



8700 E. Thomas Road  
 Scottsdale, AZ 85251  
 Tel: (480) 941-6300  
 Fax: (480) 947-1503



**DESCRIPTION (500 watt)**

This 3 pin Transient Voltage Suppressor offers 2 unidirectional or 1 bidirectional protection at the board level from voltage transients caused by electrostatic discharge (ESD) as defined by IEC 1000-4-2, electrical fast transients (EFT) per IEC 1000-4-4.

**Unidirectional** protection, can be accomplished by connecting the Input/Output lines to pins 1 and 2 and pin 3 to common or ground. In a **bidirectional** configuration pin 1 or pin 2 is connected to the Input/Output line while the opposite pin is connected to common or ground. Pin 3 is not connected. The SM03 thru SM36 product provides board level protection from static electricity and other induced voltage surges that can damage sensitive circuitry.

These TRANSIENT VOLTAGE SUPPRESSOR (TVS) Diode Arrays protect 3.0/3.3 Volt components such as DRAM's, SRAM's, CMOS, HCMOS, HSIC, and low voltage interfaces up to 36 Volts. Because of the physical size, weight and protection capabilities, this product is ideal for use in but not limited to miniaturized electronic equipment such as hand-held instruments, computers, computer peripherals and cell phones.

**FEATURES**

- Protects 3.0/3.3 up through 36V Components
- Protects 2 Unidirectional or 1 Bidirectional line
- Provides electrically isolated protection
- SOT-23 Packaging

**PACKAGING**

- Tape & Reel EIA Standard 481
- 7 inch reel 5,000 pieces
- 13 inch reel 10,000 pieces

**MAXIMUM RATINGS**

- Operating Temperatures: -55°C to +150°C
- Storage Temperature: -55°C to +150°C
- SM03 thru SM36 have a Peak Pulse Power: 500 Watts (8/20 μsec, Figure 1)
- Pulse Repetition Rate: <.01%

**MECHANICAL**

- Molded SOT-23 Surface Mount
- Weight: .014 grams (approximate)
- Body Marked with device number

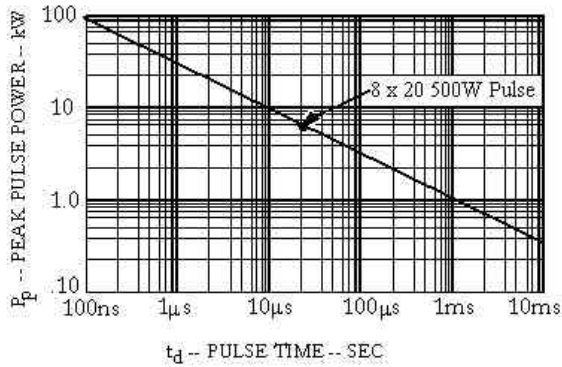
**ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless otherwise specified**

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)	LEAKAGE CURRENT I <sub>0</sub> @ V <sub>WM</sub>	CAPACITANCE @0V, 1 MHz C Pin 1-3 or 2-3	CAPACITANCE @0V, 1 MHz C Pin 1-2
		VOLTS	VOLTS	VOLTS	VOLTS	μA	pF	pF
		MAX	MIN	MAX	MAX	MAX	MAX	MAX
SM03	M03	3.3	4	7	9	200	800	400
SM05	M05	5.0	6.0	9.8	11	100	600	300
SM12	M12	12.0	13.3	19	24	1	185	93
SM15	M15	15.0	16.7	24	30	1	140	70
SM24	M24	24.0	26.7	43	55	1	88	44
SM36	M36	36.0	40.0	60	75	1	88	39

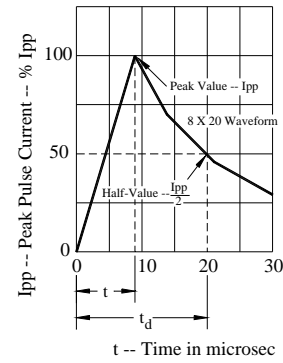
**NOTE:** Transient Voltage Suppression (TVS) product is normally selected based on its stand off Voltage V<sub>WM</sub>. Product selected voltage should be equal to or greater than the continuous peak operating voltage of the circuit to be protected.

**NOTE:** Transient Voltage Suppression (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.

### WAVE FORMS

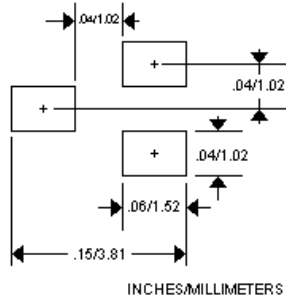


**FIGURE 1**  
Peak Pulse Power Vs Pulse Time

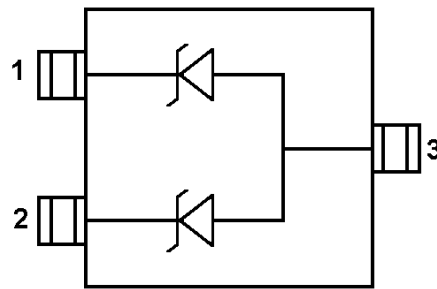


**FIGURE 2**  
Pulse Wave Form

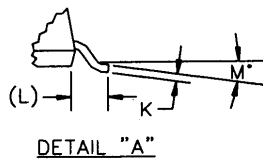
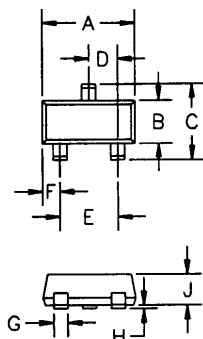
### MOUNTING PAD SOT23



### CIRCUIT DIAGRAM



### PACKAGE OUTLINE



DIM*	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.110	.119	2.8	3.04	—
B	.047	.055	1.20	1.40	—
C	.083	.104	2.10	2.64	—
D	.035	.040	0.88	1.02	—
E	.070	.081	1.78	2.05	—
F	.017	.024	.44	.60	—
G	.014	.020	.37	.51	—
H	.0005	.004	.013	0.10	—
J	.034	.040	.87	1.02	—
K	.003	.007	.085	.180	—
L	—	.022	—	0.55	REF
M	0	8°	0	8°	—