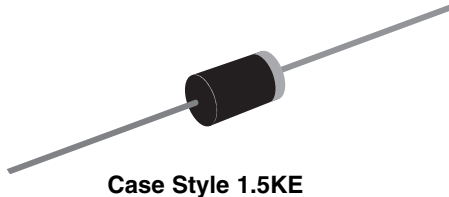


# Low Capacitance TRANSZORB® Transient Voltage Suppressors



Case Style 1.5KE

**FEATURES**

- Glass passivated chip junction
- 1500 W peak pulse power capability with a 10/1000  $\mu$ s waveform, repetitive rate (duty cycle): 0.01 %
- Excellent clamping capability
- Very fast response time
- Low incremental surge resistance
- Solder dip 260 °C, 40 s
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC


**RoHS**  
COMPLIANT

**TYPICAL APPLICATIONS**

Use in sensitive electronics protection against voltage transients induced by inductive load switching and lighting on ICs, MOSFET, signal lines of sensor units for consumer, computer, industrial and telecommunication.

**MECHANICAL DATA**

**Case:** Molded epoxy body over passivated junction  
Molding compound meets UL 94 V-0 flammability rating  
Base P/N-E3 - RoHS compliant, commercial grade  
**Terminals:** Matte tin plated leads, solderable per J-STD-002 and JESD22-B102  
E3 suffix meets JESD 201 class 1A whisker test  
**Polarity:** Color band denotes TVS cathode end

PRIMARY CHARACTERISTICS	
$V_{WM}$	6.5 V to 28 V
$P_{PPM}$	1500 W
$P_D$	6.5 W
$T_J$ max.	175 °C

MAXIMUM RATINGS ( $T_A = 25\text{ °C}$ unless otherwise noted)			
PARAMETER	SYMBOL	LIMIT	UNIT
Peak pulse power dissipation with a 10/1000 $\mu$ s waveform <sup>(1)(2)</sup>	$P_{PPM}$	1500	W
Power dissipation on infinite heatsink at $T_L = 75\text{ °C}$ (Fig. 2)	$P_D$	6.5	W
Peak power pulse surge current with a 10/1000 $\mu$ s waveform <sup>(1)(3)</sup>	$I_{PPM}$	See next table	A
Operating junction and storage temperature range	$T_J, T_{STG}$	- 65 to + 175	°C

**Notes:**

- (1) Non-repetitive current pulse, per Fig. 3 and derated above  $T_A = 25\text{ °C}$  per Fig. 2
- (2) See Fig. 1
- (3) See Fig. 2

<b>ELECTRICAL CHARACTERISTICS</b> ( $T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)											
PART NUMBER	STAND-OFF VOLTAGE $V_{WM}$ (V)	BREAKDOWN VOLTAGE $V_{BR}$ (V)		TEST CURRENT AT $I_T$ (mA)	MAXIMUM REVERSE LEAKAGE AT $V_{WM}$ $I_D$ ( $\mu\text{A}$ )	MAXIMUM CLAMPING VOLTAGE AT $I_{PP}$ $V_C$ (V)	MAXIMUM PEAK PULSE CURRENT (FIG 3) $I_{PPM}$ (A)	MAXIMUM JUNCTION CAPACITANCE AT 0 (V) (pF)	WORKING INVERSE BLOCKING VOLTAGE $V_{WIB}$ (V)	MAXIMUM INVERSE BLOCKING LEAKAGE CURRENT AT $V_{WIB}$ $I_D$ (mA)	MINIMUM PEAK INVERSE BLOCKING VOLTAGE $V_{PIB}$ (V)
		MIN.	MAX.								
LCE6.5	6.5	7.22	8.82	10.0	1000	12.3	100	100	75	1.0	100
LCE6.5A	6.5	7.22	7.98	10.0	1000	11.2	100	100	75	1.0	100
LCE7.0	7.0	7.78	9.51	10.0	500	13.3	100	100	75	1.0	100
LCE7.0A	7.0	7.78	8.60	10.0	500	12.0	100	100	75	1.0	100
LCE7.5	7.5	8.33	10.2	10.0	250	14.3	100	100	75	1.0	100
LCE7.5A	7.5	8.33	9.21	10.0	250	12.9	100	100	75	1.0	100
LCE8.0	8.0	8.89	10.9	1.0	100	15.0	100	100	75	1.0	100
LCE8.0A	8.0	8.89	9.83	1.0	100	13.6	100	100	75	1.0	100
LCE8.5	8.5	9.44	11.5	1.0	50.0	15.9	94	100	75	1.0	100
LCE8.5A	8.5	9.44	10.4	1.0	50.0	14.4	100	100	75	1.0	100
LCE9.0	9.0	10.0	12.2	1.0	10.0	16.9	89	100	75	1.0	100
LCE9.0A	9.0	10.0	11.1	1.0	10.0	15.4	97	100	75	1.0	100
LCE10	10	11.1	13.6	1.0	5.0	18.8	80	100	75	1.0	100
LCE10A	10	11.1	12.3	1.0	5.0	17.0	88	100	75	1.0	100
LCE11	11	12.2	14.9	1.0	5.0	20.1	74	100	75	1.0	100
LCE11A	11	12.2	13.5	1.0	5.0	18.2	82	100	75	1.0	100
LCE12	12	13.3	16.3	1.0	5.0	22.0	68	100	75	1.0	100
LCE12A	12	13.3	14.7	1.0	5.0	19.9	75	100	75	1.0	100
LCE13	13	14.4	17.6	1.0	5.0	23.8	63	100	75	1.0	100
LCE13A	13	14.4	15.9	1.0	5.0	21.5	70	100	75	1.0	100
LCE14	14	15.6	19.1	1.0	5.0	25.8	58	100	75	1.0	100
LCE14A	14	15.6	17.2	1.0	5.0	23.2	65	100	75	1.0	100
LCE15	15	16.7	20.4	1.0	5.0	26.9	56	100	75	1.0	100
LCE15A	15	16.7	18.5	1.0	5.0	24.4	61	100	75	1.0	100
LCE16	16	17.8	21.8	1.0	5.0	28.8	52	100	75	1.0	100
LCE16A	16	17.8	19.7	1.0	5.0	26.0	57	100	75	1.0	100
LCE17	17	18.9	23.1	1.0	5.0	30.5	49	100	75	1.0	100
LCE17A	17	18.9	20.9	1.0	5.0	27.6	54	100	75	1.0	100
LCE18	18	20.0	24.4	1.0	5.0	32.2	46	100	75	1.0	100
LCE18A	18	20.0	22.1	1.0	5.0	29.2	51	100	75	1.0	100
LCE20	20	22.2	27.1	1.0	5.0	35.8	42	100	75	1.0	100
LCE20A	20	22.2	24.5	1.0	5.0	32.4	46	100	75	1.0	100
LCE22	22	24.4	29.8	1.0	5.0	39.4	38	100	75	1.0	100
LCE22A	22	24.4	26.9	1.0	5.0	35.5	42	100	75	1.0	100
LCE24	24	26.7	32.6	1.0	5.0	43.0	35	100	75	1.0	100
LCE24A	24	26.7	29.5	1.0	5.0	38.9	39	100	75	1.0	100
LCE26	26	28.9	35.3	1.0	5.0	46.6	32	100	75	1.0	100
LCE26A	26	28.9	31.9	1.0	5.0	42.1	36	100	75	1.0	100
LCE28	28	31.1	38.0	1.0	5.0	50.1	30	100	75	1.0	100
LCE28A	28	31.1	34.4	1.0	5.0	45.5	33	100	75	1.0	100

**Note:**

(1) All the above devices are UL listed for Telecom application protection 497B, file number E136766

ORDERING INFORMATION (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
LCE6.5-E3/54	0.968	54	1400	13" diameter paper tape and reel

## RATINGS AND CHARACTERISTICS CURVES

( $T_A = 25\text{ }^\circ\text{C}$  unless otherwise noted)

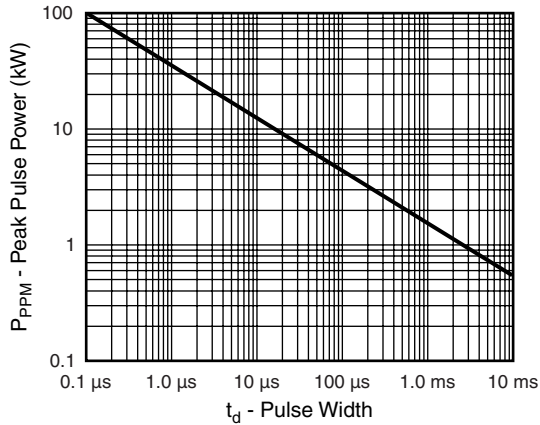


Figure 1. Peak Pulse Power Rating Curve

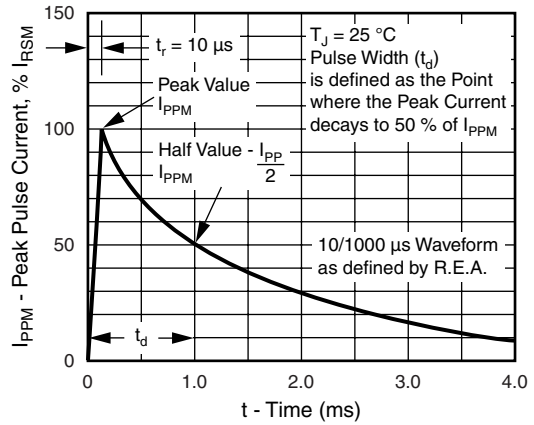


Figure 3. Pulse Waveform

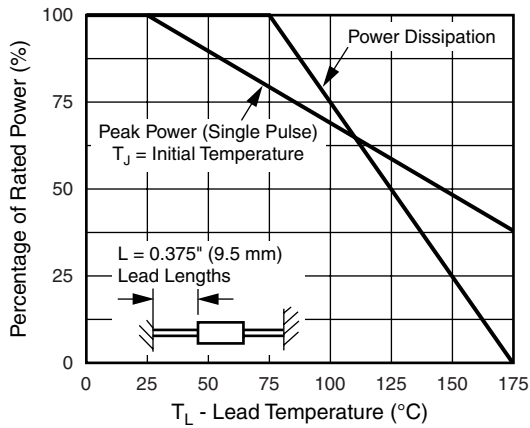
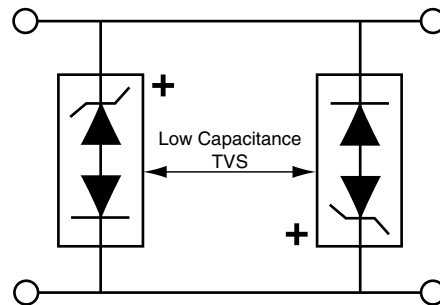


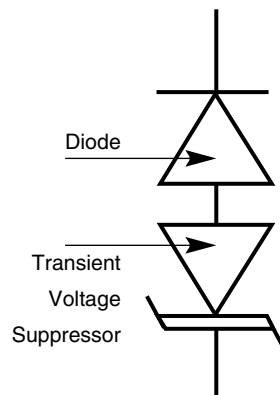
Figure 2. Power Derating Curve



**Application Note:** Device must be used with two units in parallel, opposite in polarity as shown in circuit for AC signal line protection.

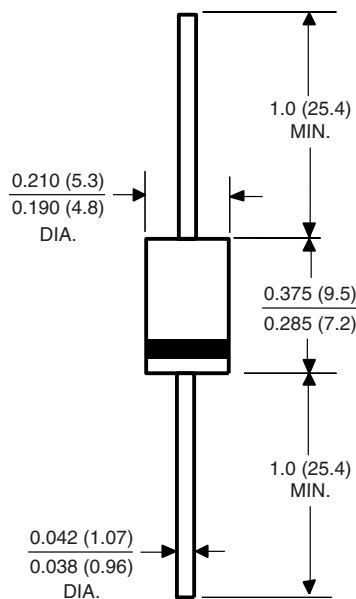
Figure 4. AC Line Protection Application

### Schematic



### PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

#### Case Style 1.5KE





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