ALSO AVAILABLE IN SURFACE MOUNT

Microsemi Corp.
The diode experts

SCOTTSDALE, AZ
For more information call:
(602) 941-6300

ICTE-5 thru ICTE-45C

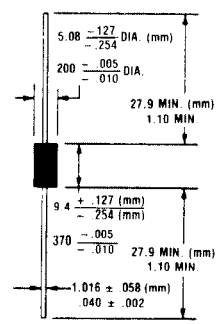
TRANSIENT ABSORPTION ZENER

FEATURES

- DESIGNED TO PROTECT BIPOLAR, MOS, AND SCHOTTKY IMPROVED INTEGRATED CIRCUITS FROM ELECTRICAL DISTURBANCES.
- TRANSIENT PROTECTION FOR CMOS, MOS, BIPOLAR, ICs, (TTL, ECL, DTL, RTL AND LINEAR FUNCTIONS)
- VOLTAGE RANGE OF 5.0 to 45 VOLTS
- LOW CLAMPING RATIO

MAXIMUM RATINGS

1500 Watts of Peak Pulse Power dissipation at 25°C and 10 x 1000μs
$t_{clamping}$ (0 volts to $V_{(BR)}$ min.): Unidirectional—Less than 1 x 10^{-12} seconds
Bidirectional—Less than 5 x 10^{-9} seconds
Operating and Storage Temperatures: -65° to +175°C
Forward Surge Rating: 200 amps, 1/120 second at 25°C
(Applies to Unidirectional or single direction only)
Steady State power dissipation: 5.0 watts @ T_L = 75°C, Lead Length = 3/8"
Repetition rate (duty cycle): .05%



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.

MECHANICAL CHARACTERISTICS

CASE: Void free, molded thermal-setting plastic

FINISH: Silver plated copper readily solderable

POLARITY: Band denotes cathode

WEIGHT: 1.5 grams (Appx.)

MOUNTING POSITION: Any

ICTE-5 thru ICTE-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 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 @ 10 x 1000 μs I_{PP3} A
ICTE-5	5.0	300	6.0	7.1	7.5	160
ICTE-8	8.0	25	9.4	11.3	11.5	100
ICTE-10	10.0	2	11.7	13.7	14.1	90
ICTE-12	12.0	2	14.1	16.1	16.5	70
ICTE-15	15.0	2	17.6	20.1	20.6	60
ICTE-18	18.0	2	21.2	24.2	25.2	50
ICTE-22	22.0	2	25.9	29.8	32.0	40
ICTE-36	36.0	2	42.4	50.6	54.3	23
ICTE-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)

ICTE-5C	5.0	300	6.0	7.1	7.5	160
ICTE-8C	8.0	25	9.4	11.4	11.6	100
ICTE-10C	10.0	2	11.7	14.1	14.5	90
ICTE-12C	12.0	2	14.1	16.7	17.1	70
ICTE-15C	15.0	2	17.6	20.8	21.4	60
ICTE-18C	18.0	2	21.2	24.8	25.5	50
ICTE-22C	22.0	2	25.9	30.8	32.0	40
ICTE-36C	36.0	2	42.4	50.6	54.3	23
ICTE-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.

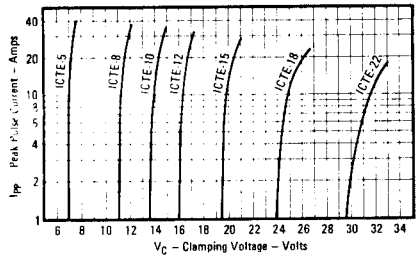
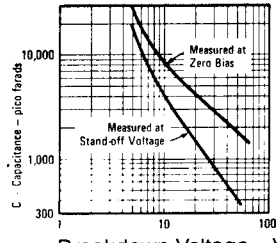
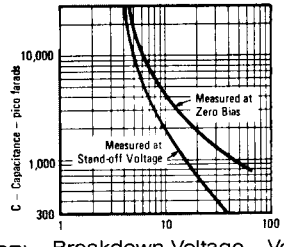


FIGURE 2
TYPICAL CHARACTERISTIC CLAMPING VOLTAGE VS PEAK PULSE CURRENT



$V_{(BR)}$ — Breakdown Voltage — Volts

FIGURE 3
TYPICAL CAPACITANCE VS BREAKDOWN VOLTAGE (UNIDIRECTIONAL TYPES)



$V_{(BR)}$ — Breakdown Voltage — Volts

FIGURE 4
TYPICAL CAPACITANCE VS BREAKDOWN VOLTAGE (BIDIRECTIONAL TYPES)