SM16LC03 thru SM16LC24, e3

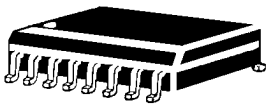
TVS Array™ Series

Microsemi
SCOTTSDALE DIVISION

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^{0}C to +150^{0}C
- Storage Temperature: -55^{0}C to +150^{0}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^{0}C Unless otherwise specified

PART NUMBER	DEVICE MARKING	STANDOFF VOLTAGE V_{WM} VOLTS	BREAKDOWN VOLTAGE V_{BR} @1 mA VOLTS	CLAMPING VOLTAGE V_C @ 1 Amp (FIGURE 2) VOLTS	CLAMPING VOLTAGE V_C @ 5 Amp (FIGURE 2) VOLTS	REVERSE CURRENT I_D @ V_{WM} μA	CAPACITANCE (f=1 MHz) @0V C pF	TEMPERATURE COEFFICIENT OF V_{BR} $\alpha_{V(BR)}$ mV/°C
		MAX	MIN	MAX	MAX	MAX	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

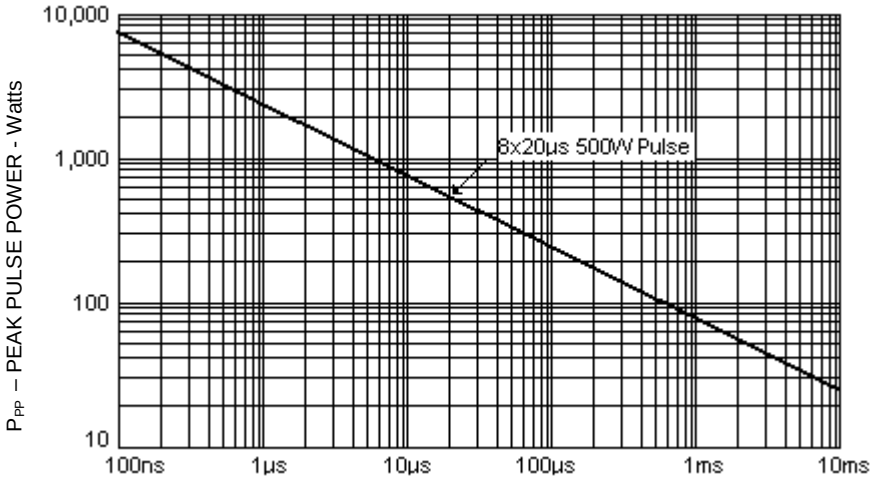


FIGURE 1
Peak Pulse Power vs. Pulse Time

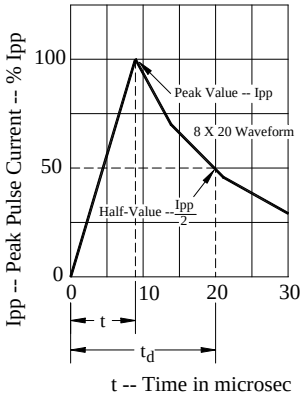
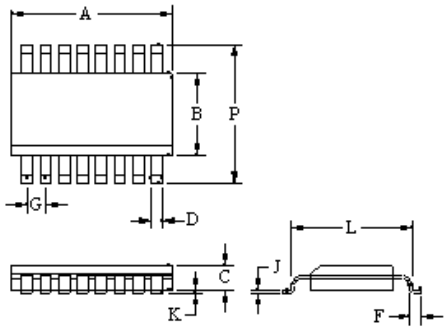
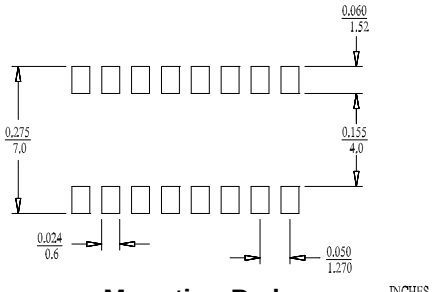


FIGURE 2
Pulse Wave Form

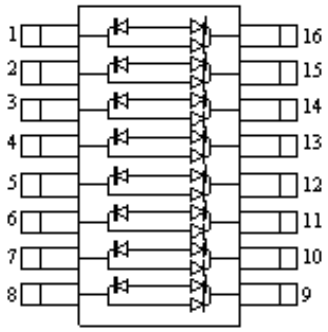
DIMENSIONS AND SCHEMATIC





Mounting Pad

	INCHES		MILLIMETERS	
DIM	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)