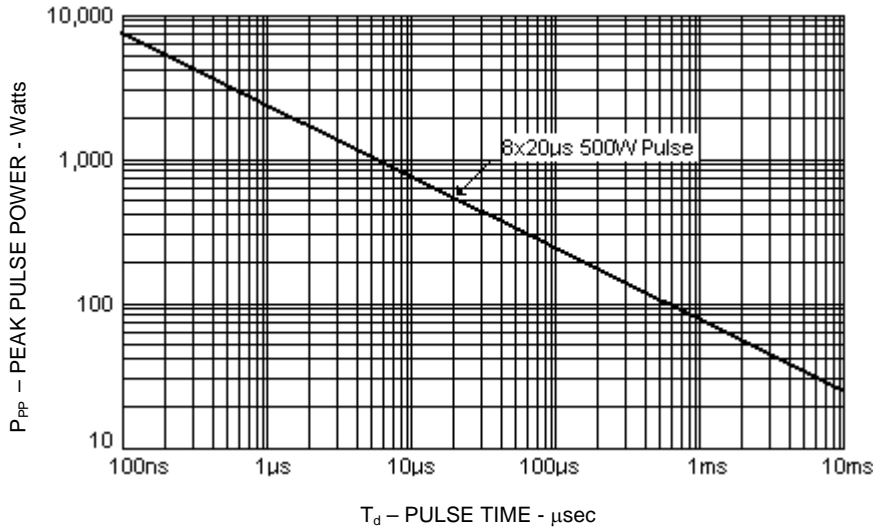


FIGURE 1
Peak Pulse Power vs. Pulse Time

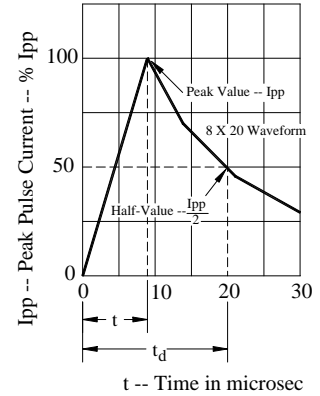
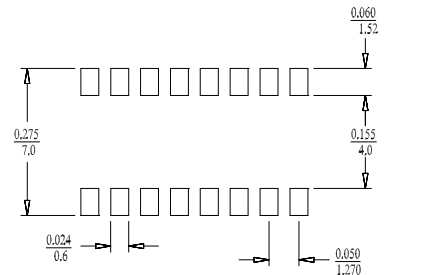
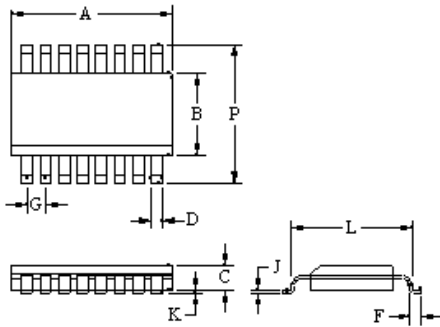


FIGURE 2
Pulse Wave Form

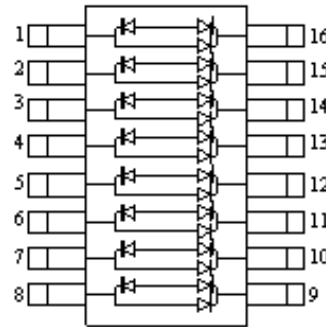
DIMENSIONS AND SCHEMATIC



Mounting Pad

INCHES
MM

| DIM | INCHES | | MILLIMETERS | |
|-----|-----------|-------|-------------|-------|
| | MIN | MAX | MIN | MAX |
| A | 0.358 | 0.398 | 9.09 | 10.10 |
| B | 0.150 | 0.158 | 3.81 | 4.01 |
| C | 0.053 | 0.069 | 1.35 | 1.75 |
| D | 0.011 | 0.021 | 0.28 | 0.53 |
| F | 0.016 | 0.050 | 0.41 | 1.27 |
| G | 0.050 BSC | | 1.27 BSC | |
| J | 0.006 | 0.010 | 0.15 | 0.25 |
| K | 0.004 | 0.008 | 0.10 | 0.20 |
| L | 0.189 | 0.206 | 4.80 | 5.23 |
| P | 0.228 | 0.244 | 5.79 | 6.19 |



Circuit Diagram

NOTE: Pins#1 thru 8 are the anodes of each TVS (biased negative with respect to cathodes pins#9 thru 16 for normal operation)