

# SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSORS

UPT5 - UPT48  
UPTB5 - UPTB48

**POWERMITE™** Package  
5 to 48V, 1000 Watts Peak

## FEATURES

- Peak Pulse Power 1000W for 8 x 20 microsec pulse
- Clamping Time in Picoseconds
- Integral Heat Sink/Locking Tabs
- Full Metallic Bottom Eliminates Flux Entrapment
- Bidirectional Version Available

## DESCRIPTION

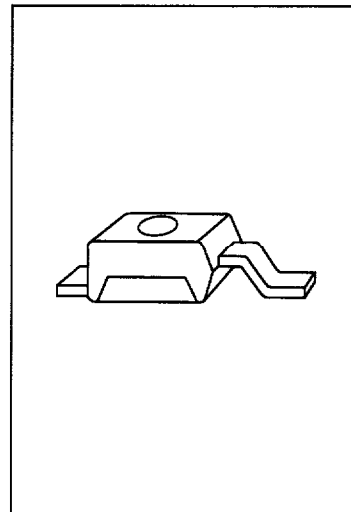
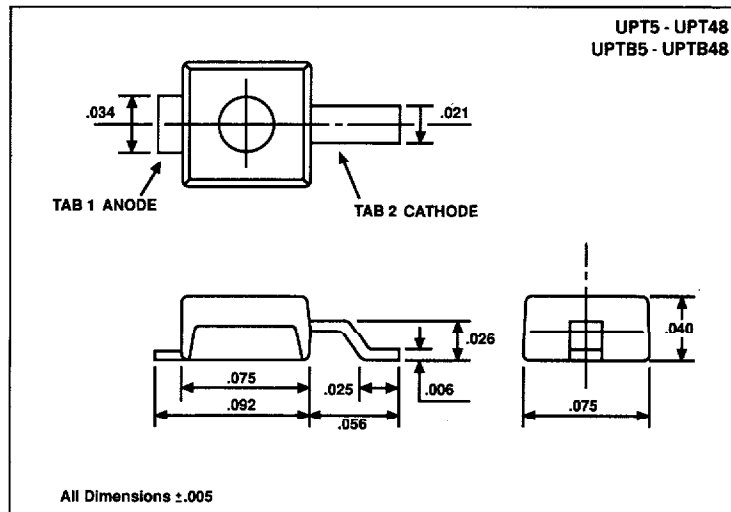
Microsemi's new Powermite UPT series of transient voltage suppressors feature oxide passivated zener type chips with high-temperature solder bonds to achieve high surge capability and negligible electrical degradation under repeated surge conditions.

In addition to its size advantages, Powermite package features include a full metallic bottom that eliminates the possibility of solder flux entrapment during assembly and a unique locking tab that acts as an integral heat sink. Its innovative design makes this device fully compatible for use with automatic insertion equipment.

## ABSOLUTE MAXIMUM RATINGS AT 25°C

Stand-Off Voltage	5 to 48V (See Characteristics Table)
Peak Pulse Power (8 x 20 microsec pulse)	1000W (See Figure 1)
Peak Pulse Power (1 millisecc pulse)	150W (See Figure 2)
Peak Pulse Current	See Characteristics Table
Breakdown Voltage	See Characteristics Table
Power Continuous	.25W

## MECHANICAL SPECIFICATIONS



ELECTRICAL CHARACTERISTICS AT 25°C

Type		Stand-Off Voltage $V_R$	Minimum Breakdown Voltage BV(min) @ 1mA	Maximum Leakage Current $I_R$ @ $V_R$	Maximum Peak Current* $I_P$	Maximum Clamping Voltage* $V_C$ @ 10A	Maximum Temp. Coef. of BV (%/°C)
Unidirectional	Bidirectional	(V)	(V)	( $\mu$ A)	(A)	(V)	(%/°C)
UPT5	UPTB5	5	6.0	50	89.4	9.5	.030
UPT8	UPTB8	8	9.0	2	62.1	13.7	.040
UPT12	UPTB12	12	13.8	1	40.3	21.6	.050
UPT15	UPTB15	15	16.7	1	33.9	26.0	.055
UPT17	UPTB17	17	19.0	1	30.8	29.2	.060
UPT24	UPTB24	24	28.4	1	22.0	43.2	.070
UPT28	UPTB28	28	31.0	1	19.2	47.8	.075
UPT33	UPTB33	33	36.8	1	16.4	56.7	.080
UPT48	UPTB48	48	54.0	1	11.2	84.3	.090

\*See Figure 1.

Figure 1. Current Impulse Waveform

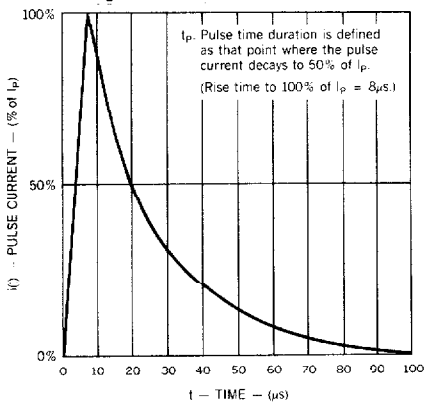
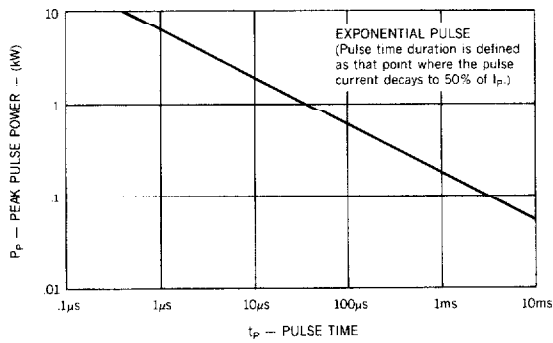


Figure 2. Peak Pulse Power vs. Pulse Duration



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Figure 3. Derating Curve

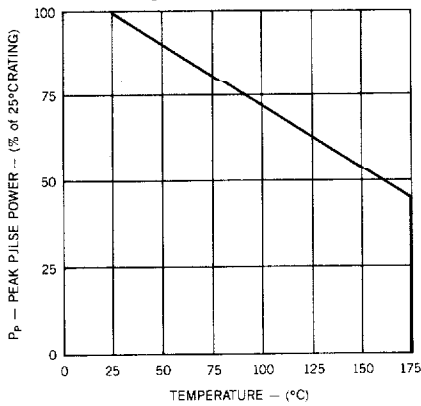


Figure 4. Typical Capacitance vs. Stand-Off Voltage

