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1N6356 thru 1N6372 and MPT-5 thru MPT-45C

TRANSIENT ABSORPTION ZENER

FEATURES

- DESIGNED TO PROTECT BIPOLAR AND MOS MICROPROCESSOR BASED SYSTEMS.
- VOLTAGE RANGE OF 5.0 TO 45 VOLTS
- LOW CLAMPING RATIO

MAXIMUM RATINGS

1500 Watts of Peak Pulse Power dissipation at 25oC at 10/1000 μs

$t_{clamping}$ (0 volts to $V_{(BR)}$ min): Unidirectional — Less than 1×10^{-12} seconds
Bidirectional — Less than 5×10^{-9} seconds

Operating and Storage temperatures: -65° to +175°C

Forward surge rating: 200 amps, 1/120 second at 25°C
(Applies to Unipolar or single direction only for 1N6356-1N6364)

Steady State power dissipation: 1.0 watt

Repetition rate (duty cycle): .01%

ELECTRICAL CHARACTERISTICS

Clamping Factor: 1.33 @ Full rated power
1.20 @ 50% rated power

Clamping Factor: The ratio of the actual V_C (Clamping Voltage) to the actual $V_{(BR)}$ (Breakdown Voltage) as measured on a specific device.

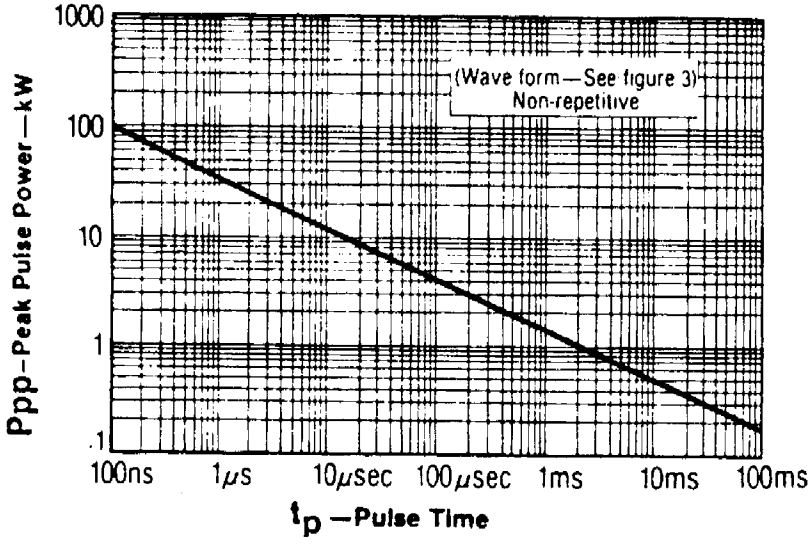
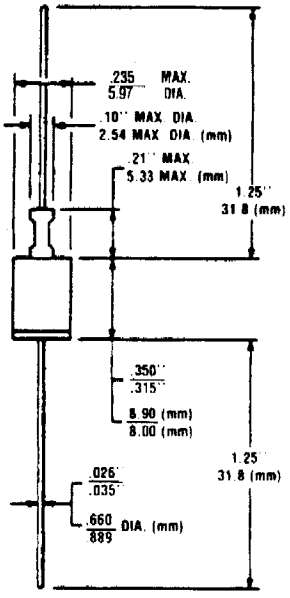


FIGURE 1
PEAK PULSE POWER VS. PULSE TIME



MECHANICAL CHARACTERISTICS

CASE: DO-13 welded, hermetically sealed, metal and glass.

FINISH: All external surfaces are corrosion resistant and leads solderable.

POLARITY: Cathode connected to case and marked. Bidirectional not marked.

WEIGHT: 1.4 grams (Appx.)

MOUNTING POSITION: Any.

1N6356 thru 1N6372 and MPT-5 thru MPT-45C

ELECTRICAL CHARACTERISTICS @ 25°C

MICROSEMI PART NUMBER		STAND-OFF VOLTAGE (NOTE 1) V_{WM} VOLTS	MAXIMUM REVERSE LEAKAGE @ V_{WM} I_D μA	MINIMUM* BREAKDOWN VOLTAGE @ 1.0 mA $V_{(BR)}$ (min) VOLTS	MAXIMUM CLAMPING VOLTAGE (Fig. 2) I_{PP1} = 1A V_C VOLTS	MAXIMUM CLAMPING VOLTAGE (Fig. 2) @ I_{PP2} = 10A V_C VOLTS	MAXIMUM PEAK PULSE CURRENT I_{PP3} A
1N6356	MPT-5	5.0	300	6.0	7.1	7.5	160
1N6357	MPT-8	8.0	25	9.4	11.3	11.5	100
1N6358	MPT-10	10.0	2	11.7	13.7	14.1	90
1N6359	MPT-12	12.0	2	14.1	16.1	16.5	70
1N6360	MPT-15	15.0	2	17.6	20.1	20.6	60
1N6361	MPT-18	18.0	2	21.2	24.2	25.2	50
1N6362	MPT-22	22.0	2	25.9	29.8	32.0	40
1N6363	MPT-36	36.0	2	42.4	50.6	54.3	23
1N6364	MPT-45	45.0	2	52.9	63.3	70.0	19

V_f at 100 amps peak, 8.3 msec sine wave equals 3.5 volts maximum

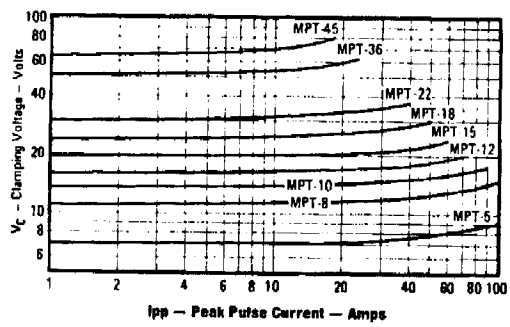
ELECTRICAL CHARACTERISTICS @ 25°C (Test Both Polarities)

	MPT-5C	5.0	300	6.0	7.1	7.5	160
1N6365	MPT-8C	8.0	25	9.4	11.4	11.6	100
1N6366	MPT-10C	10.0	2	11.7	14.1	14.5	90
1N6367	MPT 12C	12.0	2	14.1	16.7	17.1	70
1N6368	MPT-15C	15.0	2	17.6	20.8	21.4	60
1N6369	MPT-18C	18.0	2	21.2	24.8	25.5	50
1N6370	MPT-22C	22.0	2	25.9	30.8	32.0	40
1N6371	MPT-36C	36.0	2	42.4	50.6	54.3	23
1N6372	MPT-45C	45.0	2	52.9	63.3	70.0	19

C Suffix indicates Bidirectional

NOTE 1 TAZ are normally selected according to the reverse "Stand Off Voltage" (V_{WM}) which should be equal to or greater than the DC or continuous peak operating voltage level.

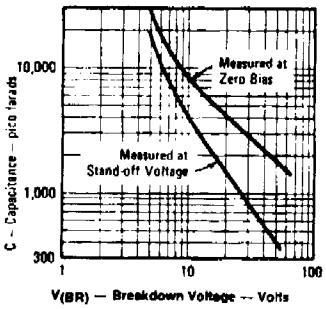
*The minimum breakdown voltage as shown takes into consideration the ±1 volt tolerance normally specified for power supply regulation on most integrated circuit manufacturers data sheets. Similar devices are available with reduced clamping voltages where tighter regulated power supply voltages are employed.



Typical Characteristic Clamping Voltage vs. Peak Pulse Current

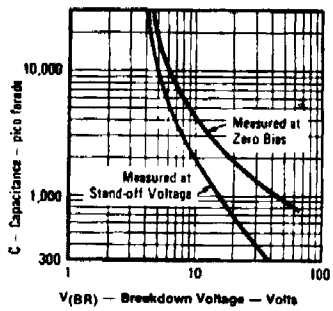
FIGURE 2

FIGURE 3



Typical Capacitance vs. Breakdown Voltage (Unidirectional Types)

FIGURE 4



Typical Capacitance vs. Breakdown Voltage (Bidirectional Types)