

**BIDIRECTIONAL TVSarray™**  
**PRODUCT PREVIEW**

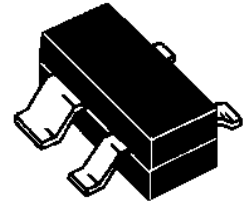
**DESCRIPTION**

Microsemi's proprietary process provides low standoff voltages and the lowest standby current in the industry of 0.1µA. This 4-pin bidirectional 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 effects of secondary lighting.

This product is designed to provide protection in the bidirectional mode for 1 line by connecting the Input/Output line to pins 2 and 3 and pins 1 and 4 to ground. For differential protection pins 1 and 4 can be connected to a second line. The SLVE2.8K 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 2.8 V volt components such as DRAM's SRAM's CMOS, HCMOS, HSIC, and low voltage interfaces. Because of the physical size, weight and protection capabilities, this product is ideal for use in but not limited to miniaturize electronic equipment such as hand-held instruments, computers, computer peripherals and cell phones and PDA's.

**TVSarray™ SERIES**



**APPLICATIONS**

- EIA-RS232 data rates  
19.6kbs
- EIA-RS422 data rates  
10Mbps
- EIA-RS423 data rates  
100kbs
- 200 MHz maximum

**FEATURES**

- Protects 2.8 V low voltage components
- Protects 1 bidirectional line to ground or 1 differential line pair
- Bidirectional single line capacitance 50 pF
- **LOW LEAKAGE 0.1 µA**

**PACKAGING**

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

**MAXIMUM RATINGS**

- Operating Temperature: -55°C to +150°C
- Storage Temperature: -55°C to +150°C
- **Peak Pulse Power 400 watts**  
( 24 Amps at 8/20 µs – see FIGURES 1 and 2)

**MECHANICAL**

- Molded SOT-143 Surface Mount
- Weight .014 grams (approximate)
- Body Marked with device number

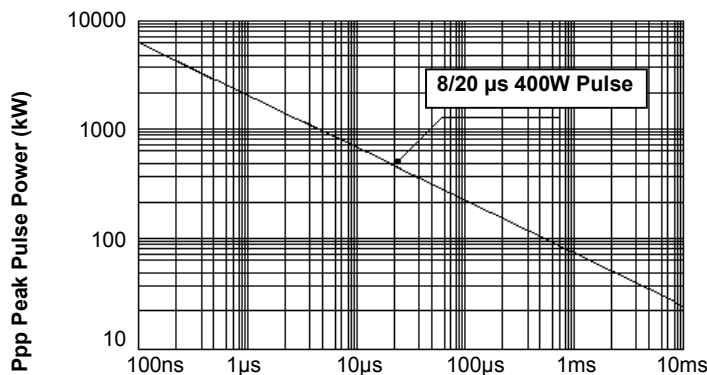
**ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless otherwise specified**

PART NUMBER	DEVICE MARKING	REVERSE STAND-OFF VOLTAGE $V_{RWM}$	SNAP-BACK VOLTAGE $V_{SB}$ $I_{SB} = 50 \text{ mA}$	PUNCH-THRU VOLTAGE $V_{PT}$ @ 2 µA	CLAMPING VOLTAGE $V_C$ @ $I_{PP} = 1 \text{ Amp}$	CLAMPING VOLTAGE $V_C$ @ $I_{PP} = 5 \text{ Amp}$	STANDBY (LEAKAGE) CURRENT $I_b$ @ $V_{RWM} = 2.8\text{V}$ $T = 25^\circ\text{C}$	CAPACITANCE (f=1 MHz) @ 0V
		VOLTS	VOLTS	VOLTS	VOLTS	VOLTS	µA	pF
SLVE2.8K	E2.8	MAX	MIN	MIN	MAX	MAX	MAX	MAX
		2.8	2.8	3.0	4.1	5.3	0.1	100

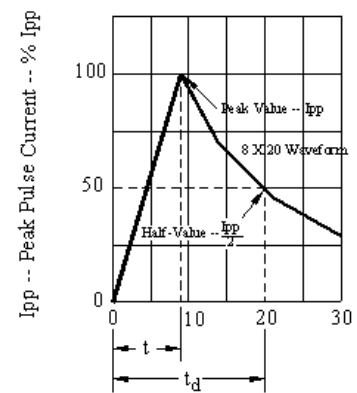
**SYMBOLS & DEFINITIONS**

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.
$V_{PT}$	Punch-Thru Voltage: The minimum voltage the device will exhibit at a specified current.
$V_{SB}$	Snap-Back Voltage: The minimum snap back voltage the device will exhibit at a specific 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.

**GRAPHS**

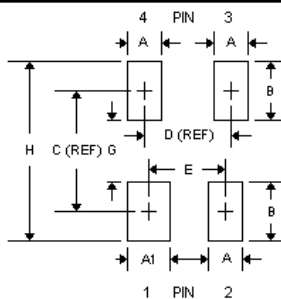


**FIGURE 1**  
Peak Pulse Power Vs Pulse Time

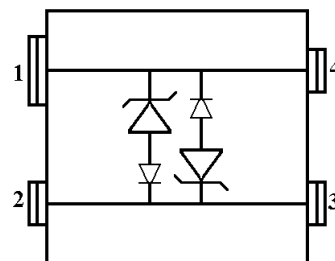


t -- Time in microsec  
**FIGURE 2**  
Pulse Wave Form

**PACKAGING AND SCHEMATIC**



PAD DIMENSIONS				
DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	.032	.040	.813	1.016
A1	.040	.048	1.016	1.219
B	---	.057	---	1.448
C	---	.087	---	2.210
D	.075	.075	1.905	1.905
E	.067	.067	1.702	1.702
G	.032	.040	.813	1.016
H	.134	.140	3.404	3.556



**SCHEMATIC**

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	.070	.080	1.778	2.032
B	.047	.055	1.194	1.397
C	.030	.037	.762	.940
C1	.015	.020	.381	.508
D	.110	.119	2.794	3.023
E	.035	.044	.889	1.118
F	.071	.079	1.803	2.007
G	.0006	.006	.015	.152
H	.003	.007	.076	.178
I	.018	.023	.457	.584
J	.083	.093	2.108	2.362

