Microsemi
SCOTTSDALE DIVISION

Bidirectional TVS Array ™

Preliminary

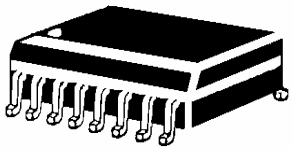
DESCRIPTION

This 16 pin one-line pair, bi-directional, LOW CAPACITANCE array is designed for use in applications where protection is required at the board level. It provides protection from voltage transients caused by electrostatic discharge (ESD) as defined in IEC 61000-4-2, electrical fast transients (EFT) per IEC 61000-4-4 and effects of secondary lightning as stated by IEC 61000-4-5.

These TRANSIENT VOLTAGE SUPPRESSOR (TVS) arrays have a peak pulse power rating of 1500 watts for a 10/1000 µsec pulse and are designed to be used for secondary surge protection on high-speed telecommunications lines. This device can be used in either common or differential mode applications. It is typically used between Tip and Ring. Applications include T1/E1 and DSL interfaces in base stations, routers, and long-haul transient immunity requirement per Bellcore 1089, FCC Part 68 (type A and B surges and IEC 61000-4-5

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

TVSARRAY™



FEATURES

- 1500 watts peak pulse power
- Protects one-line pair
- Provides electrically isolated protection
- SO-16W package
- UL 94V-0 flamability classification
- ***LOW CAPACITANCE 90 pF per line pair***

APPLICATIONS / BENEFITS

- T1/E1 line cards
- Base stations
- WAN interfaces
- XDSL interfaces
- CSU/DSU equipment

MAXIMUM RATINGS

- Operating temperature: -55°C to +150°C
- Storage temperature: -55°C to +150°C
- Peak pulse power: 1500 watts (10/1000 µs, Fig 1)
- Pulse repetition rate: < .01%
- Thermal resistance:< 30°C/watt (junction-to-case)
- Lead soldering temperature: 260°C, 10s maximum

MECHANICAL AND PACKAGING

- Molded SO-16W Surface Mount
- Weight 0.25 grams (approximate)
- Marking: Logo, device marking code, date code
- Pin #1 defined by dot on top of package
- Tape & Reel per EIA Standard 481
- 13 inch reel; 2,500 pieces (OPTIONAL)
- Carrier tubes; 45 pcs (STANDARD)

ELECTRICAL CHARACTERISTICS PER LINE PAIR @ 25°C Unless otherwise specified

PART NUMBER	DEVICE MARKING	STAND OFF VOLTAGE V_{WM} VOLTS	BREAKDOWN VOLTAGE V_{BR} @1 mA VOLTS	CLAMPING VOLTAGE V_C @ 100 Amp (Figure 2) VOLTS	CLAMPING VOLTAGE V_C @ 200 Amp (Figure 3) VOLTS	STANDBY CURRENT I_D @ V_{WM} µA	CAPACITANCE (f=1 MHz) C @0V pF
		MAX	MIN	MAX	MAX	MAX	TYP
LCV01-6	LCV01-6	6.0	8.0	15	21	25	90

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

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LCV01-6

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SYMBOLS & DEFINITIONS

Symbol	Definition
V_{WM}	Stand Off Voltage: Maximum dc voltage that can be applied over the operating temperature range. Vwm must be selected to be equal or be greater than the operating voltage of the line to be protected
V_{BR}	Minimum Breakdown Voltage: The minimum voltage the device will exhibit at a specified current
V_C	Clamping Voltage: Maximum clamping voltage across the TVS device when subjected to a given current at a pulse time, t_d.
I_D	Standby Current: Leakage current at $V_{WM.}$
C	Capacitance: Capacitance of the TVS as defined @ 0 volts at a frequency of 1 MHz and stated in picofarads.

OUTLINE AND CIRCUIT

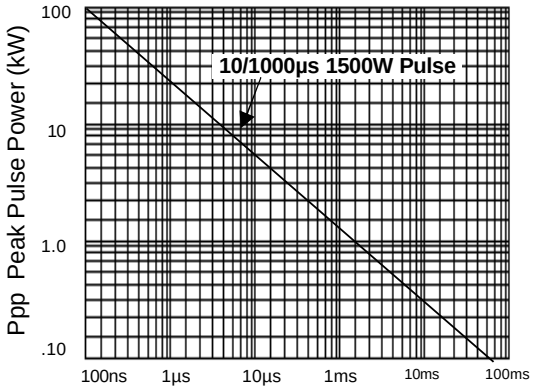


Figure 1
Peak Pulse Power Vs Pulse Time t = sec

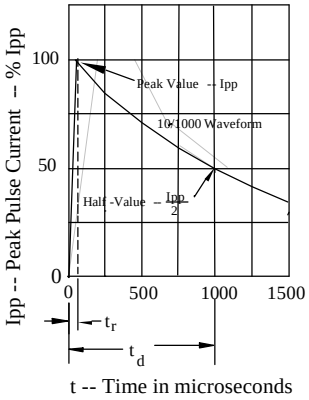


Figure 2
Pulse Wave Form

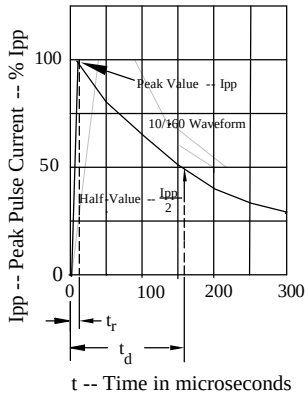
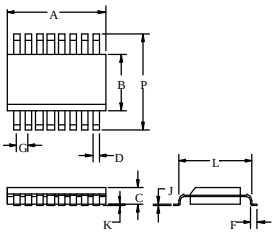
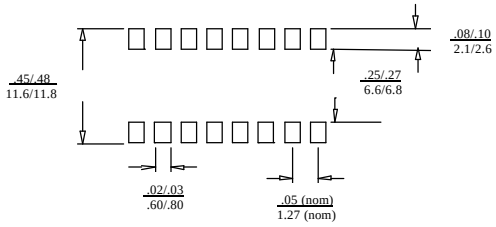


Figure 3
Pulse Wave Form

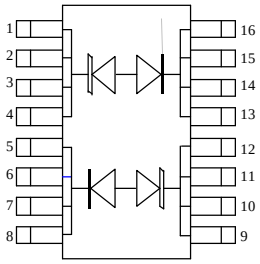
DIMENSIONS AND SCHEMATIC



	INCHES		MILLIMETERS	
DIM	MIN	MAX	MIN	MAX
A	0.397	0.413	10.08	10.49
B	0.291	0.299	7.39	7.60
C	0.081	0.104	2.06	2.64
D	0.013	0.020	0.33	0.51
F	0.016	0.050	0.41	1.27
G	0.050 BSC		1.27 BSC	
J	0.009	0.012	0.23	0.30
K	0.001	0.004	0.03	0.10
L	0.344	0.387	7.47	9.79
P	0.394	0.419	10.01	10.64



PAD LAYOUT



SCHEMATIC

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