

Silicon Avalanche Diodes

1500 Watt Axial Leaded Transient Voltage Suppressors

ICTE/MPTE Series



The ICTE/MPTE series 1500 W transient suppressors are designed specifically for protection of CMOS, NMOS, BiMOS, and other integrated circuits available today for TTL, DTL, ECL, RTL, and linear functions. This series offers the lowest clamping voltages.

FEATURES

- Stand-off voltage range 5 to 45 Volts
- Uni-directional and Bi-directional
- Glass passivated junction
- Very low clamping voltages
- 100% surge tested

MAXIMUM RATING

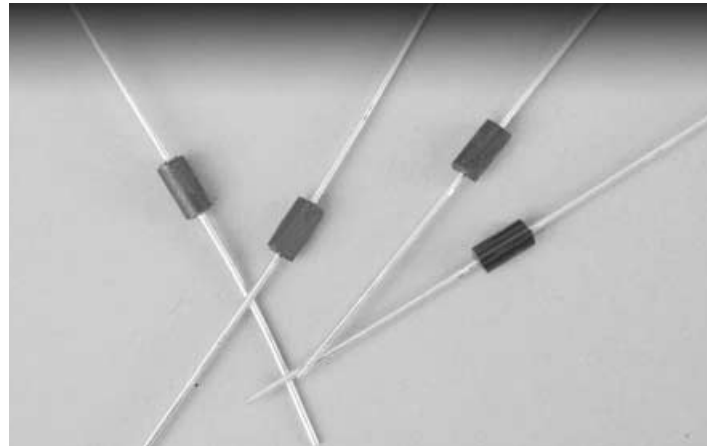
- Peak Pulse Power (Ppk): 1500 Watts (10 x 1000µs) @25°C (see diagram on page 3 for wave form)
- 5 watt steady state
- Response time: 1×10^{-12} seconds (theoretical)
- Forward surge rating 200 Amps, 8.3ms half sine wave, (uni-directional devices only)
- Operating & storage temperature: -55°C to +150°C

MECHANICAL CHARACTERISTICS

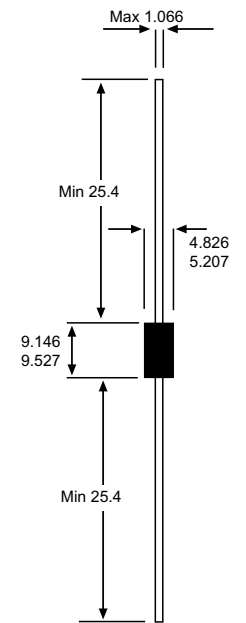
- Case: DO-201AD: Molded plastic over glass passivated junction
- Terminals: Axial leads, solderable per MIL-STD-202 Method 208
- Solderable leads = 230°C for 10 seconds (1.59mm from case)
- Marking: cathode band, (positive terminal, uni-directional devices only), device code, logo
- Weight: 1.5 grammes (approx)

Agency Approvals: Recognized under the Components Program of Underwriters Laboratories.

Agency File Number: E128662

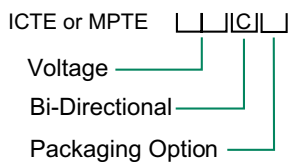


6 SILICON DIODE ARRAYS



All dimensions in mm

ORDERING INFORMATION



- B = Bulk (500 pcs)
- T = Tape and reeled (1500 pcs)

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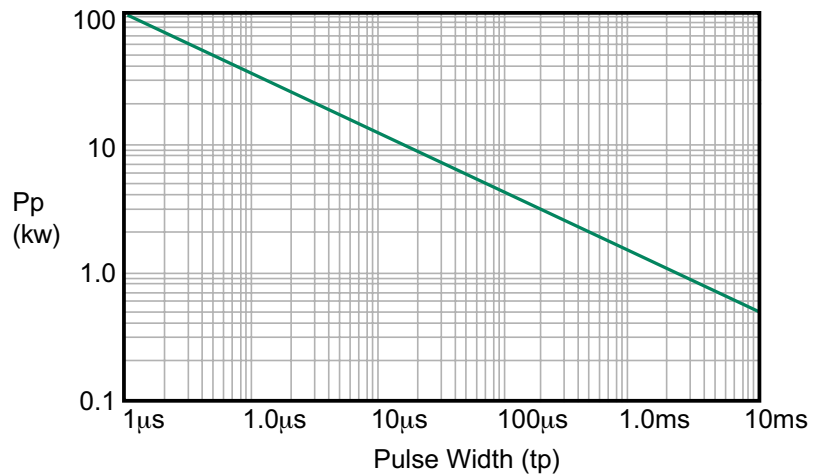
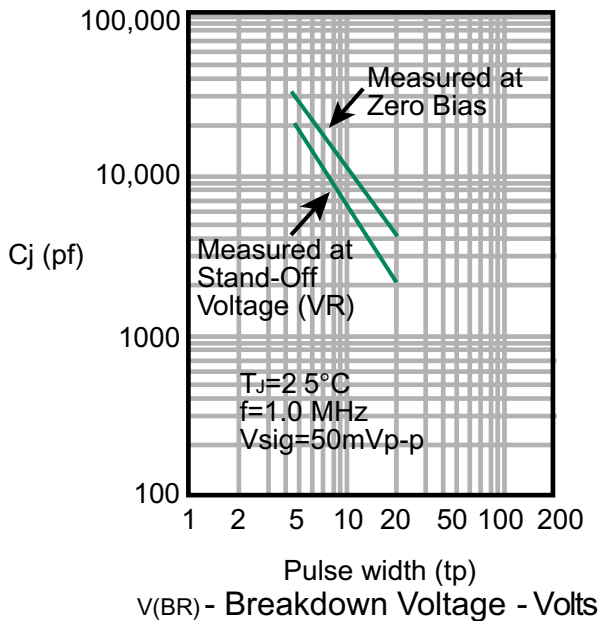


Figure 1 - Typical Junction Capacitance

Figure 2 - Peak Pulse Power Rating Curve

ELECTRICAL SPECIFICATION @ Tamb 25°C

| Part Number | Reverse Standoff Voltage V_r (Volts) | Minimum Breakdown Voltage V_{br} @1mA (Volts) | Maximum Reverse Leakage I_r @ V_r (μA) | Maximum Clamping Voltage V_c @ $I_{PP} 1=1A$ (Volts) | Maximum Clamping Voltage V_c @ $I_{PP} 2=10A$ (Volts) | Maximum Peak Pulse Current I_{PP} (A) |
|-------------------|--|---|---|--|---|---|
| ICTE-5/MPTE-5* | 5.0 | 6.0 | 300.0 | 7.1 | 7.5 | 160.0 |
| ICTE-8/MPTE-8* | 8.0 | 9.4 | 25.0 | 11.3 | 11.5 | 100.0 |
| ICTE-10/MPTE-10 | 10.0 | 11.7 | 2.0 | 13.7 | 14.1 | 90.0 |
| ICTE-12/MPTE-12 | 12.0 | 14.1 | 2.0 | 16.1 | 16.5 | 70.0 |
| ICTE-15/MPTE-15 | 15.0 | 17.6 | 2.0 | 20.1 | 20.6 | 60.0 |
| ICTE-18/MPTE-18* | 18.0 | 21.2 | 2.0 | 24.2 | 25.2 | 50.0 |
| ICTE-22/MPTE-22 | 22.0 | 25.9 | 2.0 | 29.8 | 32.0 | 40.0 |
| ICTE-36/MPTE-36 | 36.0 | 42.4 | 2.0 | 50.6 | 54.3 | 23.0 |
| ICTE-45/MPTE-45 | 45.0 | 52.9 | 2.0 | 63.3 | 70.0 | 19.0 |
| ICTE-8C/MPTE-8C | 8.0 | 9.4 | 50.0 | 11.4 | 11.6 | 100.0 |
| ICTE-10C/MPTE-10C | 10.0 | 11.7 | 2.0 | 14.1 | 14.5 | 90.0 |
| ICTE-12C/MPTE-12C | 12.0 | 14.1 | 2.0 | 16.7 | 17.1 | 70.0 |
| ICTE-15C/MPTE-15C | 15.0 | 17.6 | 2.0 | 20.8 | 21.4 | 60.0 |
| ICTE-18C/MPTE-18C | 18.0 | 21.2 | 2.0 | 24.8 | 25.5 | 50.0 |
| ICTE-22C/MPTE-22C | 22.0 | 25.9 | 2.0 | 30.8 | 32.0 | 40.0 |
| ICTE-36C/MPTE-36C | 36.0 | 42.4 | 2.0 | 50.6 | 54.3 | 23.0 |
| ICTE-45C/MPTE-45C | 45.0 | 52.9 | 2.0 | 63.3 | 70.0 | 19.0 |

ICTE-5 is not available in Bi-directional. Suffix 'C' denotes Bi-directional device. * Preferred voltages.

V_f max = 3.5 Volts max at $I_f = 50A$ 300 μs square wave pulse