

**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  $\mu$ 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<sub>clamping</sub> (0 volts to V<sub>(BR)</sub> min): Less than 5 x 10<sup>-9</sup> seconds  
Operating and Storage temperatures: -65° to +175°C  
Steady State power dissipation: 1.0 W  
Repetition Rate (duty cycle): .01%

## ELECTRICAL CHARACTERISTICS

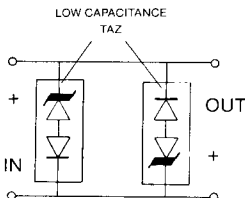
Clamping Factor: 1.4 @ Full Rated power  
1.30 @ 50% Rated power

Clamping Factor: The ratio of the actual V<sub>C</sub> (Clamping Voltage) to the actual V<sub>(BR)</sub> (Breakdown Voltage) as measured on a specific device.

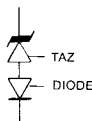
**NOTE:** When pulse testing, test in Avalanche direction. DO NOT pulse in forward direction.

## APPLICATION

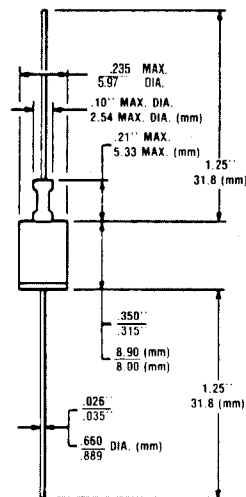
Devices must be used with two units in parallel, opposite in polarity, as shown in circuit for AC Signal Line protection:



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

| MODEL/ PART NUMBER | REVERSE STAND OFF VOLTAGE $V_{WM}$ VOLTS | BREAKDOWN VOLTAGE $V_{BR}$ VOLTS |       | @ $I_T$ mA | MAXIMUM REVERSE LEAKAGE $I_{R}$ $\mu$ A | MAXIMUM CLAMPING VOLTAGE $V_{PP}$ VOLTS | MAXIMUM PEAR PULSE CURRENT $I_{PP}$ @ 10 $\times$ 1000 $\mu$ S | CAPACITANCE @ 0 VOLTS pF | V <sub>IR</sub> INVERSE BLOCKING VOLTAGE VOLTS | I <sub>IR</sub> INVERSE LEAKAGE CURRENT $\mu$ A | V <sub>PIR</sub> PEAR 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                             | 89.9  | 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                                       | 288                                     | 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.