


**Microsemi Corp.**

The diode experts

SANTA ANA, CA

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For more information call:  
(602) 941-6300

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

**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 25°C

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

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

Forward surge rating: 200 amps, 1/120 second at 25°C

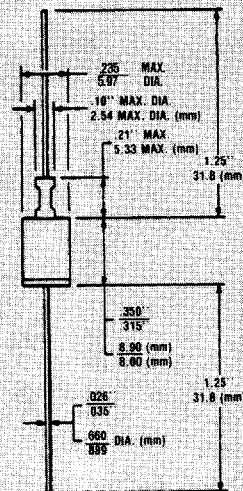
(Applies to Unipolar or single direction only)

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 powerClamping Factor: The ratio of the actual  $V_C$  (Clamping Voltage) to the actual  $V_{\text{BR}}$  (Breakdown Voltage) as measured on a specific device.**TRANSIENT  
ABSORPTION ZENER**

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**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<br>PART<br>NUMBER | STAND-OFF<br>VOLTAGE<br>(NOTE 1)<br>$V_{WM}$<br>VOLTS | MAXIMUM<br>REVERSE<br>LEAKAGE<br>@ $V_{WM}$<br>$I_D$<br>$\mu A$ | MINIMUM*<br>BREAKDOWN<br>VOLTAGE<br>@ mA<br>$V_{BR}$ (min)<br>VOLTS | MAXIMUM<br>CLAMPING VOLTAGE<br>(Fig. 2)<br>$I_{PP1} = 1A$<br>$V_C$<br>VOLTS | MAXIMUM<br>CLAMPING VOLTAGE<br>(Fig. 2)<br>@ $I_{PP2} = 10A$<br>$V_C$<br>VOLTS | MAXIMUM<br>PEAK PULSE<br>CURRENT<br>$I_{PP3}$<br>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

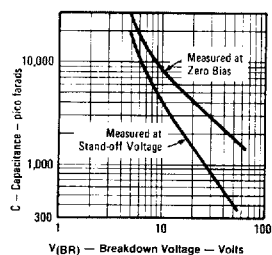
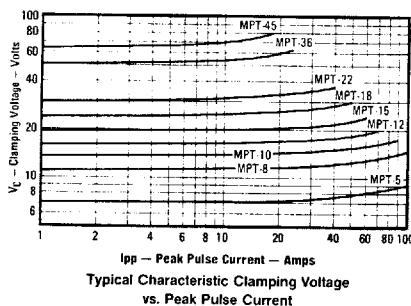
## ELECTRICAL CHARACTERISTICS @ 25°C (Test Both Polarities)

|                |      |    |      |      |      |     |
|----------------|------|----|------|------|------|-----|
| 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  |

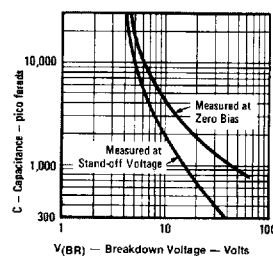
C Suffix indicates Bidirectional

**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  $\pm 1$  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 Capacitance vs. Breakdown Voltage  
(Unidirectional Types)



Typical Capacitance vs. Breakdown Voltage  
(Bidirectional Types)