



Voidless Hermetically-Sealed Bidirectional Transient Voltage Suppressor, 5 to 48 Volts

DESCRIPTION

These bidirectional, high speed, voltage protection devices are ideally suited for applications where fast response is essential. The use of passivated die metallurgically bonded on both sides assures long term reliability. This series is especially useful in protecting microprocessors, MOS, CMOS, TTL, Schottky TTL, ECL, I²L and linear integrated circuits from spurious transient disturbances including NEMP (Nuclear Electromagnetic Pulse) and electrostatic discharge.

Important: For the latest information, visit our website <http://www.microsemi.com>.

FEATURES

- Bidirectional.
- Rated at 150 W peak pulse power for a 10/1000 μ s test pulse. (1000 watts P_{PP} for 8/20 μ s pulse.)
- Clamping time in pico seconds.
- Metallurgically bonded construction.
- Voidless hermetically sealed glass package.
- RoHS compliant versions are available.

APPLICATIONS / BENEFITS

- High reliability transient protection.
- Extremely robust construction.
- Working peak “standoff” voltage (V_{WM}) from 5.0 to 48 volts.
- Flexible axial-leaded mounting terminals.

MAXIMUM RATINGS @ 25 °C unless other wise noted

Parameters/Test Conditions	Symbol	Value	Unit
Junction and Storage Temperature	T _J and T _{STG}	-65 to +175	°C
Steady State Power Dissipation @ T _L = 75 °C, lead length = 1/8 inch	P _D	2.5	W
Peak Pulse Power (10/1000 μ s)	P _{PP}	150	W
Peak Pulse Power (8/20 μ s)		1000	
Solder Temperature (10 s maximum)		260	°C



“A” Package

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ELECTRICAL CHARACTERISTICS @ $T_A = 25^\circ\text{C}$ unless otherwise noted.

TYPE	MINIMUM BREAKDOWN VOLTAGE $V_{(BR)}$ @ 1 mA	WORKING STAND- OFF VOLTAGE V_{WM}	MAXIMUM LEAKAGE CURRENT I_D	MAXIMUM CLAMPING VOLTAGE V_C @ 10 A (8/20 μs) (see Figure 2)	MAXIMUM PEAK PULSE CURRENT I_{PP} (8/20 μs)	MAXIMUM TEMP. COEF. of $V_{(BR)}$ $\alpha_{V(BR)}$
	V	V	μA	V (pk)	A (pk)	%/ $^\circ\text{C}$
EPS5	6.0	5	50	9.5	89.4	0.030
EPS8	9.0	8	2	13.7	62.1	0.040
EPS12	13.8	12	1	21.6	40.3	0.060
EPS15	16.7	15	1	26.0	33.9	0.070
EPS17	19.0	17	1	29.2	30.8	0.075
EPS24	28.4	24	1	43.2	22.0	0.080
EPS28	31.0	28	1	47.8	19.2	0.085
EPS33	36.8	33	1	56.7	16.4	0.090
EPS48	54.0	48	1	84.3	11.2	0.095

GRAPHS

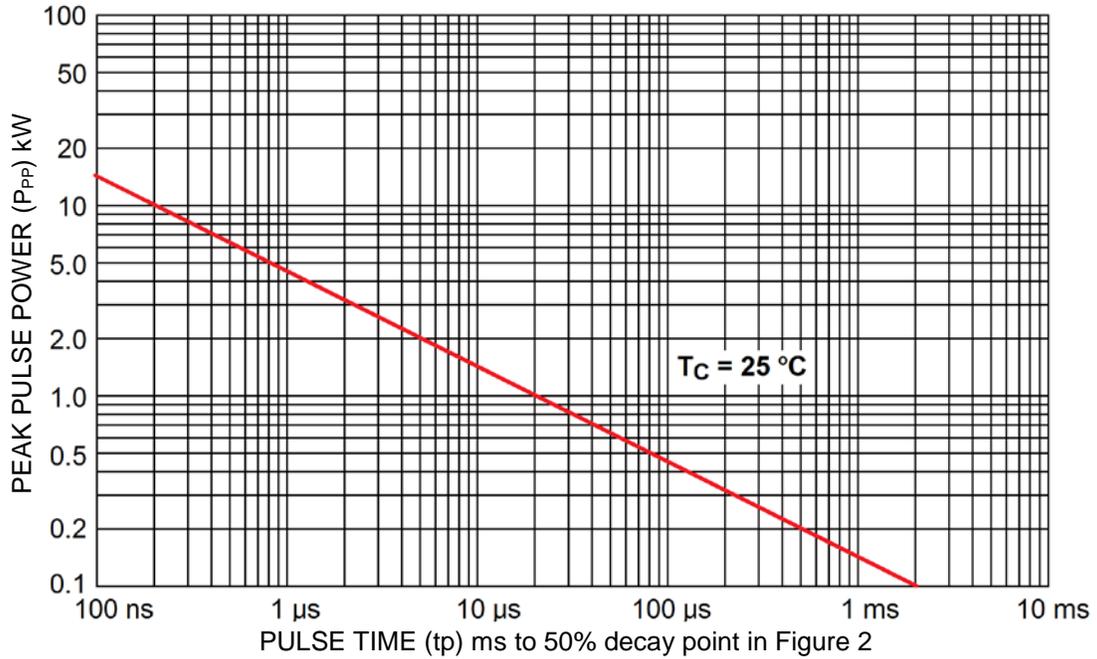


FIGURE 1
PEAK PULSE POWER VS. PULSE TIME

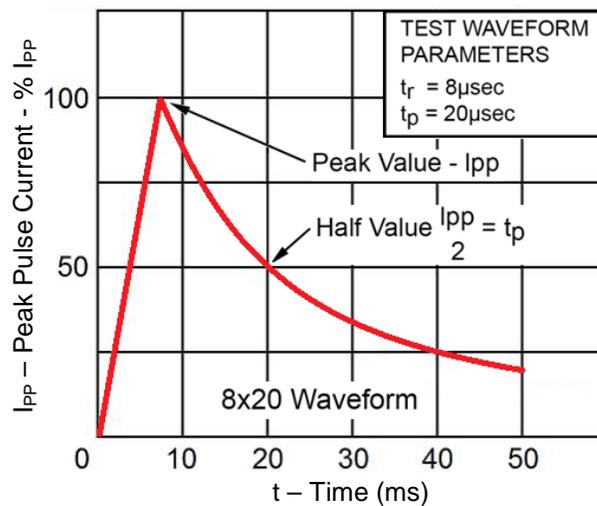


FIGURE 2
8/20 μ s CURRENT IMPULSE WAVEFORM

GRAPHS

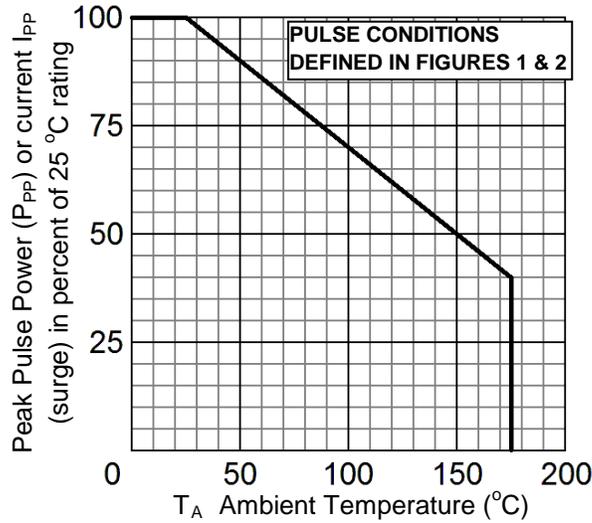


FIGURE 3
DERATING CURVE

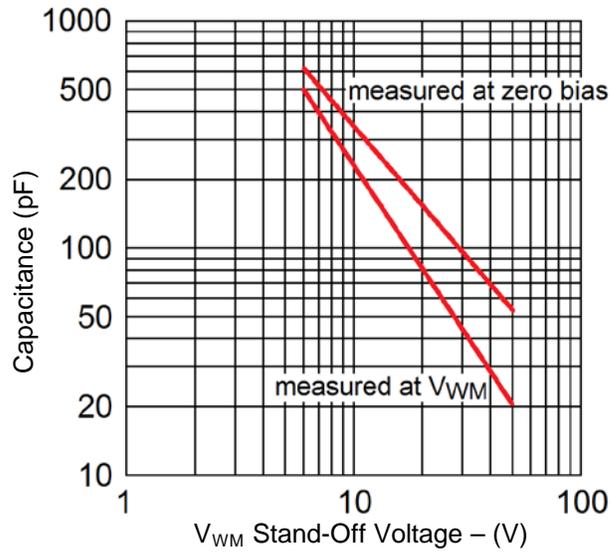
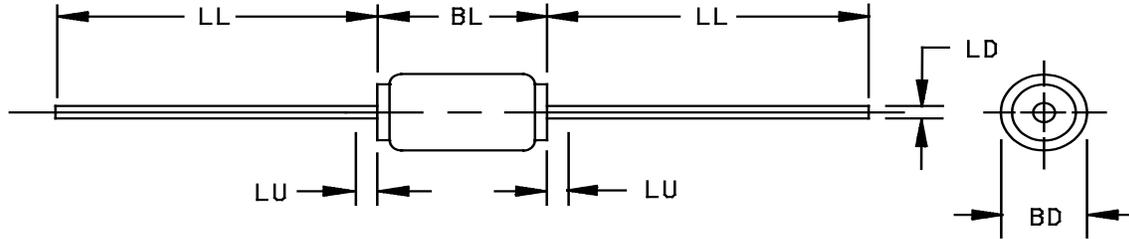


FIGURE 4
TYPICAL CAPACITANCE VS STAND-OFF VOLTAGE

PACKAGE DIMENSIONS

NOTES:

1. Dimensions are in inches.
2. Millimeters are given for information only.
3. Dimension BD shall be measured at the largest diameter.
4. Dimension LU lead diameter uncontrolled in this area.
5. In accordance with ASME Y14.5M, diameters are equivalent to Φ x symbology.

Ltr	Dimensions				Notes
	Inches		Millimeters		
	Min	Max	Min	Max	
BD	0.060	0.085	1.52	2.16	3
BL	0.121	0.175	3.07	4.45	
LD	0.028	0.032	0.71	0.81	
LL	0.800	1.300	20.32	33.02	
LU	-	0.050	-	1.27	4