Microsemi
SCOTTSDALE DIVISION

SL03 thru SL24

Unidirectional TVSarray ™

PRODUCT PREVIEW

DESCRIPTION

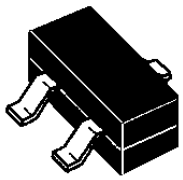
DESCRIPTION (300 watt)

This 3 pin ***ULTRA LOW CAPACITANCE*** TRANSIENT VOLTAGE SUPPRESSOR 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.

This product provides **unidirectional** protection for 1 line by connecting the positive Input/Output line to pin 1, pin 2 to common or ground and pin 3 (is not connected). The SL03 thru SL24 product provides board level protection from static electricity and other induced-voltage surges that can damage sensitive circuitry. These devices are not intended for ESD transient protection where pin 1 is driven negative relative to pin 2.

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 24 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.

TVSarray™ SERIES



APPLICATIONS

- EIA-RS232 data rate 19.6kbs
- EIA-RS422 data rate 10Mbs
- EIA-RS423 data rate 100kbs

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

FEATURES

- Protects 3.0/3.3 up through 24V components
- Protects 1 undirectional line
- Provides electrically isolated protection

PACKAGING

- Tape & Reel per EIA Standard 481
- 7 inch reel 3,000 pieces (STANDARD)

MAXIMUM RATINGS

- Operating Temperature: -55°C to +150°C
- Storage Temperature: -55°C to +150°C
- Peak Pulse power 300 watts (8/20 µs Figure 1)
- Pulse Repetition Rate: < .01%

MECHANICAL

- Molded SOT-23 Surface Mount
- Weight 0.014 grams (approximate)
- Body marked with device number

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless otherwise specified

PART NUMBER	DEVICE MARKING	STAND OFF VOLTAGE V_{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	STANDBY CURRENT I_D @ V_{WM} µA	CAPACITANCE (f=1 MHz) @0V C pF	TEMPERATURE COEFFICIENT OF V_{BR} á$_{VBR}$ MV/°C
		MAX	MIN	MAX	MAX	MAX	TYP	MAX
SL03	L03	3.3	4	8	11	200	3	-5
SL05	L05	5.0	6.0	10.8	13	20	3	3
SL12	L12	12.0	13.3	19	26	1	3	10
SL15	L15	15.0	16.7	25	32	1	3	13
SL24	L24	24.0	26.7	44	57	1	3	30

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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SYMBOLS & DEFINITIONS

Symbol	DEFINITION
V_{WM}	Rated 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 of 20 µs.
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.

GRAPHS

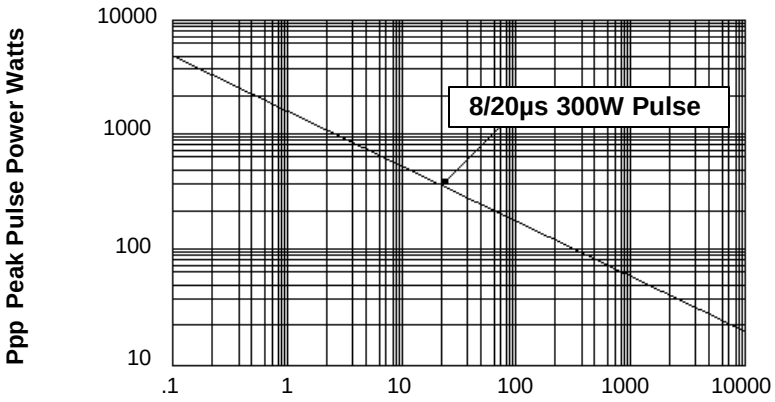


FIGURE 1
Peak Pulse Power Vs Pulse Time t=µsec

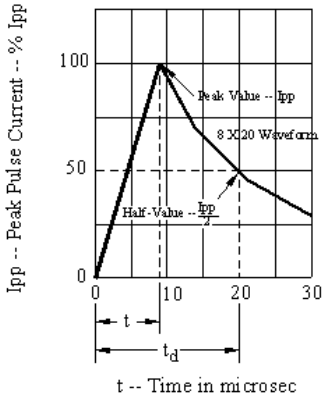
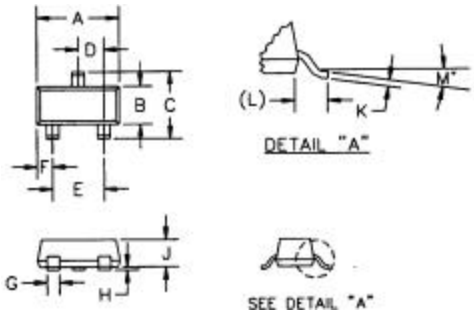


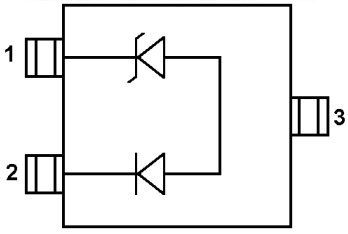
FIGURE 2
Pulse Wave Form

PACKAGING AND SCHEMATIC

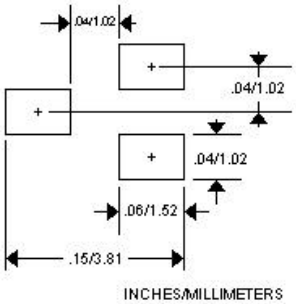


DIM	INCHES MIN	INCHES MAX	MM MIN	MM MAX	NOTE
A	.110	.119	2.8	3.04	–
B	.047	.055	1.20	1.40	–
C	.083	.104	2.10	2.64	–
D	.035	.040	0.88	1.02	–
E	.070	.081	1.78	2.05	–
F	.017	.024	.44	.60	–
G	.014	.020	.37	.51	–
H	.0005	.004	013	0.10	–
J	.034	.040	.87	1.02	–
K	.003	.007	.085	.180	–
L	–	.022	–	0.55	REF
M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

DIMENSIONS [1]



SCHEMATIC



SL05e3/TR7 (#312161)

Low Capacitance TVS Array

Division Microsemi Commercial Business Unit