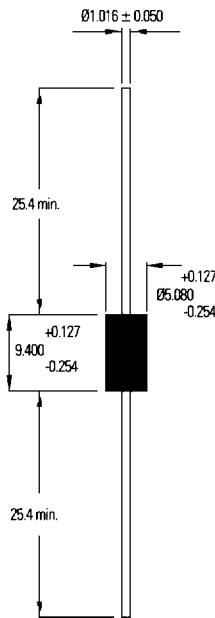
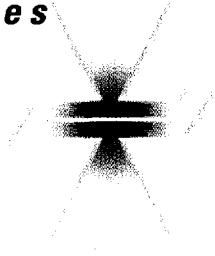
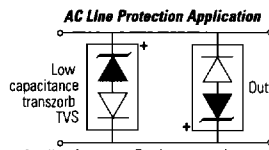


**LCE Series**

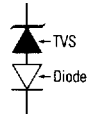


All dimensions in mm



Application note: Devices must be used with two units in parallel, opposite in polarity, as shown in circuit for bi-directional line.

Schematic



**Invisible Protection**

When no problems exist, Crydom TVS Diodes are totally invisible to the circuits they're protecting. But when potentially damaging transients occur, they provide high-speed "clamping" to prevent damage – and then return to their electronically invisible state.

**LCE SERIES (1500 WATT) AXIAL TRANSIENT VOLTAGE SUPPRESSORS (LOW CAPACITANCE DEVICE)**

Designed for data line interface circuit protection, the LCE series offers low shunt capacitance to prevent signal degradation. These devices can be used across transmission lines with signal levels up to 100 MHz. For bi-directional applications, two LCE suppressors are required, connected in anti-parallel with respect to each other, across the circuit to be protected.

**FEATURES**

- Glass passivated junction
- Low capacitance: 100 pF (max.)
- Stand-off voltage range: 6.5-90 V
- Low zener impedance
- Uni-directional
- 100% surge tested

**MAXIMUM RATINGS**

- Peak pulse power (PPK): 1500 watts (10 X 1000 µs)
- 5 watt steady state
- Response time: 1 X 10<sup>-12</sup> s (theoretical)
- Forward surge rating: 70 A, 8.3 ms half sine wave (uni-directional devices only)
- Operating and storage temperature: -55°C to +175°C

**MECHANICAL CHARACTERISTICS**

- Case: Molded plastic over glass passivated junction
- Terminals: Axial leads, solderable per MIL-STD-202 Method 208
- Marking: Cathode band, device code, logo
- Weight: 1.5 grams (approx.)

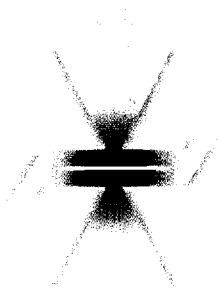
## Transient Voltage Suppression (TVS) Diodes

### LCE Series

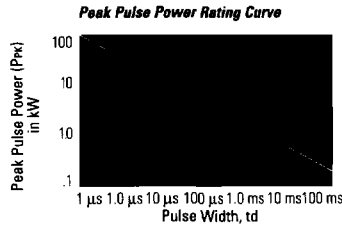
PART NUMBER	REVERSE STAND-OFF VOLTAGE $V_R$ (V)	BREAKDOWN VOLTAGE $V_{BR}$ (V) @ $I_T$			MAXIMUM REVERSE LEAKAGE $I_R$ @ $V_R$ ( $\mu$ A)	MAXIMUM CLAMPING VOLTAGE $V_C$ @ $I_{PP}$ ( $\mu$ A)	MAXIMUM PULSE CURRENT $I_{PP}$ (A)	CAPACITANCE @ 0 V pF	WORKING INVERSE BLOCKING VOLTAGE $V_{WIB}$ (V)	INVERSE BLOCKING LEAKAGE CURRENT @ $I_{IB}$ @ $V_{WIB}$ ( $\mu$ A)	PEAK INVERSE BLOCKING VOLTAGE $V_{PIB}$ (V)
		MIN.	MAX.	(mA)							
LCE6.5	6.5	7.22	8.82	10.0	1000.0	12.3	100.0	100.0	75.0	1.0	100.0
LCE6.5A	6.5	7.22	7.98	10.0	1000.0	11.2	100.0	100.0	75.0	1.0	100.0
LCE7.0	7.0	7.78	9.51	10.0	500.0	13.3	100.0	100.0	75.0	1.0	100.0
LCE7.0A	7.0	7.78	8.60	10.0	500.0	12.0	100.0	100.0	75.0	1.0	100.0
LCE7.5	7.5	8.33	10.2	10.0	250.0	14.3	100.0	100.0	75.0	1.0	100.0
LCE7.5A	7.5	8.33	9.21	10.0	250.0	12.9	100.0	100.0	75.0	1.0	100.0
LCE8.0	8.0	8.89	10.9	1.0	100.0	15.0	100.0	100.0	75.0	1.0	100.0
LCE8.0A	8.0	8.89	9.83	1.0	100.0	13.6	100.0	100.0	75.0	1.0	100.0
LCE8.5	8.5	9.44	11.5	1.0	50.0	15.9	94.0	100.0	75.0	1.0	100.0
LCE8.5A	8.5	9.44	10.4	1.0	50.0	14.4	100.0	100.0	75.0	1.0	100.0
LCE9.0	9.0	10.0	12.2	1.0	10.0	16.9	89.0	100.0	75.0	1.0	100.0
LCE9.0A	9.0	10.0	11.1	1.0	10.0	15.4	97.0	100.0	75.0	1.0	100.0
LCE10	10.0	11.1	13.6	1.0	5.0	18.8	80.0	100.0	75.0	1.0	100.0
LCE10A	10.0	11.1	12.3	1.0	5.0	17.0	88.0	100.0	75.0	1.0	100.0
LCE11	11.0	12.2	14.9	1.0	5.0	20.1	74.0	100.0	75.0	1.0	100.0
LCE11A	11.0	12.2	13.5	1.0	5.0	18.2	82.0	100.0	75.0	1.0	100.0
LCE12	12.0	13.3	16.3	1.0	5.0	22.0	68.0	100.0	75.0	1.0	100.0
LCE12A	12.0	13.3	14.7	1.0	5.0	19.9	75.0	100.0	75.0	1.0	100.0
LCE13	13.0	14.4	17.6	1.0	5.0	23.8	63.0	100.0	75.0	1.0	100.0
LCE13A	13.0	14.4	15.9	1.0	5.0	21.5	70.0	100.0	75.0	1.0	100.0
LCE14	14.0	15.6	19.1	1.0	5.0	25.8	58.0	100.0	75.0	1.0	100.0
LCE14A	14.0	15.6	17.2	1.0	5.0	23.2	65.0	100.0	75.0	1.0	100.0
LCE15	15.0	16.7	20.4	1.0	5.0	26.9	56.0	100.0	75.0	1.0	100.0
LCE15A	15.0	16.7	18.5	1.0	5.0	24.4	61.0	100.0	75.0	1.0	100.0
LCE16	16.0	17.8	21.8	1.0	5.0	28.8	52.0	100.0	75.0	1.0	100.0
LCE16A	16.0	17.8	19.7	1.0	5.0	26.0	57.0	100.0	75.0	1.0	100.0
LCE17	17.0	18.6	23.1	1.0	5.0	30.5	49.0	100.0	75.0	1.0	100.0
LCE17A	17.0	18.6	20.9	1.0	5.0	27.6	54.0	100.0	75.0	1.0	100.0
LCE18	18.0	20.0	24.4	1.0	5.0	32.2	46.0	100.0	75.0	1.0	100.0
LCE18A	18.0	20.0	22.1	1.0	5.0	29.2	51.0	100.0	75.0	1.0	100.0
LCE20	20.0	22.2	27.1	1.0	5.0	35.8	42.0	100.0	75.0	1.0	100.0
LCE20A	20.0	22.2	24.5	1.0	5.0	32.4	46.0	100.0	75.0	1.0	100.0
LCE22	22.0	24.4	29.8	1.0	5.0	39.4	38.0	100.0	75.0	1.0	100.0
LCE22A	22.0	24.4	26.9	1.0	5.0	35.5	42.0	100.0	75.0	1.0	100.0
LCE24	24.0	26.7	32.6	1.0	5.0	43.0	35.0	100.0	75.0	1.0	100.0
LCE24A	24.0	26.7	29.5	1.0	5.0	38.9	39.0	100.0	75.0	1.0	100.0

Note: Suffix "A" denotes 5% tolerance device. No suffix denotes 10% tolerance device. For bi-directional protection, two TVS devices must be used when testing. Test TVS in avalanche direction. Do not pulse in forward direction. Electrical specifications @ 25°C.

PART NUMBER	REVERSE STAND-OFF VOLTAGE $V_R$ (V)	BREAKDOWN VOLTAGE $V_{BR}$ (V) @ $I_T$			MAXIMUM REVERSE LEAKAGE $I_R$ @ $V_R$ ( $\mu$ A)	MAXIMUM CLAMPING VOLTAGE $V_C$ @ $I_{PP}$ ( $\mu$ A)	MAXIMUM PEAK PULSE CURRENT $I_{PP}$ (A)	CAPACITANCE @ 0 V pF	WORKING INVERSE BLOCKING VOLTAGE $V_{WIB}$ (V)	INVERSE BLOCKING LEAKAGE CURRENT @ $I_{IB}$ @ $V_{WIB}$ ( $\mu$ A)	PEAK INVERSE BLOCKING VOLTAGE $V_{PIB}$ (V)
		MIN.	MAX.	(mA)							
LCE26	26.0	28.9	35.3	1.0	5.0	46.6	32.0	100.0	75.0	1.0	100.0
LCE26A	26.0	28.9	31.9	1.0	5.0	42.1	36.0	100.0	75.0	1.0	100.0
LCE28	28.0	31.1	38.0	1.0	5.0	50.1	30.0	100.0	75.0	1.0	100.0
LCE28A	28.0	31.1	34.4	1.0	5.0	45.5	33.0	100.0	75.0	1.0	100.0
LCE30	30.0	33.3	40.7	1.0	5.0	53.5	28.0	100.0	75.0	1.0	100.0
LCE30A	30.0	33.3	36.8	1.0	5.0	48.4	31.0	100.0	75.0	1.0	100.0
LCE33	33.0	36.7	44.9	1.0	5.0	59.0	25.4	100.0	75.0	1.0	100.0
LCE33A	33.0	36.7	40.6	1.0	5.0	53.3	28.1	100.0	75.0	1.0	100.0
LCE36	36.0	40.0	48.9	1.0	5.0	64.3	23.3	100.0	75.0	1.0	100.0
LCE36A	36.0	40.0	44.2	1.0	5.0	58.1	25.8	100.0	75.0	1.0	100.0
LCE40	40.0	44.4	54.3	1.0	5.0	71.4	21.0	100.0	75.0	1.0	100.0
LCE40A	40.0	44.4	49.1	1.0	5.0	64.5	23.3	100.0	75.0	1.0	100.0
LCE43	43.0	47.8	58.4	1.0	5.0	76.7	19.5	100.0	150.0	1.0	200.0
LCE43A	43.0	47.8	52.8	1.0	5.0	69.4	21.6	100.0	150.0	1.0	200.0
LCE45	45.0	50.0	61.1	1.0	5.0	80.3	18.7	100.0	150.0	1.0	200.0
LCE45A	45.0	50.0	55.3	1.0	5.0	72.7	20.6	100.0	150.0	1.0	200.0
LCE48	48.0	53.3	65.1	1.0	5.0	85.5	17.5	100.0	150.0	1.0	200.0
LCE48A	48.0	53.3	58.9	1.0	5.0	77.4	19.4	100.0	150.0	1.0	200.0
LCE51	51.0	56.7	69.3	1.0	5.0	91.1	16.5	100.0	150.0	1.0	200.0
LCE51A	51.0	56.7	62.7	1.0	5.0	82.4	18.2	100.0	150.0	1.0	200.0
LCE54	54.0	60.0	73.3	1.0	5.0	96.3	15.6	100.0	150.0	1.0	200.0
LCE54A	54.0	60.0	66.3	1.0	5.0	87.1	17.2	100.0	150.0	1.0	200.0
LCE58	58.0	64.4	78.7	1.0	5.0	103.0	14.6	100.0	150.0	1.0	200.0
LCE58A	58.0	64.4	71.2	1.0	5.0	93.6	16.0	100.0	150.0	1.0	200.0
LCE60	60.0	66.7	81.5	1.0	5.0	107.0	14.0	90.0	150.0	1.0	200.0
LCE60A	60.0	66.7	73.7	1.0	5.0	96.8	15.5	90.0	150.0	1.0	200.0
LCE64	64.0	71.1	86.9	1.0	5.0	114.0	13.2	90.0	150.0	1.0	200.0
LCE64A	64.0	71.1	78.6	1.0	5.0	103.0	14.6	90.0	150.0	1.0	200.0
LCE70	70.0	77.8	95.1	1.0	5.0	125.0	12.0	90.0	150.0	1.0	200.0
LCE70A	70.0	77.8	86.0	1.0	5.0	113.0	13.3	90.0	150.0	1.0	200.0
LCE75	75.0	83.3	102.0	1.0	5.0	134.0	11.2	90.0	150.0	1.0	200.0
LCE75A	75.0	83.3	91.1	1.0	5.0	121.0	12.4	90.0	150.0	1.0	200.0
LCE80	80.0	88.7	108.0	1.0	5.0	142.0	10.6	90.0	150.0	1.0	200.0
LCE80A	80.0	88.7	98.0	1.0	5.0	129.0	11.6	90.0	150.0	1.0	200.0
LCE90	90.0	100.0	122.0	1.0	5.0	160.0	9.4	90.0	300.0	1.0	200.0
LCE90A	90.0	100.0	111.0	1.0	5.0	146.0	10.3	90.0	300.0	1.0	200.0



**LCE Series**



**Specify Crydom**

...for these industry-leading components and products:

- **Solid State Relays**
  - Printed Circuit Board Mount
  - Panel Mount
  - DIN Rail Mount
- **Power Cubes**
- **I/O Modules**
- **Transient Voltage Suppression Components**
  - TVS Diodes
  - Thyristor Suppression Devices
  - Gas Discharge Tubes (GDT)
  - Zeners/Studs
  - Hybrid Arrester Devices

**Ordering Information**

For recommended applications and more information contact:

Sales: 1-877-502-5500

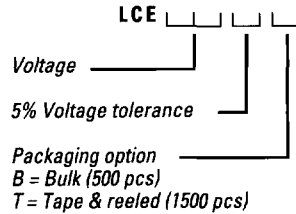
Technical support: 1-877-702-7700

Corporate Headquarters: 1-619-715-7200

Fax: 1-619-715-7280

E-mail: [sales@crydom.com](mailto:sales@crydom.com)

Website: [www.crydom.com](http://www.crydom.com)



FASTFAX Product Info: 1-888-267-9191

**About Crydom**

Over the years Crydom has become the supplier of choice for advanced, high-quality products like those featured here. It's the result of our teams of design and production engineers – material, production control, and quality assurance experts, and more – working seamlessly together to create, produce, and deliver superior components and products that satisfy the most demanding environmental and performance requirements. We focus on timely delivery and competitive pricing aimed at meeting your needs and helping you succeed in today's fast-paced, fast-changing global markets.

**Crydom**

9525 Chesapeake Drive  
San Diego, CA 92123 USA



©1998 Crydom  
Specifications subject to change without notice.