

MDE Semiconductor, Inc.

78-150 Calle Tampico, Unit 210, La Quinta, CA. U.S.A. 92253 Tel: 760-564-8656 • Fax: 760-564-2414

LCE SERIES

LOW CAPACITANCE TRANSIENT VOLTAGE SUPPRESSOR STAND-OFF VOLTAGE- 6.5 TO 28 Volts 1500 Watt Peak Pulse Power

FEATURES

- Plastic package has Underwriters Laboratory Flammability Classification 94 V-O
- Glass passivated junction
- 1500W Peak Pulse Power capability on 10/1000 μ s waveform
- Glass passivated junction
- Low incremental surge resistance
- Excellent clamping capability
- Repetition rate (duty cycle): 0.05%
- Fast response time: typically less than 5.0 ns from 0 volts to V(BV)
- Ideal for data line applications
- High temperature soldering guaranteed: 265°C/10 seconds/ .375", (9.5mm) lead length, 5lbs., (2.3kg) tension

MECHANICAL DATA

Case: JEDEC DO-201 Molded plastic over glass passivated junction

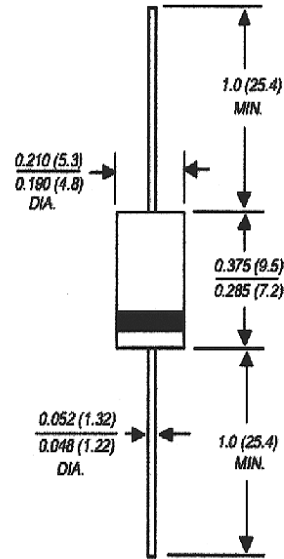
Terminals: Solder plated axial leads, solderable per MIL-STD-750, Method 2026

Polarity: Color band denoted positive end (cathode) except Bipolar

Mounting Position: Any

Weight: 0.045 ounces, 1.2 grams

DO-201



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

| RATING | SYMBOL | VALUE | UNITS |
|--|-----------------------------------|--------------|-------|
| Peak Pulse Power Dissipation on 10/1000 μ s waveform (NOTE 1, Fig.1) | P _{ppm} | Minimum 1500 | Watts |
| Peak Pulse Current of on 10/1000 μ s waveform (Note 1, Fig 3) | I _{ppm} | SEE TABLE 1 | Amps |
| Steady State Power Dissipation at T _L = 75°C Lead lengths .375", 9.5mm | P _{m(AV)} | 5.0 | Watts |
| Operatings and Storage Temperature Range | T _j , T _{stg} | -65 +175 | °C |

NOTES:

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

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RATING AND CHARACTERISTIC CURVES LCE6.5 THRU LCE28A

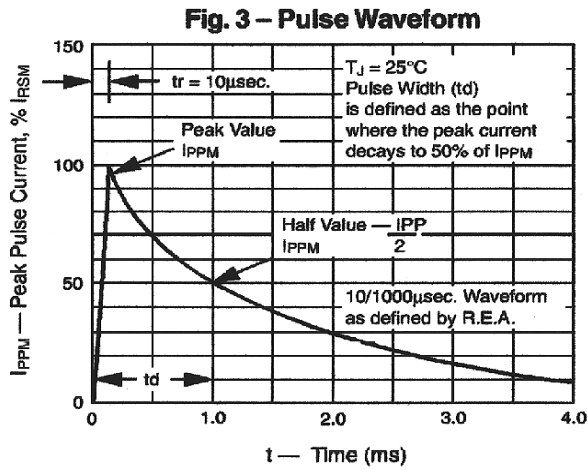
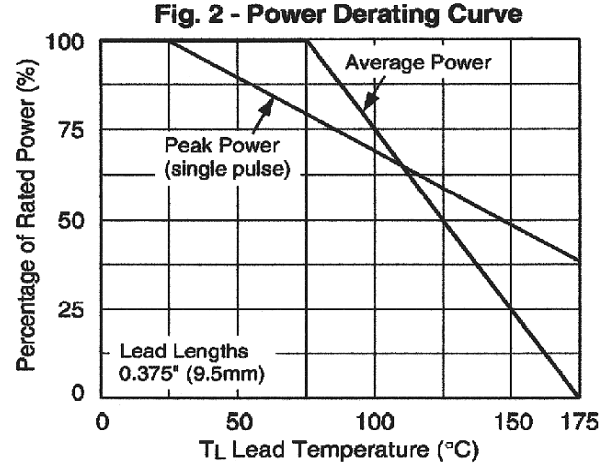
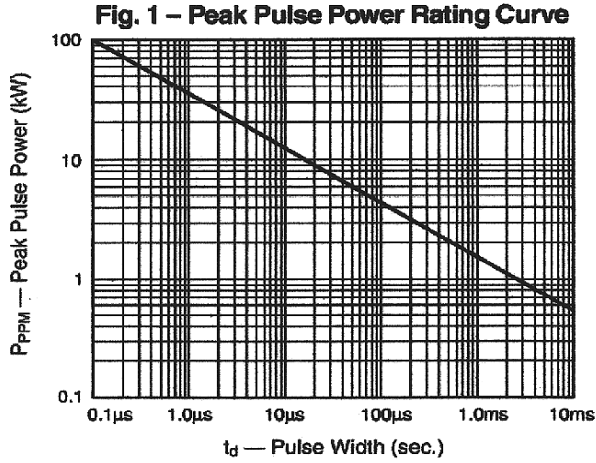
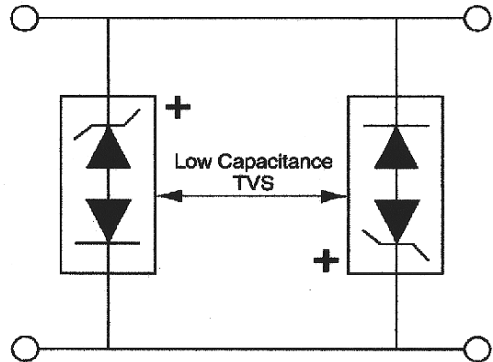


Fig. 4 - AC Line Protection Application



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

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1500 Watt Low Capacitance TVS

| PART NUMBER | STANDOFF VOLTAGE VWM (V) | BREAKDOWN VOLTAGE VBR (V) MIN./MAX. @ IT | MAXIMUM REVERSE LEAKAGE @ VWM ID(μA) | TEST CURRENT (It) mA | MAXIMUM CLAMPING VOLTAGE @Ipp Vc (V) | PEAK PULSE CURRENT IppM (A) | MAXIMUM JUNCTION CAPACITANCE @ 0 VOLTS (pF) | WORKING INVERSE BLOCKING VOLTAGE VWIB VOLTS | MAXIMUM INVERSE BLOCKING LEAKAGE CURRENT @ VWIB ID(mA) | MINIMUM PEAK INVERSE BLOCKING VOLTAGE VPIB VOLTS |
|-------------|--------------------------|--|--------------------------------------|----------------------|--------------------------------------|-----------------------------|---|---|--|--|
| LCE6.5 | 6.50 | 7.22/8.82 | 1000 | 10 | 12.3 | 100.0 | 100 | 75 | 1 | 100 |
| LCE6.5A | 6.50 | 7.22/7.98 | 1000 | 10 | 11.2 | 100.0 | 100 | 75 | 1 | 100 |
| LCE7.0 | 7.00 | 7.78/9.51 | 500 | 10 | 13.3 | 100.0 | 100 | 75 | 1 | 100 |
| LCE7.0A | 7.00 | 7.78/8.6 | 500 | 10 | 12.0 | 100.0 | 100 | 75 | 1 | 100 |
| LCE7.5 | 7.50 | 8.33/10.2 | 250 | 10 | 14.3 | 100.0 | 100 | 75 | 1 | 100 |
| LCE7.5A | 7.50 | 8.33/9.21 | 250 | 10 | 12.9 | 100.0 | 100 | 75 | 1 | 100 |
| LCE8.0 | 8.00 | 8.89/10.9 | 100 | 1 | 15.0 | 100.0 | 100 | 75 | 1 | 100 |
| LCE8.0A | 8.00 | 8.89/9.83 | 100 | 1 | 13.6 | 100.0 | 100 | 75 | 1 | 100 |
| LCE8.5 | 8.50 | 9.44/11.5 | 50 | 1 | 15.9 | 94.0 | 100 | 75 | 1 | 100 |
| LCE8.5A | 8.50 | 9.44/10.4 | 50 | 1 | 14.4 | 100.0 | 100 | 75 | 1 | 100 |
| LCE9.0 | 9.00 | 10/12.2 | 10 | 1 | 16.9 | 89.0 | 100 | 75 | 1 | 100 |
| LCE9.0A | 9.00 | 10/11.1 | 10 | 1 | 15.4 | 97.0 | 100 | 75 | 1 | 100 |
| LCE10 | 10.00 | 11.1/13.6 | 5 | 1 | 18.8 | 80.0 | 100 | 75 | 1 | 100 |
| LCE10A | 10.00 | 11.1/12.3 | 5 | 1 | 17.0 | 88.0 | 100 | 75 | 1 | 100 |
| LCE11 | 11.00 | 12.2/14.9 | 5 | 1 | 20.1 | 74.0 | 100 | 75 | 1 | 100 |
| LCE11A | 11.00 | 12.2/13.5 | 5 | 1 | 18.2 | 82.0 | 100 | 75 | 1 | 100 |
| LCE12 | 12.00 | 13.3/16.3 | 5 | 1 | 22.0 | 68.0 | 100 | 75 | 1 | 100 |
| LCE12A | 12.00 | 13.3/14.7 | 5 | 1 | 19.9 | 75.0 | 100 | 75 | 1 | 100 |
| LCE13 | 13.00 | 14.4/17.6 | 5 | 1 | 23.8 | 63.0 | 100 | 75 | 1 | 100 |
| LCE13A | 13.00 | 14.4/15.9 | 5 | 1 | 21.5 | 70.0 | 100 | 75 | 1 | 100 |
| LCE14 | 14.00 | 15.6/19.1 | 5 | 1 | 25.8 | 58.0 | 100 | 75 | 1 | 100 |
| LCE14A | 14.00 | 15.6/17.2 | 5 | 1 | 23.2 | 65.0 | 100 | 75 | 1 | 100 |
| LCE15 | 15.00 | 16.7/20.4 | 5 | 1 | 26.9 | 56.0 | 100 | 75 | 1 | 100 |
| LCE15A | 15.00 | 16.7/18.5 | 5 | 1 | 24.4 | 61.0 | 100 | 75 | 1 | 100 |
| LCE16 | 16.00 | 17.8/21.8 | 5 | 1 | 28.8 | 52.0 | 100 | 75 | 1 | 100 |
| LCE16A | 16.00 | 17.8/19.7 | 5 | 1 | 26.0 | 57.0 | 100 | 75 | 1 | 100 |
| LCE17 | 17.00 | 18.9/23.1 | 5 | 1 | 30.5 | 49.0 | 100 | 75 | 1 | 100 |
| LCE17A | 17.00 | 18.9/20.9 | 5 | 1 | 27.6 | 54.0 | 100 | 75 | 1 | 100 |
| LCE18 | 18.00 | 20/24.4 | 5 | 1 | 32.2 | 46.0 | 100 | 75 | 1 | 100 |
| LCE18A | 18.00 | 20/22.1 | 5 | 1 | 29.2 | 51.0 | 100 | 75 | 1 | 100 |
| LCE20 | 20.00 | 22.2/27.1 | 5 | 1 | 35.8 | 42.0 | 100 | 75 | 1 | 100 |
| LCE20A | 20.00 | 22.2/24.5 | 5 | 1 | 32.4 | 46.0 | 100 | 75 | 1 | 100 |
| LCE22 | 22.00 | 24.4/29.8 | 5 | 1 | 39.4 | 38.0 | 100 | 75 | 1 | 100 |
| LCE22A | 22.00 | 24.4/26.9 | 5 | 1 | 35.5 | 42.0 | 100 | 75 | 1 | 100 |
| LCE24 | 24.00 | 26.7/32.6 | 5 | 1 | 43.0 | 35.0 | 100 | 75 | 1 | 100 |
| LCE24A | 24.00 | 26.7/29.5 | 5 | 1 | 38.9 | 39.0 | 100 | 75 | 1 | 100 |
| LCE26 | 26.00 | 28.9/35.3 | 5 | 1 | 46.6 | 32.0 | 100 | 75 | 1 | 100 |
| LCE26A | 26.00 | 28.9/31.9 | 5 | 1 | 42.1 | 36.0 | 100 | 75 | 1 | 100 |
| LCE28 | 28.00 | 31.1/38 | 5 | 1 | 50.1 | 30.0 | 100 | 75 | 1 | 100 |
| LCE28A | 28.00 | 31.1/34.4 | 5 | 1 | 45.5 | 33.0 | 100 | 75 | 1 | 100 |