

# MDE Semiconductor, Inc.

201 Shipyard Way, Unit C, Newport Beach, CA., USA 92663 Tel : 760-564-8656 • Fax : 760-564-2414  
1-800-831-4881 Email: sales@mdesemiconductor.com Web: www.mdesemiconductor.com

## MLCE SERIES

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

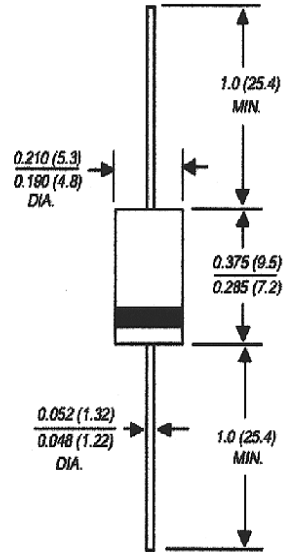
#### FEATURES

- Plastic package has Underwriters Laboratory Flammability Classification 94 V-O
- Glass passivated junction
- 1500W Peak Pulse Power capability on 10/1000  $\mu$ 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 $\mu$ s waveform (NOTE 1, Fig.1)	$P_{PPM}$	Minimum 1500	Watts
Peak Pulse Current of on 10/1000 $\mu$ s waveform (Note 1, Fig 3)	$I_{PPM}$	SEE TABLE 1	Amps
Steady State Power Dissipation at TL = 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 Ta=25 °C per Fig.2.

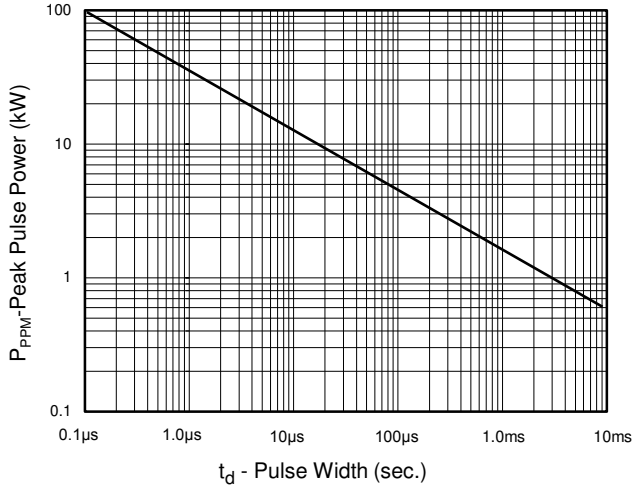
Certified RoHS Compliant  
UL File # E223026

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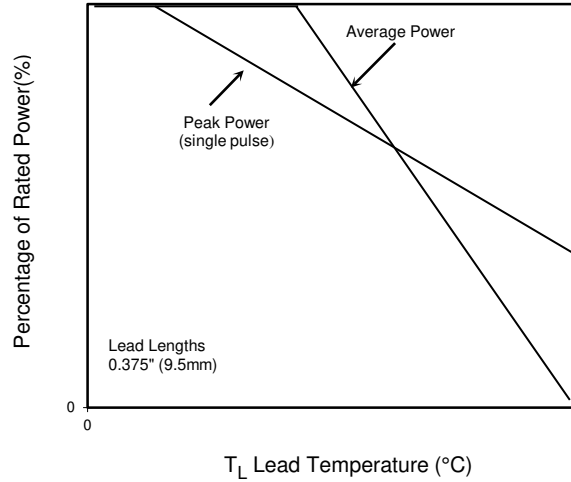
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## RATING AND CHARACTERISTIC CURVES MLCE6.5 THRU MLCE28A

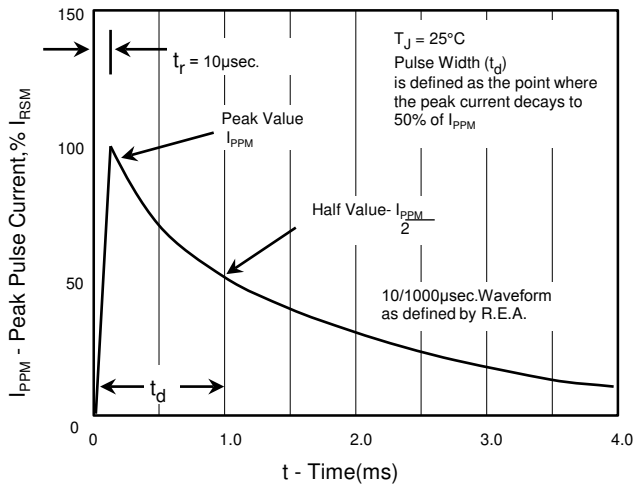
**Fig. 1 - Peak Pulse Power Rating Curve**



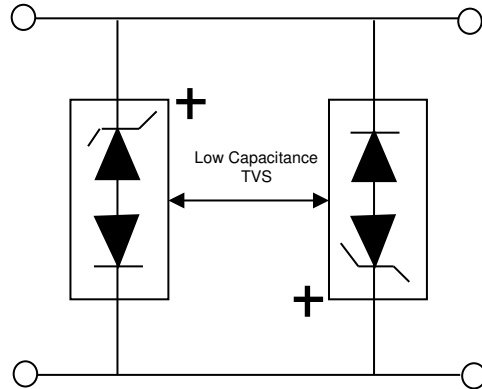
**Fig.2-Power Derating Curve**



**Fig.3 - Pulse Waveform**



**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
MLCE6.5	6.50	7.22/8.82	1000	10	12.3	100.0	100	75	1	100
MLCE6.5A	6.50	7.22/7.98	1000	10	11.2	100.0	100	75	1	100
MLCE7.0	7.00	7.78/9.51	500	10	13.3	100.0	100	75	1	100
MLCE7.0A	7.00	7.78/8.6	500	10	12.0	100.0	100	75	1	100
MLCE7.5	7.50	8.33/10.2	250	10	14.3	100.0	100	75	1	100
MLCE7.5A	7.50	8.33/9.21	250	10	12.9	100.0	100	75	1	100
MLCE8.0	8.00	8.89/10.9	100	1	15.0	100.0	100	75	1	100
MLCE8.0A	8.00	8.89/9.83	100	1	13.6	100.0	100	75	1	100
MLCE8.5	8.50	9.44/11.5	50	1	15.9	94.0	100	75	1	100
MLCE8.5A	8.50	9.44/10.4	50	1	14.4	100.0	100	75	1	100
MLCE9.0	9.00	10/12.2	10	1	16.9	89.0	100	75	1	100
MLCE9.0A	9.00	10/11.1	10	1	15.4	97.0	100	75	1	100
MLCE10	10.00	11.1/13.6	5	1	18.8	80.0	100	75	1	100
MLCE10A	10.00	11.1/12.3	5	1	17.0	88.0	100	75	1	100
MLCE11	11.00	12.2/14.9	5	1	20.1	74.0	100	75	1	100
MLCE11A	11.00	12.2/13.5	5	1	18.2	82.0	100	75	1	100
MLCE12	12.00	13.3/16.3	5	1	22.0	68.0	100	75	1	100
MLCE12A	12.00	13.3/14.7	5	1	19.9	75.0	100	75	1	100
MLCE13	13.00	14.4/17.6	5	1	23.8	63.0	100	75	1	100
MLCE13A	13.00	14.4/15.9	5	1	21.5	70.0	100	75	1	100
MLCE14	14.00	15.6/19.1	5	1	25.8	58.0	100	75	1	100
MLCE14A	14.00	15.6/17.2	5	1	23.2	65.0	100	75	1	100
MLCE15	15.00	16.7/20.4	5	1	26.9	56.0	100	75	1	100
MLCE15A	15.00	16.7/18.5	5	1	24.4	61.0	100	75	1	100
MLCE16	16.00	17.8/21.8	5	1	28.8	52.0	100	75	1	100
MLCE16A	16.00	17.8/19.7	5	1	26.0	57.0	100	75	1	100
MLCE17	17.00	18.9/23.1	5	1	30.5	49.0	100	75	1	100
MLCE17A	17.00	18.9/20.9	5	1	27.6	54.0	100	75	1	100
MLCE18	18.00	20/24.4	5	1	32.2	46.0	100	75	1	100
MLCE18A	18.00	20/22.1	5	1	29.2	51.0	100	75	1	100
MLCE20	20.00	22.2/27.1	5	1	35.8	42.0	100	75	1	100
MLCE20A	20.00	22.2/24.5	5	1	32.4	46.0	100	75	1	100
MLCE22	22.00	24.4/29.8	5	1	39.4	38.0	100	75	1	100
MLCE22A	22.00	24.4/26.9	5	1	35.5	42.0	100	75	1	100
MLCE24	24.00	26.7/32.6	5	1	43.0	35.0	100	75	1	100
MLCE24A	24.00	26.7/29.5	5	1	38.9	39.0	100	75	1	100
MLCE26	26.00	28.9/35.3	5	1	46.6	32.0	100	75	1	100
MLCE26A	26.00	28.9/31.9	5	1	42.1	36.0	100	75	1	100
MLCE28	28.00	31.1/38	5	1	50.1	30.0	100	75	1	100
MLCE28A	28.00	31.1/34.4	5	1	45.5	33.0	100	75	1	100

Certified RoHS Compliant  
UL File # E223026