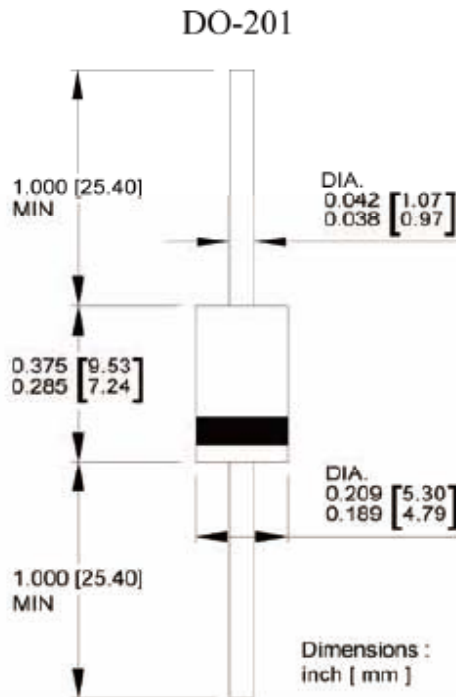




# Axial Lead Transient Voltage Suppressors



### Features

- Glass passivated chip
- 1500W peak pulse power capability with a 10/1000  $\mu$ s waveform, repetitive rate (duty cycle): 0.01%
- Low leakage
- Excellent clamping capability
- Very fast response time
- RoHS compliant

### Mechanical Data

- Case: Molded plastic
- Epoxy: UL 94V-0 rate flame retardant
- Lead: Solderable per MIL-STD-750, method 2026 guaranteed
- Polarity: Color band denotes TVS cathode end
- Mounting position: Any

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

Parameter	Symbol	Value	Unit
Peak power dissipation with a 10/1000 $\mu$ s waveform <sup>(1)</sup>	$P_{PP}$	1500	W
Power dissipation on infinite heatsink at $T_L=75^\circ\text{C}$ (Fig.2)	$P_D$	6.5	W
Peak pulse current with a 10/1000 $\mu$ s waveform (Fig.2) <sup>(1)</sup>	$I_{PP}$	See Next Table	A
Operating junction and storage temperature range	$T_J, T_{STG}$	-55 ~ +150	$^\circ\text{C}$

Note:

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

## Ratings and Characteristics Curves ( $T_A=25^{\circ}\text{C}$ unless otherwise noted)

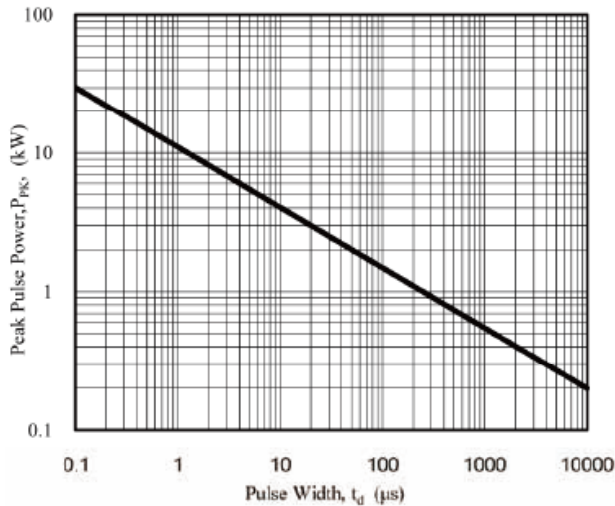


Fig. 1 - Peak Pulse Power Rating Curve

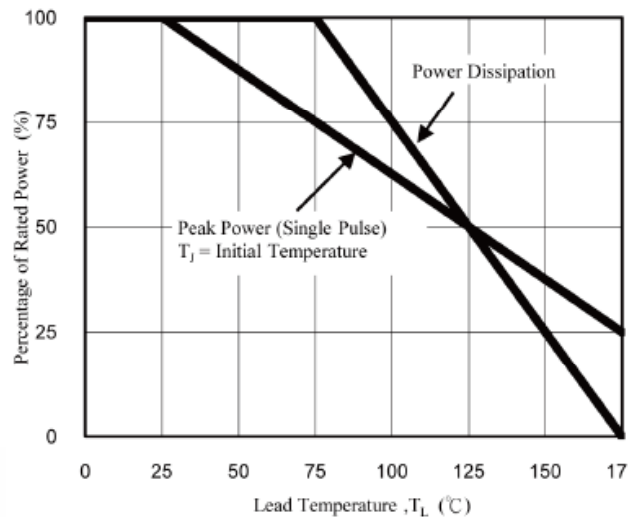


Fig. 2 - Power Derating Curve Surge Current

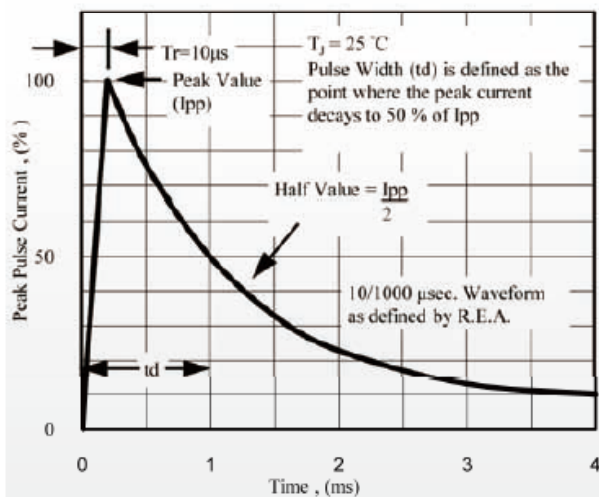
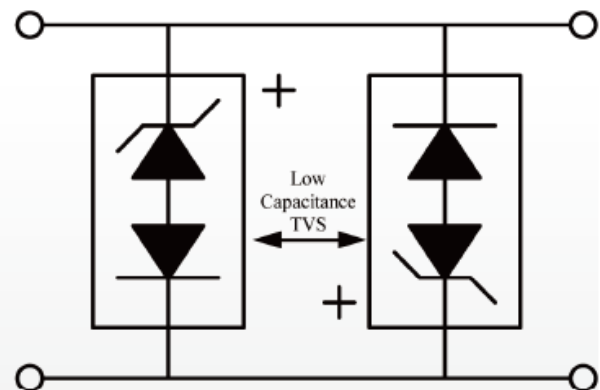


Fig. 3 - Pulse Waveform



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

Fig. 4 - AC Line Protection Application

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

Part Number	Stand-Off Voltage	Breakdown Voltage			Maximum Reverse Leakage	Maximum Clamping Voltage	Maximum Reverse Surge Current	Maximum Junction Capacitance	Working Inverse Blocking Voltage	Inverse Blocking Leakage Current	Peak Inverse Voltage
	$V_{WM}$	$V_{BR} @ I_T=1\text{mA}$			$I_R @ V_{WM}$	$V_C @ I_{PP}$	$I_{PP}$	@ 0V	$V_{WM}$	$I_{IB} @ V_{WIB}$	$V_{PIB}$
	(V)	Min(V)	Max(V)	$I_T$ (mA)	( $\mu\text{A}$ )	(V)	(A)	(pF)	(V)	(mA)	(V)
LCE6.5	6.5	7.22	8.82	10	1000	12.3	100	100	75	1	100
LCE6.5A	6.5	7.22	7.98	10	1000	11.2	100	100	75	1	100
LCE7.0	7.0	7.78	9.51	10	500	13.3	100	100	75	1	100
LCE7.0A	7.0	7.78	8.60	10	500	12.0	100	100	75	1	100
LCE7.5	7.5	8.33	10.20	10	250	14.3	100	100	75	1	100
LCE7.5A	7.5	8.33	9.21	10	250	12.9	100	100	75	1	100
LCE8.0	8.0	8.89	10.90	1	100	15.0	100	100	75	1	100
LCE8.0A	8.0	8.89	9.83	1	100	13.6	100	100	75	1	100
LCE8.5	8.5	9.44	11.50	1	50	15.9	94	100	75	1	100
LCE8.5A	8.5	9.44	10.40	1	50	14.4	100	100	75	1	100

**Electrical Characteristics (T<sub>A</sub>=25°C unless otherwise noted)**

Part Number	Stand-Off Voltage	Breakdown Voltage			Maximum Reverse Leakage	Maximum Clamping Voltage	Maximum Reverse Surge Current	Maximum Junction Capacitance	Working Inverse Blocking Voltage	Inverse Blocking Leakage Current	Peak Inverse Voltage
	V <sub>WM</sub>	V <sub>BR</sub> @ I <sub>T</sub> =1mA			I <sub>R</sub> @ V <sub>WM</sub>	V <sub>C</sub> @ I <sub>PP</sub>	I <sub>PP</sub>	@ 0V	V <sub>WM</sub>	I <sub>IB</sub> @ V <sub>WIB</sub>	V <sub>PIB</sub>
	(V)	Min(V)	Max(V)	I <sub>T</sub> (mA)	(μA)	(V)	(A)	(pF)	(V)	(mA)	(V)
LCE9.0	9.0	10.00	12.20	1	10	16.9	89	100	75	1	100
LCE9.0A	9.0	10.00	11.10	1	10	15.4	97	100	75	1	100
LCE10	10.0	11.10	13.60	1	5	18.8	80	100	75	1	100
LCE10A	10.0	11.10	12.30	1	5	17.0	88	100	75	1	100
LCE11	11.0	12.20	14.90	1	5	20.1	74	100	75	1	100
LCE11A	11.0	12.20	13.50	1	5	18.2	82	100	75	1	100
LCE12	12.0	13.30	16.30	1	5	22.0	68	100	75	1	100
LCE12A	12.0	13.30	14.70	1	5	19.9	75	100	75	1	100
LCE13	13.0	14.40	17.60	1	5	23.8	63	100	75	1	100
LCE13A	13.0	14.40	15.90	1	5	21.5	70	100	75	1	100
LCE14	14.0	15.60	19.10	1	5	25.8	58	100	75	1	100
LCE14A	14.0	15.60	17.20	1	5	23.2	65	100	75	1	100
LCE15	15.0	16.70	20.40	1	5	26.9	56	100	75	1	100
LCE15A	15.0	16.70	18.50	1	5	24.4	61	100	75	1	200
LCE16	16.0	17.80	21.80	1	5	28.8	52	100	75	1	200
LCE16A	16.0	17.80	19.70	1	5	26.0	57	100	75	1	200
LCE17	17.0	18.90	23.10	1	5	30.5	49	100	75	1	200
LCE17A	17.0	18.90	20.90	1	5	27.6	54	100	75	1	200
LCE18	18.0	20.00	24.40	1	5	32.2	46	100	75	1	200
LCE18A	18.0	20.00	22.10	1	5	29.2	51	100	75	1	200
LCE20	20.0	22.20	27.10	1	5	35.8	42	100	75	1	200
LCE20A	20.0	22.20	24.50	1	5	32.4	46	100	75	1	200
LCE22	22.0	24.40	29.80	1	5	39.4	38	100	75	1	200
LCE22A	22.0	24.40	26.90	1	5	35.5	42	100	75	1	200
LCE24	24.0	26.70	32.60	1	5	43.0	35	100	75	1	200
LCE24A	24.0	26.70	29.50	1	5	38.9	39	100	75	1	200
LCE26	26.0	28.90	35.30	1	5	46.6	32	100	75	1	200
LCE26A	26.0	28.90	31.90	1	5	42.1	36	100	75	1	200
LCE28	28.0	31.10	38.00	1	5	50.1	30	100	75	1	200
LCE28A	28.0	31.10	34.40	1	5	45.5	33	100	75	1	200
LCE30A	30.0	33.30	36.80	1	1	48.4	31	100	75	1	100
LCE33A	33.0	36.70	40.60	1	1	53.3	28	100	75	1	100
LCE36A	36.0	40.00	44.20	1	1	58.1	26	100	75	1	100
LCE40A	40.0	44.40	49.10	1	1	64.5	23	100	75	1	100
LCE43A	43.0	47.80	52.80	1	1	69.4	22	100	75	1	100
LCE45A	45.0	50.00	55.30	1	1	72.7	21	100	75	1	100
LCE48A	48.0	53.30	58.90	1	1	77.4	19	100	75	1	100
LCE51A	51.0	56.70	62.70	1	1	82.4	18	100	75	1	100
LCE54A	54.0	60.00	66.30	1	1	87.1	17	100	100	1	125
LCE58A	58.0	64.40	71.20	1	1	93.6	16	100	100	1	125
LCE60A	60.0	66.70	73.70	1	1	96.8	16	100	100	1	125
LCE64A	64.0	71.10	78.60	1	1	103.0	15	100	100	1	125
LCE70A	70.0	77.80	86.00	1	1	113.0	13	100	125	1	150
LCE75A	75.0	83.30	92.10	1	1	121.0	12	100	125	1	150
LCE85A	85.0	94.40	104.00	1	1	129.0	12	100	125	1	150
LCE90A	90.0	100.00	111.00	1	1	146.0	10	100	125	1	150