

## STANDARD TVS ARRAYS

### APPLICATIONS

- ✓ Military & Aerospace Data Line Protection
- ✓ RS-232 & RS-423
- ✓ Microprocessor Based Equipment
- ✓ Multiple Data & Power Bus Line Protection

### IEC COMPATIBILITY (EN61000-4)

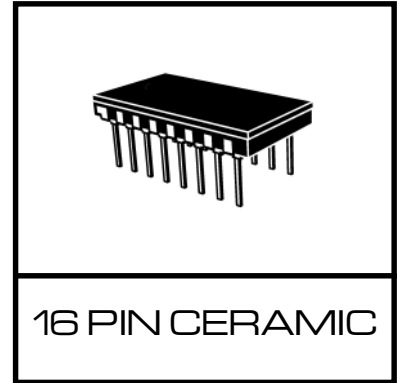
- ✓ 61000-4-2 (ESD): Air - 15kV, Contact - 8kV
- ✓ 61000-4-4 (EFT): 40A - 5/50ns
- ✓ 61000-4-5 (Surge): 24A, 8/20 $\mu$ s - Level 2 (Line-Gnd) & Level 3 (Line-Line)

### FEATURES

- ✓ MIL-STD-461 Compatible
- ✓ 1300 Watts Peak Pulse Power per Line ( $t_p=8/20\mu$ s)
- ✓ Unidirectional & Bidirectional Configurations
- ✓ ESD Protection > 40 kilovolts
- ✓ Internal Common Ground
- ✓ Available in Multiple Voltage Types: 5.0V to 30.0V
- ✓ **PROTECTS UP TO 15 LINES**

### MECHANICAL CHARACTERISTICS

- ✓ Ceramic 16 Pin Hermetically Sealed Package
- ✓ Weight 3.2 grams (Approximate)
- ✓ Flammability rating UL 94V-0
- ✓ Marking: Date Code, Logo, Part Number & Pin One Defined By Flag on Lead
- ✓ Screened for Military Requirements in Accordance with MIL-PRF-19500
  - Standard screening consists of 100% JANTX equivalent level testing per MIL-PRF-19500
  - For ordering these options, use the following suffix:
    - H1 - 100% JANTX level screening
    - H2 - 100% JANTX level screening with Group B testing
- ✓ Screened to DESC Drawing #94029 (Bidirectional) & #94030 (Unidirectional)



## CIRCUIT DIAGRAMS



## DEVICE CHARACTERISTICS

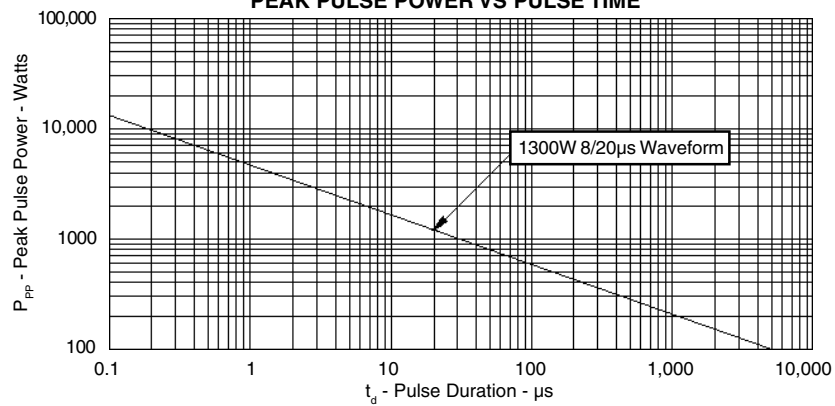
| MAXIMUM RATINGS @ 25°C Unless Otherwise Specified         |           |                |       |
|-----------------------------------------------------------|-----------|----------------|-------|
| PARAMETER                                                 | SYMBOL    | VALUE          | UNITS |
| Peak Pulse Power ( $t_p = 8/20\mu s$ ) - See Figure 1     | $P_{PP}$  | 1300           | Watts |
| Operating Temperature                                     | $T_J$     | -55°C to 150°C | °C    |
| Storage Temperature                                       | $T_{STG}$ | -55°C to 150°C | °C    |
| Forward Surge Rating (1/20 seconds) - Unidirectional Only | $I_F$     | 10             | Amps  |

| ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified |                                                  |                                                               |                                                                             |                                                                                    |                                                               |                                                   |                                                                            |
|-----------------------------------------------------------------------|--------------------------------------------------|---------------------------------------------------------------|-----------------------------------------------------------------------------|------------------------------------------------------------------------------------|---------------------------------------------------------------|---------------------------------------------------|----------------------------------------------------------------------------|
| PART NUMBER<br>(Note 1)                                               | RATED STAND-OFF VOLTAGE<br><br>$V_{WM}$<br>VOLTS | MINIMUM BREAKDOWN VOLTAGE<br><br>@ 1mA<br>$V_{(BR)}$<br>VOLTS | MAXIMUM CLAMPING VOLTAGE<br>(See Fig. 2)<br>@ $I_p = 1 A$<br>$V_C$<br>VOLTS | MAXIMUM CLAMPING VOLTAGE<br>(See Fig. 2)<br><br>@ 8/20 $\mu s$<br>$V_C$ @ $I_{PP}$ | MAXIMUM LEAKAGE CURRENT<br><br>@ $V_{WM}$<br>$I_D$<br>$\mu A$ | MAXIMUM CAPACITANCE<br><br>@ 0V, 1 MHz<br>C<br>pF | TEMPERATURE COEFFICIENT<br>OF $V_{(BR)}$<br><br>$\theta V_{(BR)}$<br>mV/°C |
| DLZ-5                                                                 | 5.0                                              | 6.0                                                           | 10.2                                                                        | 18.1V @ 70A                                                                        | 200                                                           | 880                                               | 5                                                                          |
| DLZ-5A                                                                | 5.0                                              | 6.0                                                           | 9.5                                                                         | 19.2V @ 66A                                                                        | 200                                                           | 880                                               | 5                                                                          |
| DLZ-12                                                                | 12.0                                             | 13.3                                                          | 21.1                                                                        | 28.0V @ 48A                                                                        | 2                                                             | 440                                               | 18                                                                         |
| DLZ-12A                                                               | 12.0                                             | 13.3                                                          | 19.1                                                                        | 33.0V @ 41A                                                                        | 2                                                             | 440                                               | 18                                                                         |
| DLZ-17                                                                | 17.0                                             | 19.2                                                          | 30.4                                                                        | 37.4V @ 35A                                                                        | 2                                                             | 330                                               | 20                                                                         |
| DLZ-17A                                                               | 17.0                                             | 19.2                                                          | 27.5                                                                        | 40.0V @ 33A                                                                        | 2                                                             | 330                                               | 20                                                                         |
| DLZ-24                                                                | 24.0                                             | 26.7                                                          | 42.3                                                                        | 50.5V @ 26A                                                                        | 2                                                             | 275                                               | 31                                                                         |
| DLZ-24A                                                               | 24.0                                             | 26.7                                                          | 38.3                                                                        | 62.4V @ 21A                                                                        | 2                                                             | 275                                               | 31                                                                         |
| DLZ-30                                                                | 30.0                                             | 33.3                                                          | 52.8                                                                        | 62.9V @ 21A                                                                        | 2                                                             | 220                                               | 39                                                                         |
| DLZ-30A                                                               | 30.0                                             | 33.3                                                          | 47.8                                                                        | 60.0V @ 24A                                                                        | 2                                                             | 220                                               | 39                                                                         |
| DLZ-8C                                                                | 8.0                                              | 8.5                                                           | 13.4                                                                        | 29.0V @ 45A                                                                        | 10                                                            | 440                                               | 9                                                                          |
| DLZ-13C                                                               | 13.0                                             | 14.4                                                          | 22.8                                                                        | 31.0V @ 43A                                                                        | 4                                                             | 385                                               | 18                                                                         |
| DLZ-13CA                                                              | 13.0                                             | 14.4                                                          | 20.6                                                                        | 34.0V @ 39A                                                                        | 4                                                             | 385                                               | 18                                                                         |
| DLZ-19C                                                               | 19.0                                             | 21.6                                                          | 34.2                                                                        | 40.5V @ 33A                                                                        | 4                                                             | 275                                               | 24                                                                         |
| DLZ-19CA                                                              | 19.0                                             | 21.6                                                          | 31.0                                                                        | 47.6V @ 28A                                                                        | 4                                                             | 275                                               | 24                                                                         |
| DLZ-30C                                                               | 30.0                                             | 33.3                                                          | 52.8                                                                        | 68.7V @ 19A                                                                        | 4                                                             | 165                                               | 39                                                                         |
| DLZ-30CA                                                              | 30.0                                             | 33.3                                                          | 47.8                                                                        | 62.5V @ 21A                                                                        | 4                                                             | 165                                               | 39                                                                         |

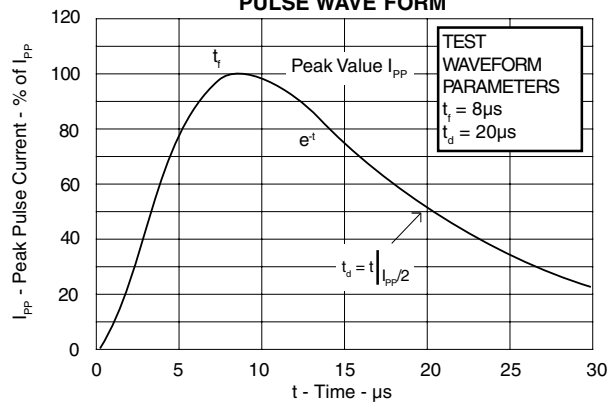
**Note 1:** Part numbers with a "C" suffix are bidirectional devices, i.e., DLZ-8C.

## GRAPHS

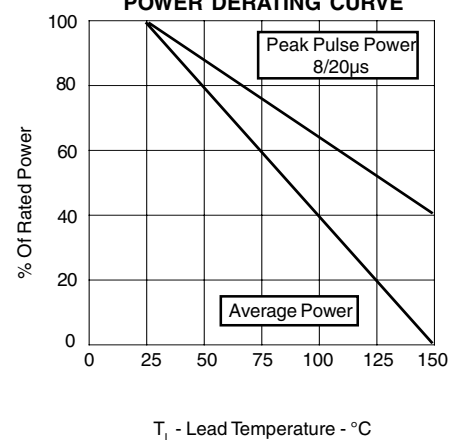
**FIGURE 1  
PEAK PULSE POWER VS PULSE TIME**



**FIGURE 2  
PULSE WAVE FORM**

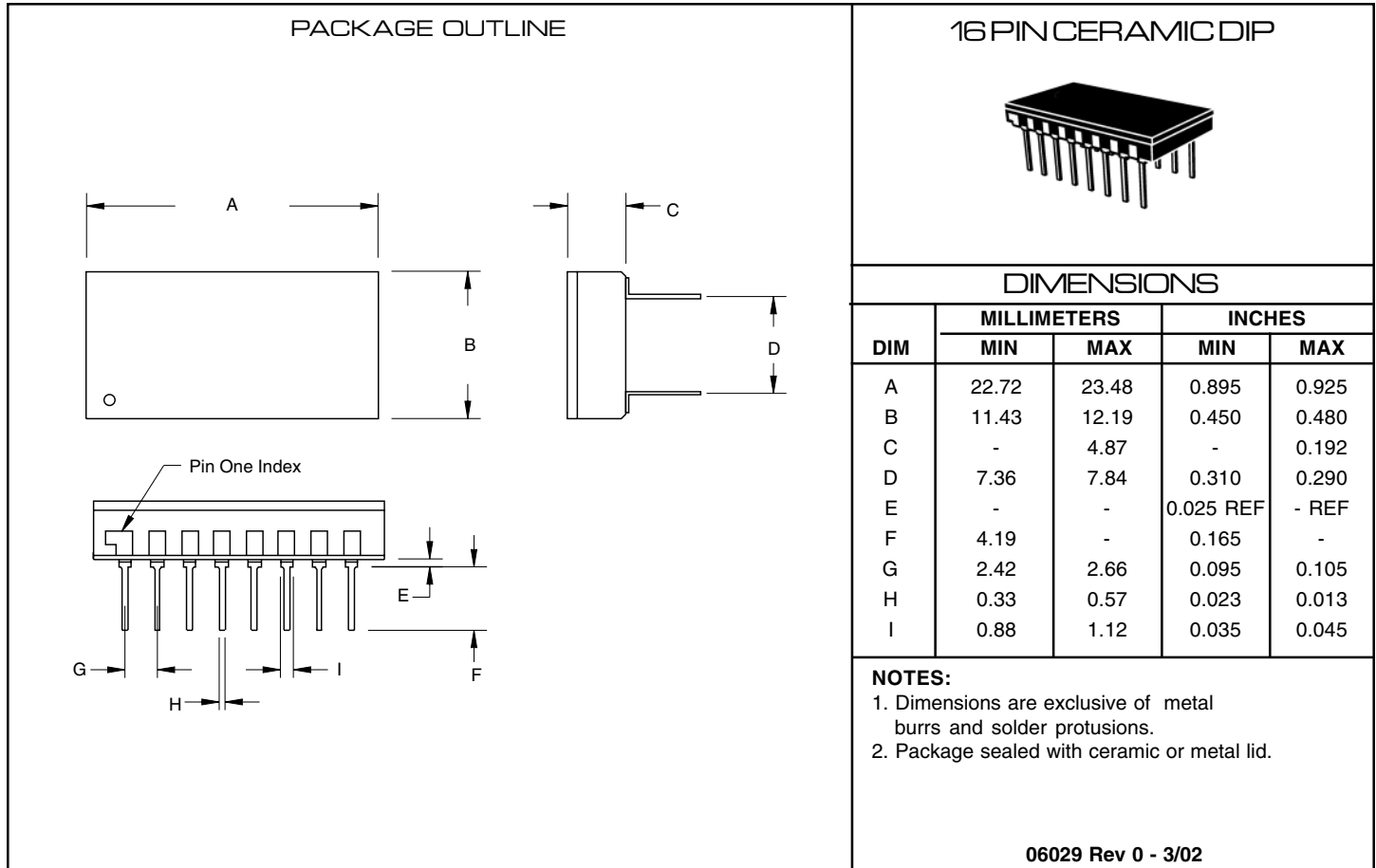


**FIGURE 3  
POWER DERATING CURVE**



# DLZ-5 thru DLZ-30CA

## PACKAGE OUTLINE & DIMENSIONS



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