

Transient Voltage Suppressors (TVS) Data Sheet

Features

- Glass passivated junction
- Low inductance
- Excellent clamping capability
- 1500W peak pulse power capability at 10/1000µs waveform, repetition rate (duty cycle): 0.01%
- Fast response time
- Ideal for data line applications.
- High Temperature soldering guaranteed: 265°C/10 seconds/.375", (9.5mm) lead length, 5lbs (2.3kg) tension
- Plastic package has underwriters laboratory flammability 94V-0
- Meets MSL level 1, per J-STD-020
- Safety certification: UL: E244458



Mechanical Data

- Case: JEDEC DO-201 Moulded plastic
- Terminal: Axial leads, solderable per MIL-STD-750, Method 2026
- Polarity: Color band denotes cathode except bi-directional models
- Mounting Position: Any
- Weight: 0.97g

Applications

- I/O interface
- AC/DC power supply
- Low frequency signal transmission line (RS232, RS485, etc.)

Maximum Ratings and Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

Rating	Symbol	Value	Units
Peak pulse power dissipation at 10/1000µs waveform (Note1 , Fig.1)	P_{PPM}	Minimum 1500	Watts
Peak pulse current of at 10/1000µs waveform (Note 1, Fig.3)	I_{PPM}	See Table	Amps
Steady state power dissipation at $T_A=75^\circ\text{C}$ (Fig.5)	$P_{M(AV)}$	6.5	Watts
Operating junction and Storage Temperature Range.	T_J, T_{STG}	-55 to +150	°C

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

Dimensions (DO-201)

	Symbol	Millimeters		Inches	
		Min.	Max.	Min.	Max.
L	25.40	-	1.000	-	
T	7.20	9.50	0.285	0.375	
d	4.80	5.30	0.190	0.210	
s	0.96	1.07	0.038	0.042	

Electrical Characteristics (T_A=25°C)

Part Number	Reverse Stand-Off Voltage	Breakdown Voltage @I _T	Test Current	Maximum Reverse Leakage @V _{RWM}	Maximum Clamping Voltage @I _{PP}	Maximum Peak Pulse Current	Maximum Junction Capacitance @0V	Working Inverse Blocking Voltage	Inverse Blocking Leakage Current	Peak Inverse Blocking Voltage
	V _{RWM} (V)	V _{BR} (V)	I _T (mA)	I _R (μA)	V _C (V)	I _{PP} (A)	pF	V _{WIB} (V)	I _{IB} (mA)	V _{PIB} (V)
LCE6.5	6.5	7.22~7.98	10	1000	11.2	100	100	75	1.0	100
LCE7.0	7.0	7.78~8.60	10	500	12.0	100	100	75	1.0	100
LCE7.5	7.5	8.33~9.21	10	250	12.9	100	100	75	1.0	100
LCE8.0	8.0	8.89~9.83	1	100	13.6	100	100	75	1.0	100
LCE8.5	8.5	9.44~10.40	1	50	14.4	100	100	75	1.0	100
LCE9.0	9.0	10.00~11.10	1	10	15.4	97	100	75	1.0	100
LCE10A	10.0	11.10~12.30	1	5	17.0	88	100	75	1.0	100
LCE11A	11.0	12.20~13.5	1	1	18.2	82	100	75	1.0	100
LCE12A	12.0	13.30~14.7	1	1	19.9	75	100	75	1.0	100
LCE13A	13.0	14.40~15.9	1	1	21.5	70	100	75	1.0	100
LCE14A	14.0	15.60~17.2	1	1	23.2	65	100	75	1.0	100
LCE15A	15.0	16.70~18.5	1	1	24.4	61	100	75	1.0	100
LCE16A	16.0	17.80~19.7	1	1	26.0	57	100	75	1.0	100
LCE17A	17.0	18.90~20.9	1	1	27.6	54	100	75	1.0	100
LCE18A	18.0	20.00~22.1	1	1	29.2	51	100	75	1.0	100
LCE20A	20.0	22.20~24.5	1	1	32.4	46	100	75	1.0	100
LCE22A	22.0	24.40~26.9	1	1	35.5	42	100	75	1.0	100
LCE24A	24.0	26.70~29.5	1	1	38.9	39	100	75	1.0	100
LCE26A	26.0	28.90~31.9	1	1	42.1	36	100	75	1.0	100
LCE28A	28.0	31.10~34.4	1	1	45.5	33	100	75	1.0	100

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

Figure 1. Peak Pulse Power Rating Curve

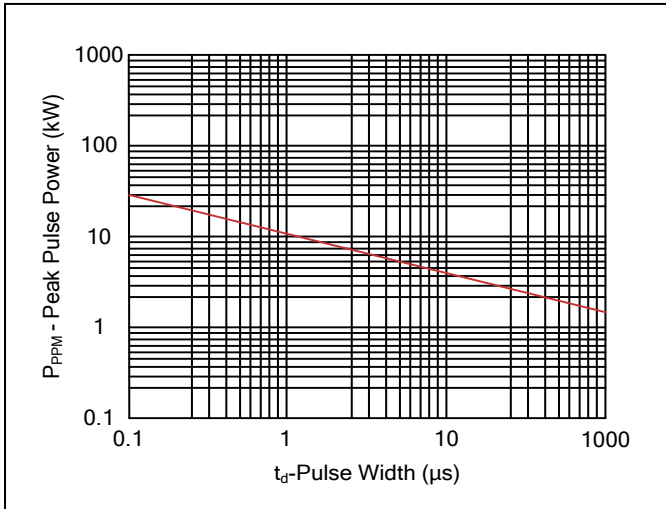


Figure 2. Pulse Derating Curve

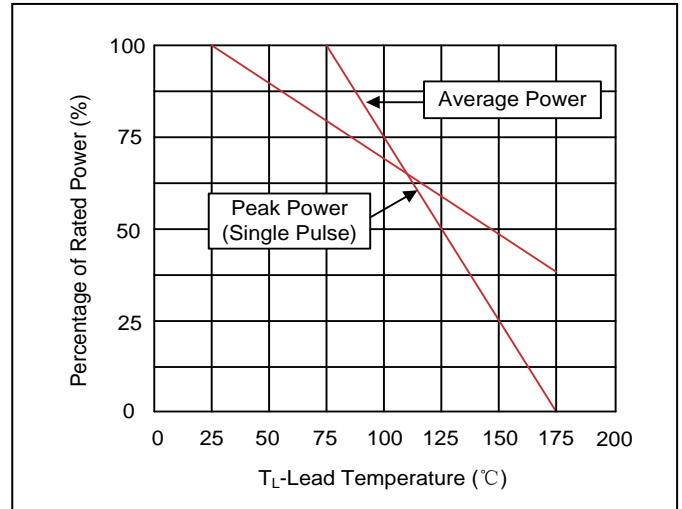


Figure 3. Pulse Waveform

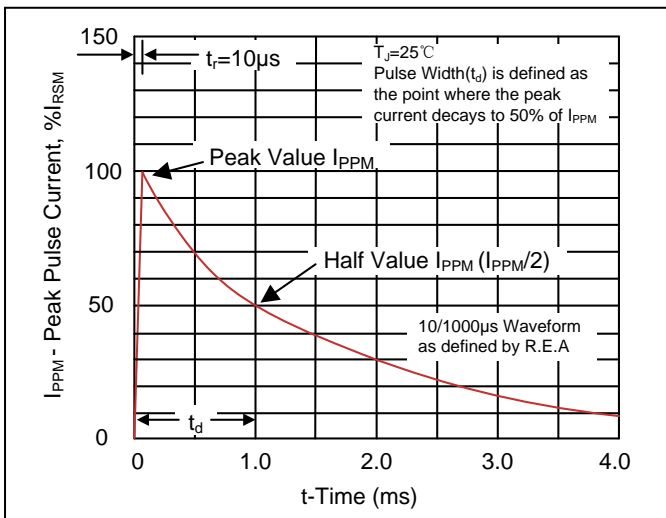


Figure 4. AC Line Protection Application

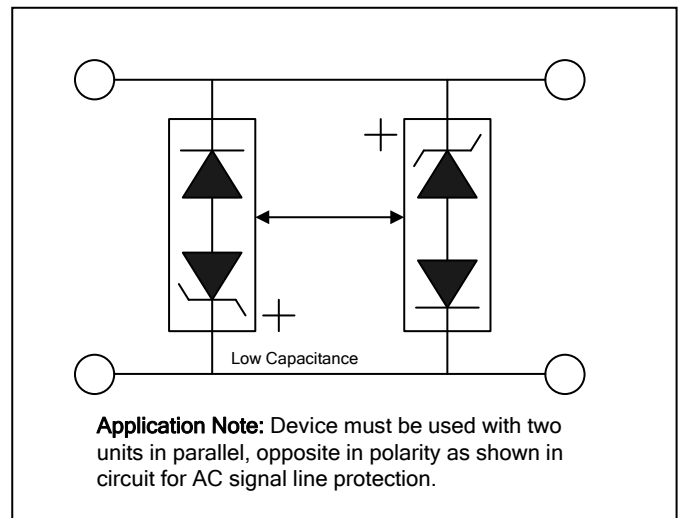
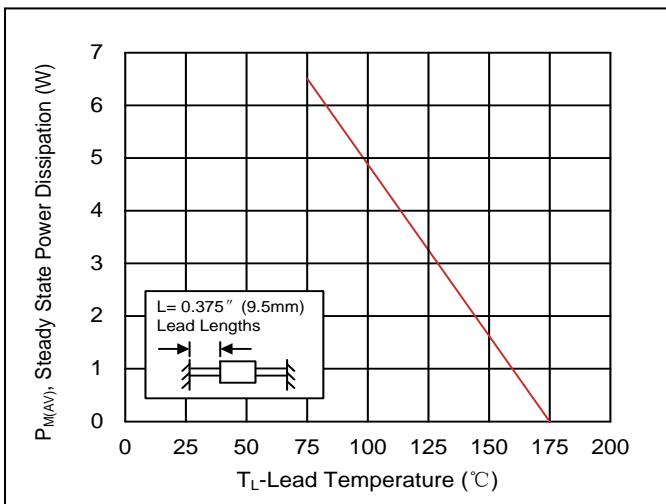
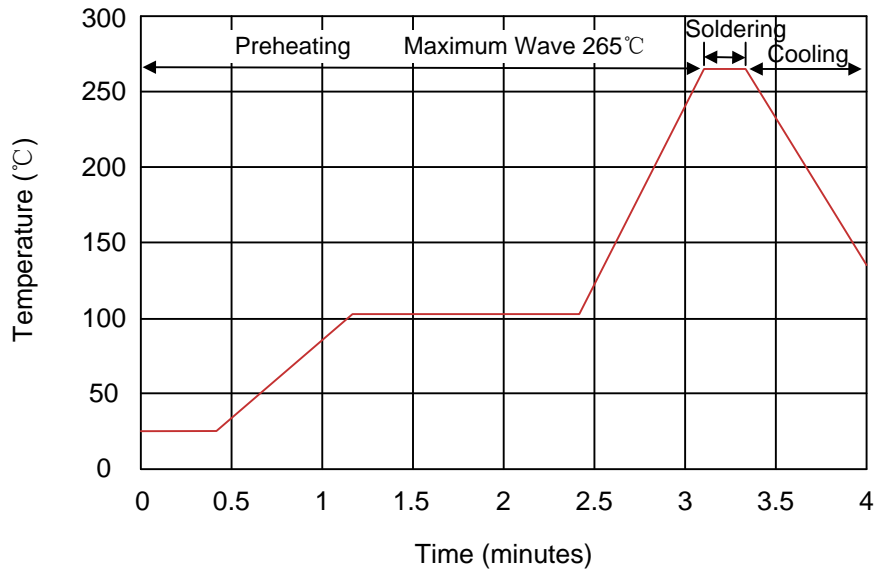


Figure 5. Steady State Power Dissipation Derating Curve



Recommended Soldering Conditions

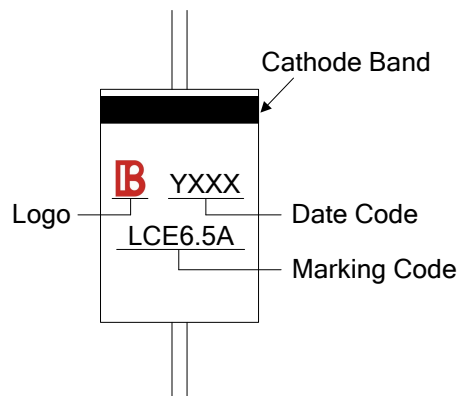
Wave Soldering



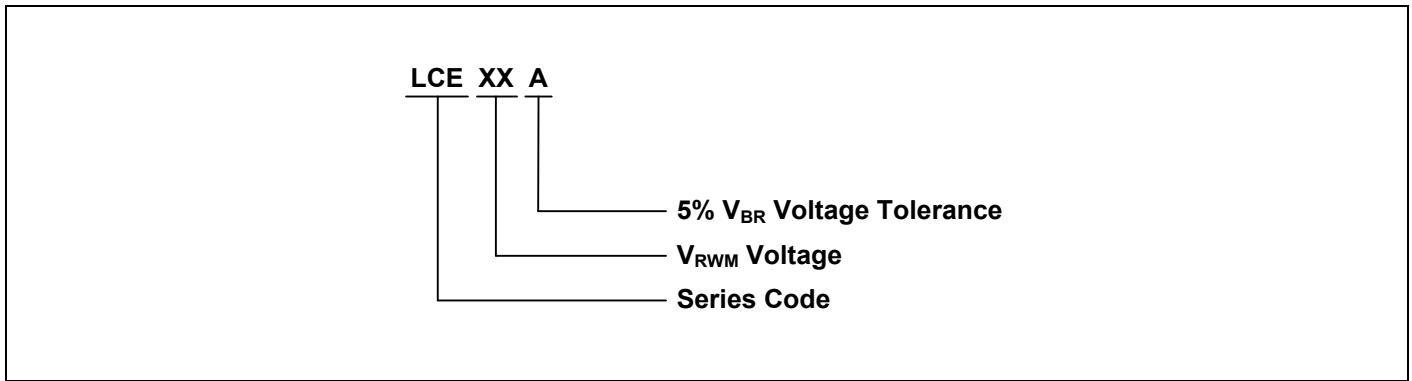
Recommended Conditions

Item	Conditions
Peak Temperature	265°C
Dipping Time	10 seconds
Soldering	1 time

Marking Code



Part Number Code



Ordering Code for Different Package

Box package: Add suffix “/B” at the end of the part number, such as LCE15A/B

Reel package: Add suffix “/TR13” at the end of the part number, such as LCE15A/TR13

Packaging

Symbol	Dimension (mm)
<p>Tape</p>	
A	10.0±0.5
B	53.0±1.0
Z	1.2Max.
T	6.0±0.4
E	0.8Max.
L1-L2	1.0Max.
<p>Box</p>	
L	250.0±5.0
W	75.0±5.0
H	114.0±5.0
Quantity: 1000PCS	
<p>Reel</p>	
D	330.0±3.0
D0	16.4±2.0
D1	86.0±2.0
W1	76.0±3.0
Quantity: 1200PCS	