

Silicon Avalanche Diodes

1500W Axial Leaded Transient Voltage Suppressors

RoHS LCE Series



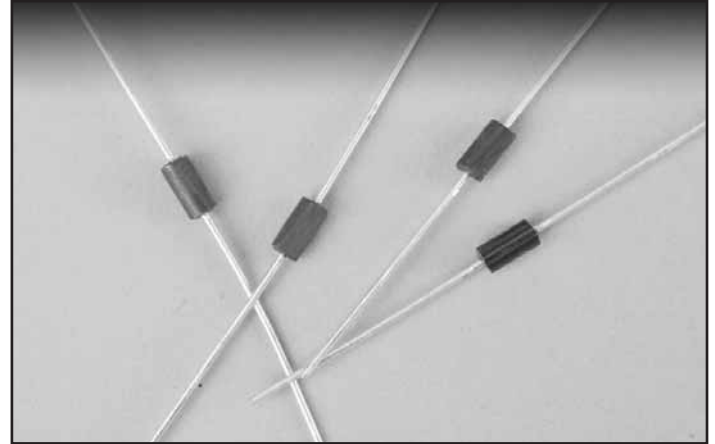
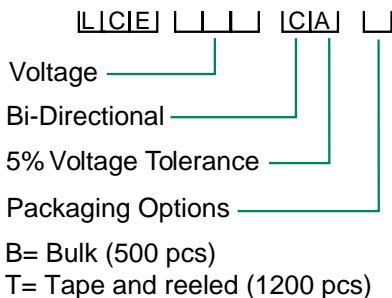
FEATURES

- RoHS compliant
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Glass passivated junction
- 1500W Peak Pulse Power capability with a 10/1000 μ s waveform, repetition rate (duty cycle):0.05%
- Excellent clamping capability
- Low incremental surge resistance
- Fast response time: typically less than 5.0ns from 0 Volts to V(BR)
- Ideal for data line applications
- Low capacitance
- High temperature soldering guaranteed: 265°C/10 seconds, 0.375" (9.5mm) lead length, 5lbs., (2.3kg) tension

Agency Approvals: Recognized under the Components Program of Underwriters Laboratories.

Agency File Number: E128662

ORDERING INFORMATION



MAXIMUM RATINGS AND CHARACTERISTICS

@25°C AMBIENT TEMPERATURE (unless otherwise noted)

| PARAMETER | SYMBOL | VALUE | UNIT |
|--|-----------------------------------|-------------|-------|
| Peak pulse power Dissipation with a 10/1000 μ s waveform (note 1, FIG.1) | P _{PPM} | Min 1500 | Watts |
| Steady State Power Dissipation, TL= 75 with at lead lengths 0.375" (9.5mm) | P _{M(AV)} | 5 | Watts |
| Peak power pulse surge current with a 10/1000 μ s waveform (FIG.3, note 1) | I _{PPM} | See Table 1 | Amps |
| Operating junction and Storage Temperature Range | T _j , T _{STG} | -55 to +175 | °C |

Notes:

1. Non-repetitive current pulse, per Fig.3 and derated above T_A= 25°C per Fig.2

Mechanical Specifications:

- Weight:** 0.045 ounce, 1.2 grams
Case: JEDEC DO-201 Molded Plastic over passivated junction
Mounting Position: Any
Polarity: Color band denotes cathode except Bidirectionals
Terminal: Solder Plated, solderable per MIL-STD-750, Method 2026
Standard Packaging: 16mm tape (EIA STD RS-481)

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SILICON DIODE ARRAYS

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ELECTRICAL SPECIFICATION @ Tamb 25°C

| Part Number | Reverse Stand off Voltage GE V_{WM} (Volts) | Breakdown Voltage V_{BR} (Volts) @ I_T | | Test Current I_T (mA) | Maximum Reverse Leakage I_R @ V_R (μ A) | Maximum Clamping Voltage V_C @ I_{PP} (Volts) | Maximum Peak Pulse Current I_{PP} (A) | Maximum Junction Capacitance @ 0 Volts (pF) | Working Inverse Blocking Voltage V_{WIB} (Volts) | Working Inverse Blocking Voltage V_{WIB} (Volts) | Peak Inverse Blocking Voltage V_{PIB} (Volts) |
|-------------|---|--|-------|-------------------------|--|---|---|---|--|--|---|
| | | MIN | MAX | | | | | | | | |
| LCE6.5A | 6.5 | 7.22 | 7.98 | 10 | 1000 | 11.2 | 100 | 100 | 75 | 1.0 | 100 |
| LCE7.0A | 7.0 | 7.78 | 8.60 | 10 | 500 | 12.0 | 100 | 100 | 75 | 1.0 | 100 |
| LCE7.5A | 7.5 | 8.33 | 9.21 | 10 | 250 | 12.9 | 100 | 100 | 75 | 1.0 | 100 |
| LCE8.0A | 8.0 | 8.89 | 9.83 | 1 | 100 | 13.6 | 100 | 100 | 75 | 1.0 | 100 |
| LCE8.5A | 8.5 | 9.44 | 10.40 | 1 | 50 | 14.4 | 100 | 100 | 75 | 1.0 | 100 |
| LCE9.0A | 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 | 13.50 | 1 | 5 | 18.2 | 82 | 100 | 75 | 1.0 | 100 |
| LCE12A | 12.0 | 13.30 | 14.70 | 1 | 5 | 19.9 | 75 | 100 | 75 | 1.0 | 100 |
| LCE13A | 13.0 | 14.40 | 15.90 | 1 | 5 | 21.5 | 70 | 100 | 75 | 1.0 | 100 |
| LCE14A | 14.0 | 15.60 | 17.20 | 1 | 5 | 23.2 | 65 | 100 | 75 | 1.0 | 100 |
| LCE15A | 15.0 | 16.70 | 18.50 | 1 | 5 | 24.4 | 61 | 100 | 75 | 1.0 | 100 |
| LCE16A | 16.0 | 17.80 | 19.70 | 1 | 5 | 26.0 | 57 | 100 | 75 | 1.0 | 100 |
| LCE17A | 17.0 | 18.90 | 20.90 | 1 | 5 | 27.6 | 54 | 100 | 75 | 1.0 | 100 |
| LCE18A | 18.0 | 20.00 | 22.10 | 1 | 5 | 29.2 | 51 | 100 | 75 | 1.0 | 100 |
| LCE20A | 20.0 | 22.20 | 24.50 | 1 | 5 | 32.4 | 46 | 100 | 75 | 1.0 | 100 |
| LCE22A | 22.0 | 24.40 | 26.90 | 1 | 5 | 35.5 | 42 | 100 | 75 | 1.0 | 100 |
| LCE24A | 24.0 | 26.70 | 29.50 | 1 | 5 | 38.9 | 39 | 100 | 75 | 1.0 | 100 |
| LCE26A | 26.0 | 28.90 | 31.90 | 1 | 5 | 42.1 | 36 | 100 | 75 | 1.0 | 100 |
| LCE28A | 28.0 | 31.10 | 34.40 | 1 | 5 | 45.5 | 33 | 100 | 75 | 1.0 | 100 |

Note: For parts without A, the VBR is \pm 10%.

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

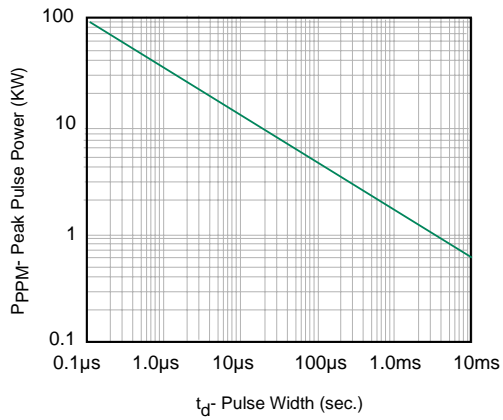


Fig. 1 Peak Pulse Power Rating

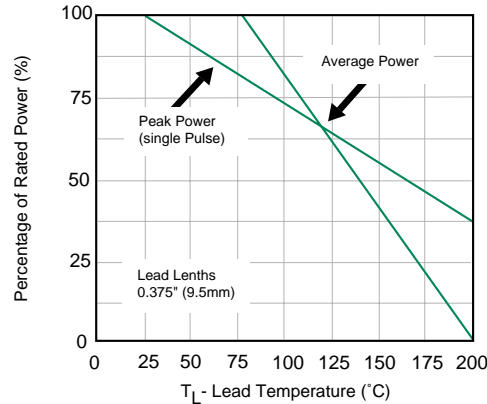


Fig. 2 Power Derating Curve

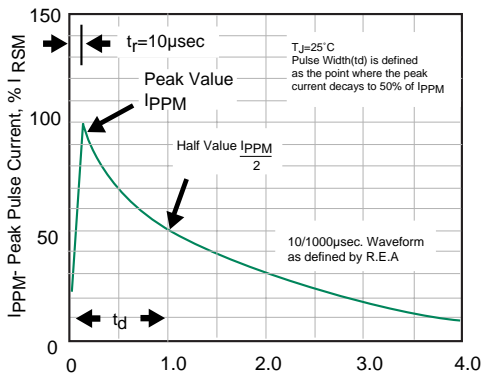
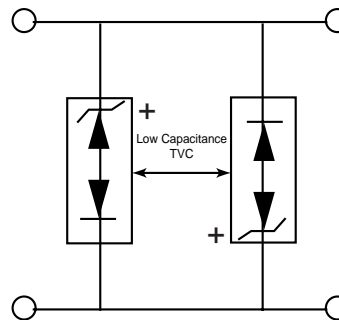


Fig. 3 Pulse Waveform



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

Fig. 4 AC Line Protection Application

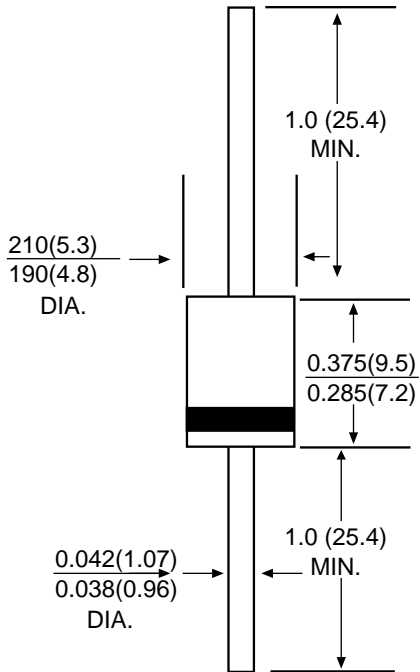
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Package Outline Dimensions

Case Style 1.5KE
(DO-201)



All dimensions in inches and (millimeters)