

# 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

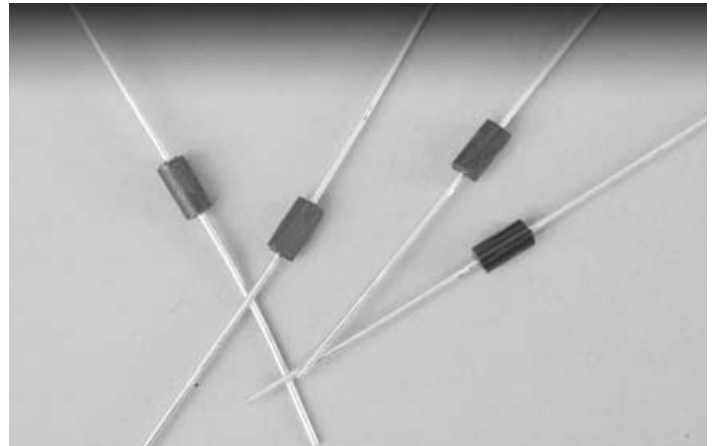
- Peak Pulse Power (Ppk): 1500 Watts (10 x 1000µs) @25°C (see diagram on page 3 for wave form)
- 5 watt steady state
- Response time:  $1 \times 10^{-12}$  seconds (theoretical)
- Forward surge rating 200 Amps, 8.3ms half sine wave, (uni-directional devices only)
- Operating & storage temperature: -55°C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

#### MECHANICAL CHARACTERISTICS

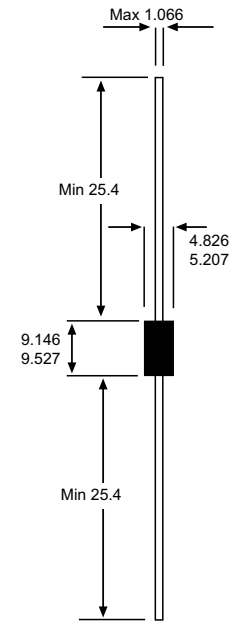
- Case: DO-201AD: Molded plastic over glass passivated junction
- Terminals: Axial leads, solderable per MIL-STD-202 Method 208
- Solderable leads = 230°C for 10 seconds (1.59mm from case)
- Marking: cathode band, (positive terminal, uni-directional devices only), device code, logo
- Weight: 1.5 grammes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

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

**Agency File Number:** E128662

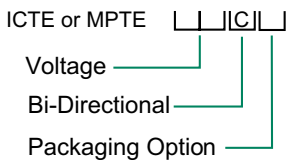


6 SILICON DIODE ARRAYS



All dimensions in mm

#### ORDERING INFORMATION



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

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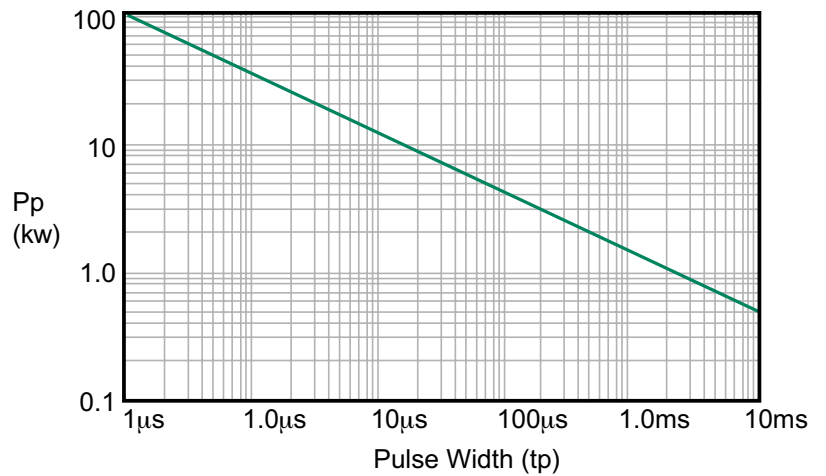
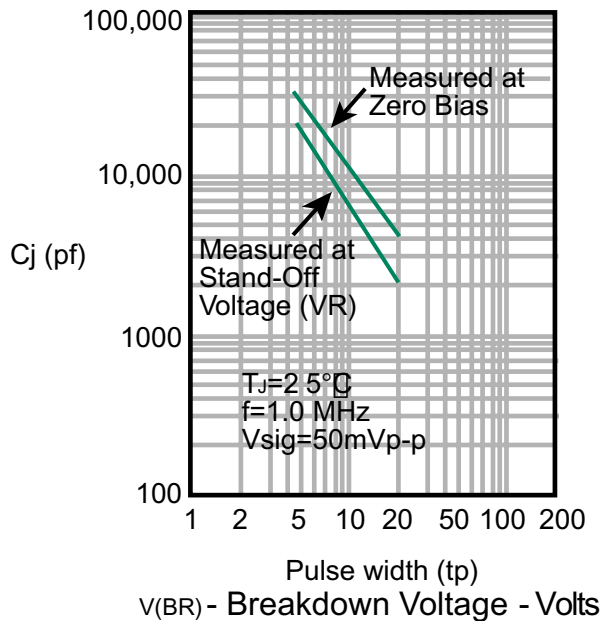


Figure 1 - Typical Junction Capacitance

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 $I_r$ @ $V_r$ ( $\mu A$ )	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 $\mu s$  square wave pulse