

**DESCRIPTION**

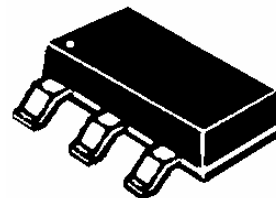
This 6 pin 4-line bidirectional or 5-line unidirectional array is designed for use in applications where protection is required at the board level from voltage transients caused by electrostatic discharge (ESD) as defined by IEC 61000-4-2, electrical fast transients (EFT) per IEC 61000-4-4 and other induced voltage surges that can damage sensitive circuitry.

These arrays are used to protect 4 discrete lines utilizing pins 1,3,4,6 with a common pin 5 configuration to ground for bidirectional protection and pin 2 is not connected. It may also be used to protect 5 lines utilizing pins 1,3,4,5,6 with a common pin 2 connection to ground.

These Transient Voltage Suppressor (TVS) diode arrays protect 5 volt components such as DRAM's SRAM's CMOS, HCMOS, HSIC, and low voltage interfaces up to 24 volts. Because of the physical size, weight and protection capabilities, this product is ideal for use in but not limited to miniaturized electronics equipment such as hand held instruments, computers, computer peripherals and cell phones.

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

**APPEARANCE**



**TVS array**

**FEATURES**

- Protects 5 volt up through 24 volt components
- Protects 4 bidirectional lines or 5 unidirectional lines as determined by connections (see 2<sup>nd</sup> page)
- Provides electrically isolated protection
- SOT 23-6L Packaging

**MAXIMUM RATINGS**

- Operating Temperature: -55°C to +150°C
- Storage Temperature: -55°C to +150°C
- Peak Pulse power 200 watts (8/20 μs Figure 1)
- SOT 23-6L Packaging

**APPLICATIONS / BENEFITS**

- EIA-RS232 data rates 19.6kbs
- EIA-RS422 data rates 10Mbps
- EIA-RS423 data rates 100kbs
- Protection of data lines to:  
IEC61000-4-2 (ESD)  
IEC61000-4-4 (EFT)

**MECHANICAL AND PACKAGING**

- Molded SOT23-6L Surface Mount
- Weight .014 grams (approximate)
- Body Marked as shown below for Device Marking
- Pin one defined by DOT on top of package
- Tape & Reel per EIA Standard 481
- 3,000 pieces per 7 inch

**ELECTRICAL CHARACTERISTICS BIDIRECTIONAL (See Notes for Unidirectional\*\*)**

PART NUMBER	DEVICE MARKING	STAND OFF VOLTAGE ** V <sub>WM</sub>	BREAKDOWN VOLTAGE ** V <sub>BR</sub> @1 mA	CLAMPING VOLTAGE V <sub>C</sub> @ 1 Amp (FIGURE 2)	CLAMPING VOLTAGE V <sub>C</sub> @ 5 Amp (FIGURE 2)	STANDBY CURRENT I <sub>b</sub> @ V <sub>WM</sub>	CAPACITANCE (f=1 MHz) ** @0V C	TEMPERATURE COEFFICIENT OF V <sub>BR</sub> α <sub>VBR</sub>
		VOLTS MAX	VOLTS MIN	VOLTS MAX	VOLTS MAX	μA MAX	pF TYP	mV/°C MAX
SMS05C	S5C	5.0	6.0	11	14.5	10	75	3
SMS12C	S12C	12.0	13.3	21	27	1	35	10
SMS15C	S15C	15.0	16.7	26	33	1	30	13
SMS24C	S24C	24.0	26.7	45	56*	1	20	30

\* CLAMPING VOLTAGE @3.6 Amps for both bidirectional and unidirectional

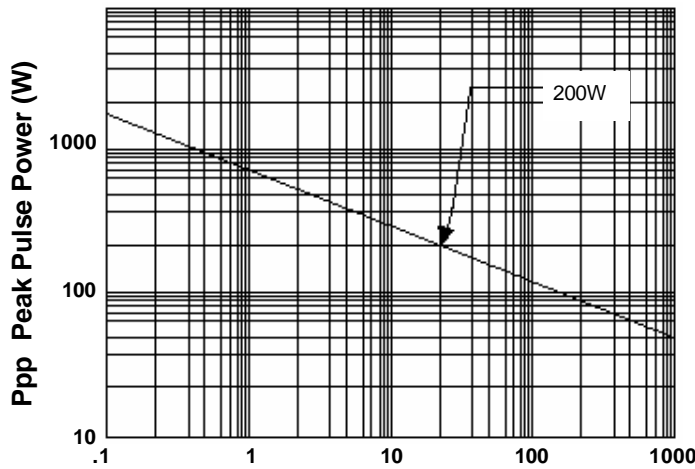
\*\* Standoff and Breakdown Voltages for Unidirectional will be 0.6 V lower and capacitance will be twice that shown in the table above. All other maximum characteristic values for unidirectional are the same as shown above for bidirectional.

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

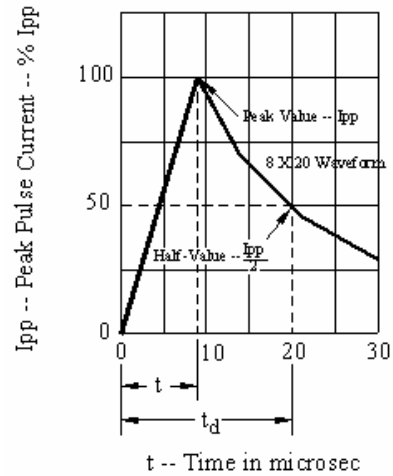
**SYMBOLS & DEFINITIONS**

Symbol	Definition
$V_{WM}$	Rated stand off voltage: Maximum dc voltage that can be applied over the operating temperature range. $V_{wm}$ 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 of 20 $\mu s$ .
$I_D$	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 Pico Farads.

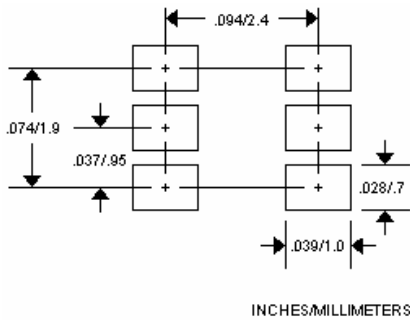
**OUTLINE AND CIRCUIT**



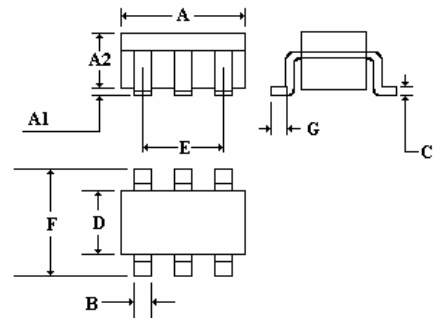
**FIGURE 1**  
Peak Pulse Power Vs Pulse Time  $t = \mu sec$



**FIGURE 2**  
Pulse Wave Form



INCHES/MILLIMETERS



DIM	DIMENSIONS MILLIMETERS			DIMENSIONS INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	2.70	2.90	3.10	.106	.114	.127
A1	0.00		0.10	.000		.004
A2	1.00	1.10	1.30	.039	.043	.051
B	0.35	0.40	0.50	.014	.016	.020
C	0.10	0.15	0.25	.004	.006	.010
D	1.50	1.60	1.80	.059	.063	.071
E	1.70	1.90	2.10	.067	.075	.083
F	2.60	2.80	3.00	.102	.110	.118
G	0.20			.008		

