

Microsemi Corp.
The diode experts

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LC6.5 thru LC170A LOW CAPACITANCE

FEATURES

This series employs a standard TAZ in series with a rectifier with the same transient capabilities as the TAZ. The rectifier is used to reduce the effective capacitance up thru 100 MHz with a minimum amount of signal loss or deformation. The low capacitance TAZ may be applied directly across the signal line to prevent induced transients from lightning, power interruptions, or static discharge. If bipolar transient capability is required, two low-capacitance TAZ must be used in parallel, opposite in polarity for complete AC protection.

- 1500 WATTS OF PEAK PULSE POWER DISSIPATION AT 25°C AND 10 x 1000 μ s
- AVAILABLE IN RANGES FROM 6.5-200V
- LOW CAPACITANCE AC SIGNAL PROTECTION

MAXIMUM RATINGS

1500 Watts of Peak Pulse Power dissipation at 25°C
t_{clamping} (0 volts to V_(BR) min): Less than 5 x 10⁻⁹ seconds
Operating and Storage temperatures: -65° to +175°C
Steady State power dissipation: 1.0 W
Repetition Rate (duty cycle): .01%

ELECTRICAL CHARACTERISTICS

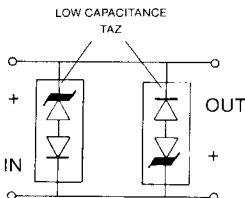
Clamping Factor: 1.4 @ Full Rated power
1.30 @ 50% Rated power

Clamping Factor: The ratio of the actual V_C (Clamping Voltage) to the actual V_(BR) (Breakdown Voltage) as measured on a specific device.

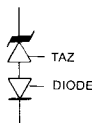
NOTE: When pulse testing, test in Avalanche direction. DO NOT pulse in forward direction.

APPLICATION

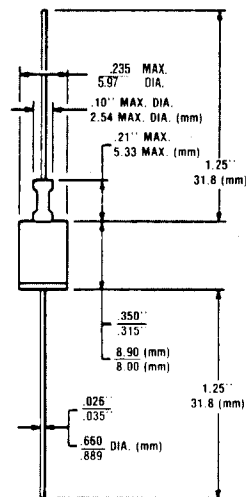
Devices must be used with two units in parallel, opposite in polarity, as shown in circuit for AC Signal Line protection:



SCHEMATIC



TRANSIENT ABSORPTION ZENER



MECHANICAL CHARACTERISTICS

CASE: DO-13, welded, hermetically sealed metal and glass.

FINISH: All external surfaces are corrosion resistant and leads solderable.

POLARITY: Cathode connected to case and marked.

WEIGHT: 1.4 grams (Appx.)

MOUNTING POSITION: Any

LC6.5 thru LC170A

ELECTRICAL CHARACTERISTICS @ 25°C

| MODULE PART NUMBER | REVERSE STAND OFF VOLTAGE V _{WM} VOLTS | BREAKDOWN VOLTAGE V _(BR) VOLTS | | @ I _T mA | MAXIMUM REVERSE LEAKAGE I _R A | MAXIMUM CLAMPING VOLTAGE V _{CP} VOLTS | MAXIMUM PEAK PULSE CURRENT I _{PP} 10 x 1000 AMPS | CAPACITANCE @ 0 V _C pF | V _{WM} INVERSE BLOCKING VOLTAGE VOLTS | I _{WM} INVERSE BLOCKING CURRENT mA | V _{WM} PEAK INVERSE BLOCKING VOLTAGE VOLTS |
|--------------------------|-------------------------------------------------------------|----------------------------------------------------|-------|------------------------|------------------------------------------------------|------------------------------------------------------------|--------------------------------------------------------------------------|-----------------------------------------|------------------------------------------------------------|---------------------------------------------------------|--------------------------------------------------------------------|
| | | Min. | Max. | | | | | | | | |
| LC6.5 | 6.5 | 7.22 | 8.82 | 10 | 1000 | 12.3 | 100 | 100 | 75 | 1 | 100 |
| LC6.5A | 6.5 | 7.22 | 9.88 | 10 | 1000 | 11.2 | 100 | 100 | 75 | 1 | 100 |
| LC7.0 | 7.0 | 7.78 | 9.51 | 10 | 500 | 13.3 | 100 | 100 | 75 | 1 | 100 |
| LC7.0A | 7.0 | 7.78 | 8.80 | 10 | 500 | 12.0 | 100 | 100 | 75 | 1 | 100 |
| LC7.5 | 7.5 | 8.33 | 10.2 | 10 | 250 | 14.3 | 100 | 100 | 75 | 1 | 100 |
| LC7.5A | 7.5 | 8.33 | 9.21 | 10 | 250 | 12.9 | 100 | 100 | 75 | 1 | 100 |
| LC8.0 | 8.0 | 8.89 | 10.9 | 1 | 100 | 15.0 | 100 | 100 | 75 | 1 | 100 |
| LC8.0A | 8.0 | 8.89 | 9.83 | 1 | 100 | 13.6 | 100 | 100 | 75 | 1 | 100 |
| LC8.5 | 8.5 | 9.44 | 11.5 | 1 | 50 | 15.9 | 94 | 100 | 75 | 1 | 100 |
| LC8.5A | 8.5 | 9.44 | 10.4 | 1 | 50 | 14.4 | 100 | 100 | 75 | 1 | 100 |
| LC9.0 | 9.0 | 10.0 | 12.2 | 1 | 10 | 16.9 | 69 | 100 | 75 | 1 | 100 |
| LC9.0A | 9.0 | 10.0 | 11.1 | 1 | 10 | 15.4 | 97 | 100 | 75 | 1 | 100 |
| LC10 | 10 | 11.1 | 13.6 | 1 | 5 | 18.8 | 80 | 100 | 75 | 1 | 100 |
| LC10A | 10 | 11.1 | 12.3 | 1 | 5 | 17.0 | 88 | 100 | 75 | 1 | 100 |
| LC11 | 11 | 12.2 | 14.9 | 1 | 5 | 20.1 | 74 | 100 | 75 | 1 | 100 |
| LC11A | 11 | 12.2 | 13.5 | 1 | 5 | 18.2 | 82 | 100 | 75 | 1 | 100 |
| LC12 | 12 | 13.3 | 16.3 | 1 | 5 | 22.0 | 66 | 100 | 75 | 1 | 100 |
| LC12A | 12 | 13.3 | 14.7 | 1 | 5 | 19.9 | 75 | 100 | 75 | 1 | 100 |
| LC13 | 13 | 14.4 | 17.6 | 1 | 5 | 23.8 | 63 | 100 | 75 | 1 | 100 |
| LC13A | 13 | 14.4 | 15.9 | 1 | 5 | 21.5 | 70 | 100 | 75 | 1 | 100 |
| LC14 | 14 | 15.6 | 19.1 | 1 | 5 | 25.8 | 58 | 100 | 75 | 1 | 100 |
| LC14A | 14 | 15.6 | 17.2 | 1 | 5 | 23.2 | 65 | 100 | 75 | 1 | 100 |
| LC15 | 15 | 16.7 | 20.4 | 1 | 5 | 26.9 | 56 | 100 | 75 | 1 | 100 |
| LC15A | 15 | 16.7 | 18.5 | 1 | 5 | 24.4 | 61 | 100 | 75 | 1 | 100 |
| LC16 | 16 | 17.8 | 21.8 | 1 | 5 | 28.8 | 52 | 100 | 75 | 1 | 100 |
| LC16A | 16 | 17.8 | 19.7 | 1 | 5 | 26.0 | 57 | 100 | 75 | 1 | 100 |
| LC17 | 17 | 18.9 | 23.1 | 1 | 5 | 30.5 | 49 | 100 | 75 | 1 | 100 |
| LC17A | 17 | 18.9 | 20.9 | 1 | 5 | 27.6 | 54 | 100 | 75 | 1 | 100 |
| LC18 | 18 | 20.0 | 24.4 | 1 | 5 | 32.2 | 46 | 100 | 75 | 1 | 100 |
| LC18A | 18 | 20.0 | 22.1 | 1 | 5 | 29.9 | 51 | 100 | 75 | 1 | 100 |
| LC20 | 20 | 22.2 | 27.1 | 1 | 5 | 35.8 | 42 | 100 | 75 | 1 | 100 |
| LC20A | 20 | 22.2 | 24.5 | 1 | 5 | 32.4 | 46 | 100 | 75 | 1 | 100 |
| LC22 | 22 | 24.4 | 29.8 | 1 | 5 | 39.4 | 38 | 100 | 75 | 1 | 100 |
| LC22A | 22 | 24.4 | 25.9 | 1 | 5 | 35.5 | 42 | 100 | 75 | 1 | 100 |
| LC24 | 24 | 26.7 | 32.9 | 1 | 5 | 43.0 | 35 | 100 | 75 | 1 | 100 |
| LC24A | 24 | 26.7 | 29.5 | 1 | 5 | 39.9 | 39 | 100 | 75 | 1 | 100 |
| LC26 | 26 | 28.9 | 35.3 | 1 | 5 | 46.6 | 32 | 100 | 75 | 1 | 100 |
| LC26A | 26 | 28.9 | 31.9 | 1 | 5 | 42.1 | 36 | 100 | 75 | 1 | 100 |
| LC28 | 28 | 31.1 | 38.0 | 1 | 5 | 50.1 | 30 | 100 | 75 | 1 | 100 |
| LC28A | 28 | 31.1 | 34.4 | 1 | 5 | 45.4 | 33 | 100 | 75 | 1 | 100 |
| LC30 | 30 | 33.3 | 40.7 | 1 | 5 | 53.5 | 28 | 100 | 75 | 1 | 100 |
| LC30A | 30 | 33.3 | 36.8 | 1 | 5 | 48.4 | 31 | 100 | 75 | 1 | 100 |
| LC33 | 33 | 36.7 | 44.9 | 1 | 5 | 58.0 | 25.4 | 100 | 75 | 1 | 100 |
| LC33A | 33 | 36.7 | 40.6 | 1 | 5 | 53.3 | 28.1 | 100 | 75 | 1 | 100 |
| LC36 | 36 | 40.0 | 48.9 | 1 | 5 | 64.3 | 23.3 | 100 | 75 | 1 | 100 |
| LC36A | 36 | 40.0 | 44.2 | 1 | 5 | 58.1 | 25.8 | 100 | 75 | 1 | 100 |
| LC40 | 40 | 44.4 | 54.3 | 1 | 5 | 71.4 | 21.0 | 100 | 75 | 1 | 100 |
| LC40A | 40 | 44.4 | 49.1 | 1 | 5 | 64.5 | 23.3 | 100 | 75 | 1 | 100 |
| LC43 | 43 | 47.8 | 58.4 | 1 | 5 | 76.7 | 19.5 | 100 | 150 | 1 | 200 |
| LC43A | 43 | 47.8 | 52.8 | 1 | 5 | 69.4 | 21.6 | 100 | 150 | 1 | 200 |
| LC45 | 45 | 50.0 | 61.1 | 1 | 5 | 80.3 | 18.7 | 100 | 150 | 1 | 200 |
| LC45A | 45 | 50.0 | 55.3 | 1 | 5 | 72.7 | 20.6 | 100 | 150 | 1 | 200 |
| LC48 | 48 | 53.3 | 65.1 | 1 | 5 | 85.5 | 17.5 | 100 | 150 | 1 | 200 |
| LC48A | 48 | 53.3 | 58.9 | 1 | 5 | 77.4 | 19.4 | 100 | 150 | 1 | 200 |
| LC51 | 51 | 56.7 | 69.3 | 1 | 5 | 91.1 | 16.5 | 100 | 150 | 1 | 200 |
| LC51A | 51 | 56.7 | 62.7 | 1 | 5 | 82.4 | 18.2 | 100 | 150 | 1 | 200 |
| LC54 | 54 | 60.0 | 73.3 | 1 | 5 | 98.3 | 15.6 | 100 | 150 | 1 | 200 |
| LC54A | 54 | 60.0 | 66.3 | 1 | 5 | 87.1 | 17.2 | 100 | 150 | 1 | 200 |
| LC58 | 58 | 64.4 | 78.7 | 1 | 5 | 103.0 | 14.6 | 100 | 150 | 1 | 200 |
| LC58A | 58 | 64.4 | 71.2 | 1 | 5 | 93.6 | 16.0 | 100 | 150 | 1 | 200 |
| LC60 | 60 | 66.7 | 81.5 | 1 | 5 | 107.0 | 14.0 | 90 | 150 | 1 | 200 |
| LC60A | 60 | 66.7 | 73.7 | 1 | 5 | 96.8 | 15.5 | 90 | 150 | 1 | 200 |
| LC64 | 64 | 71.1 | 86.9 | 1 | 5 | 114.0 | 13.2 | 90 | 150 | 1 | 200 |
| LC64A | 64 | 71.1 | 78.9 | 1 | 5 | 103.0 | 14.6 | 90 | 150 | 1 | 200 |
| LC70 | 70 | 77.8 | 95.1 | 1 | 5 | 125 | 12.0 | 90 | 150 | 1 | 200 |
| LC70A | 70 | 77.8 | 86.0 | 1 | 5 | 113 | 13.3 | 90 | 150 | 1 | 200 |
| LC75 | 75 | 83.3 | 102.0 | 1 | 5 | 134 | 11.2 | 90 | 150 | 1 | 200 |
| LC75A | 75 | 83.3 | 92.1 | 1 | 5 | 121 | 12.4 | 90 | 150 | 1 | 200 |
| LC80 | 80 | 88.7 | 108 | 1 | 5 | 142 | 10.6 | 90 | 150 | 1 | 200 |
| LC80A | 80 | 88.7 | 98.0 | 1 | 5 | 129 | 11.6 | 90 | 150 | 1 | 200 |
| LC90 | 90 | 100 | 122 | 1 | 5 | 160 | 9.4 | 90 | 300 | 1 | 200 |
| LC90A | 90 | 100 | 111 | 1 | 5 | 146 | 10.3 | 90 | 300 | 1 | 200 |
| LC100 | 100 | 111 | 136 | 1 | 5 | 179 | 8.4 | 90 | 300 | 1 | 200 |
| LC100A | 100 | 111 | 123 | 1 | 5 | 162 | 9.3 | 90 | 300 | 1 | 200 |
| LC110 | 110 | 122 | 149 | 1 | 5 | 196 | 7.7 | 90 | 300 | 1 | 400 |
| LC110A | 110 | 122 | 135 | 1 | 5 | 178 | 8.4 | 90 | 300 | 1 | 400 |
| LC120 | 120 | 133 | 163 | 1 | 5 | 214 | 7.0 | 90 | 300 | 1 | 400 |
| LC120A | 120 | 133 | 147 | 1 | 5 | 193 | 7.8 | 90 | 300 | 1 | 400 |
| LC130 | 130 | 144 | 176 | 1 | 5 | 231 | 6.5 | 90 | 300 | 1 | 400 |
| LC130A | 130 | 144 | 159 | 1 | 5 | 209 | 7.2 | 90 | 300 | 1 | 400 |
| LC150 | 150 | 167 | 204 | 1 | 5 | 268 | 5.6 | 90 | 300 | 1 | 400 |
| LC150A | 150 | 167 | 185 | 1 | 5 | 243 | 6.2 | 90 | 300 | 1 | 400 |
| LC160 | 160 | 178 | 218 | 1 | 5 | 287 | 5.2 | 90 | 300 | 1 | 400 |
| LC160A | 160 | 178 | 197 | 1 | 5 | 259 | 5.8 | 90 | 300 | 1 | 400 |
| LC170 | 170 | 189 | 231 | 1 | 5 | 304 | 4.9 | 90 | 300 | 1 | 400 |
| LC170A | 170 | 189 | 209 | 1 | 5 | 275 | 5.4 | 90 | 300 | 1 | 400 |

NOTE 1: TAZ are normally selected according to the reverse "Stand Off Voltage (V_{WM})" which should be equal to or greater than the DC or continuous peak operating voltage level.