

# DIGITRON SEMICONDUCTORS

**ICTE-5 THRU ICTE-45C**

**TRANSIENT VOLTAGE SUPPRESSORS  
FOR MICROPROCESSOR PROTECTION**

**MAXIMUM RATINGS @ 25°C AMBIENT UNLESS OTHERWISE SPECIFIED**

<b>5.0 to 450 Volts</b>			
<b>1500 Watt Peak Power</b>			
<b>5.0 Watt Steady State</b>			
<b>Rating</b>	<b>Symbol</b>	<b>Value</b>	<b>Units</b>
<b>Peak Power Dissipation @ <math>T_A = 25^\circ\text{C}</math>, <math>T_p = 1\text{ms}</math> (Note 1)</b>	$P_{PK}$	1.5	kWatts
<b>Steady State Power Dissipation @ <math>T_L = 75^\circ\text{C}</math> Lead Lengths .375", (9.5 mm) (Note 2)</b>	$P_D$	5.0	Watts
<b>Clamping Time 0 Volts to <math>V_{BR}</math></b>	$t_{clamping}$	$< 1 \times 10^{-12}$	Sec
<b>Forward Surge Rating 1/120 sec (Uni-polar Only)</b>	$I_{FS}$	200	Amps
<b>Operating and Storage Temperature Range</b>	$T_J, T_{STG}$	-65 to +175	°C

**UNI-POLAR CHARACTERISTICS @ 25°C**

Part Number	Reverse Stand-off Voltage (Note 3) $V_R$ Volts	Maximum Reverse Leakage @ $V_R$ $I_R$ $\mu\text{A}$	Minimum Breakdown Voltage @ 1.0 mA $V_{BR}$ Volts	Maximum Clamping Voltage @ $I_{PP} = 1\text{ A}$ $V_C$ Volts	Maximum Clamping Voltage @ $I_{PP} = 10\text{ A}$ $V_C$ Volts	Maximum Peak Pulse Current (Fig. 2) $I_{PP}$ Amps
<b>ICTE-5</b>	5.0	300	6.0	7.1	7.5	160
<b>ICTE-8</b>	8.0	25	9.4	11.3	11.5	100
<b>ICTE-10</b>	10.0	2	11.7	13.7	14.1	90
<b>ICTE-12</b>	12.0	2	14.1	16.1	16.5	70
<b>ICTE-15</b>	15.0	2	17.6	20.1	20.6	60
<b>ICTE-18</b>	18.0	2	21.2	24.2	25.2	50
<b>ICTE-22</b>	22.0	2	25.9	29.8	32.0	40
<b>ICTE-36</b>	36.0	2	42.4	50.6	54.3	23
<b>ICTE-45</b>	45.0	2	52.9	63.3	70.0	19

**BI-POLAR CHARACTERISTICS @ 25°C**

Part Number	Reverse Stand-off Voltage (Note 3) $V_R$ Volts	Maximum Reverse Leakage @ $V_R$ $I_R$ $\mu\text{A}$	Minimum Breakdown Voltage @ 1.0 mA $V_{BR}$ Volts	Maximum Clamping Voltage @ $I_{PP} = 1\text{ A}$ $V_C$ Volts	Maximum Clamping Voltage @ $I_{PP} = 10\text{ A}$ $V_C$ Volts	Maximum Peak Pulse Current (Fig. 2) $I_{PP}$ Amps
<b>ICTE-8C</b>	8.0	25	9.4	11.4	11.6	100
<b>ICTE-10C</b>	10.0	2	11.7	14.1	14.5	90
<b>ICTE-12C</b>	12.0	2	14.1	16.7	17.1	70
<b>ICTE-15C</b>	15.0	2	17.6	20.8	21.4	60
<b>ICTE-18C</b>	18.0	2	21.2	24.8	25.5	50
<b>ICTE-22C</b>	22.0	2	25.9	30.8	32.0	40
<b>ICTE-36C</b>	36.0	2	42.4	50.6	54.3	23
<b>ICTE-45C</b>	45.0	2	52.9	63.3	70.0	19

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

Clamping Factor is the ratio of  $V_C$  to  $V_{BR}$

# DIGITRON SEMICONDUCTORS

## ICTE-5 THRU ICTE-45C

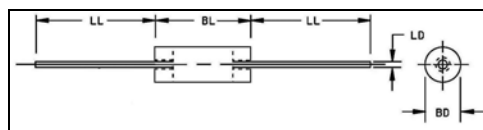
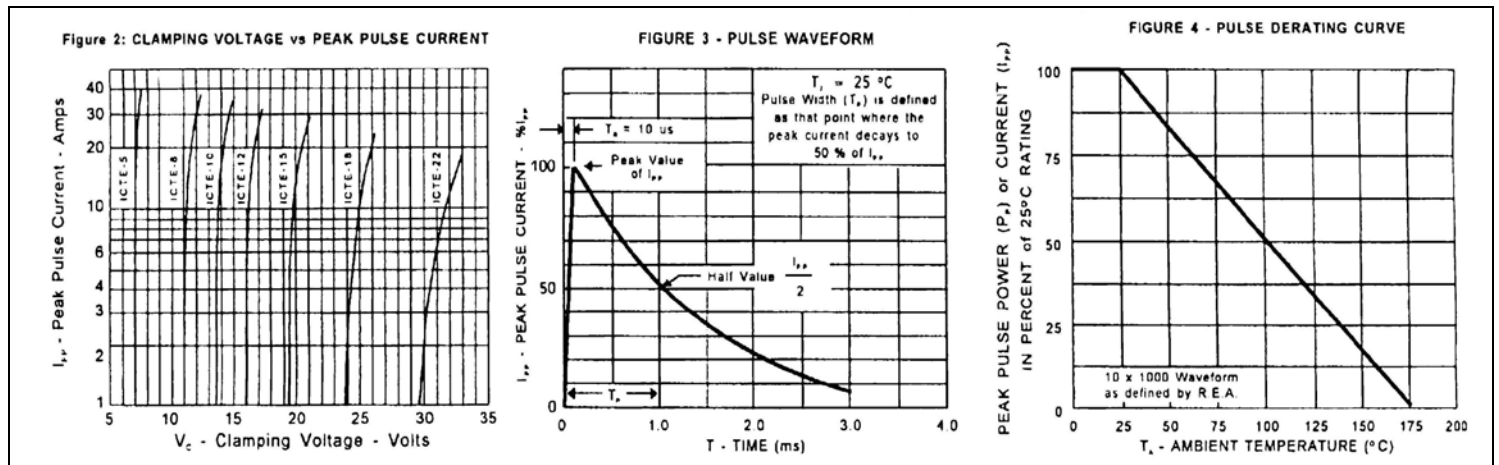
### TRANSIENT VOLTAGE SUPPRESSORS FOR MICROPROCESSOR PROTECTION

**Notes to Characteristics**

1. Non-repetitive current pulse, per Fig. 3, and derated above  $T_A = 25^\circ\text{C}$  per Fig. 2
2. Mounted on copper leaf area of 0.79 sq. in. (20 sq mm)
3.  $V_{BR}$  measured after  $I_T$  applied for 300  $\mu\text{s}$  ( $I_T$  = Square Wave Pulse or equivalent)
4. ICTE-5 is not available as bipolar

**MECHANICAL CHARACTERISTICS**

<b>Case:</b>	Molded plastic over passivated junctions
<b>Polarity:</b>	Cathode band (except bi-polar)
<b>Weight:</b>	0.053 ounce (1.5 grams)



	Dimensions			
	Inches		Millimeters	
	Min	Max	Min	Max
<b>BD</b>	0.190	0.210	4.800	5.300
<b>BL</b>	0.265	0.375	7.200	9.500
<b>LD</b>	0.038	0.042	0.960	1.070
<b>LL</b>	1.000	-	25.400	-

Available Non-RoHS (standard) or RoHS compliant (add PBF suffix).  
 Available as "HR" (high reliability) screened per MIL-PRF-19500, JANTX level. Add "HR" suffix to base part number.