

## STANDARD CAPACITANCE TVS ARRAY

### APPLICATIONS

- ✓ Low Frequency I/O Ports
- ✓ RS-232 & RS-423 Data Lines
- ✓ Power Bus Lines
- ✓ Monitoring & Industrial Signal and Data Ports
- ✓ Microprocessor Based Equipment

### IEC COMPATIBILITY (EN61000-4)

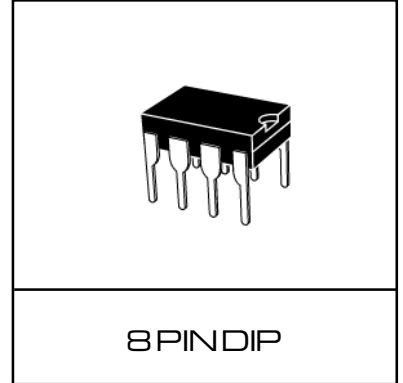
- ✓ 61000-4-2 (ESD): Air - 15kV, Contact - 8kV
- ✓ 61000-4-4 (EFT): 40A - 5/50ns
- ✓ 61000-4-5 (Surge): 24A, 8/20μs Level 2 (Line-Ground) & Level 3 (Line-Line)

### FEATURES

- ✓ 800 Watts Peak Pulse Power per Line (tp=8/20μs)
- ✓ Unidirectional & Bidirectional Configuration
- ✓ ESD Protection > 40 kilovolts
- ✓ Available in 5V, 12V, 15V & 24V
- ✓ Standard Dual-In-Line Package
- ✓ Protects 4 to 6 Lines

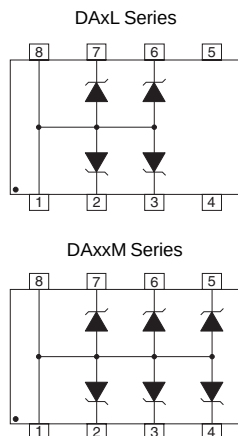
### MECHANICAL CHARACTERISTICS

- ✓ Molded 8 Pin Dual-In-Line (DIP) Package
- ✓ Weight 0.55 grams (Approximate)
- ✓ Flammability rating UL 94V-0
- ✓ Packaging: 50 Pieces Per Tube
- ✓ Marking: Logo, Part Number, Date Code & Pin One Defined By Dot on Top of Package

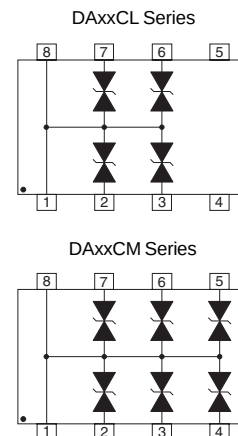


## PIN CONFIGURATIONS

### UNIDIRECTIONAL



### BIDIRECTIONAL



## 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 | $P_{PP}$  | 800            | Watts |
| Operating Temperature                                 | $T_j$     | -55°C to 150°C | °C    |
| Storage Temperature                                   | $T_{STG}$ | -55°C to 150°C | °C    |
| Forward Surge Rating (See Note 1)                     | $I_F$     | 10             | Amps  |

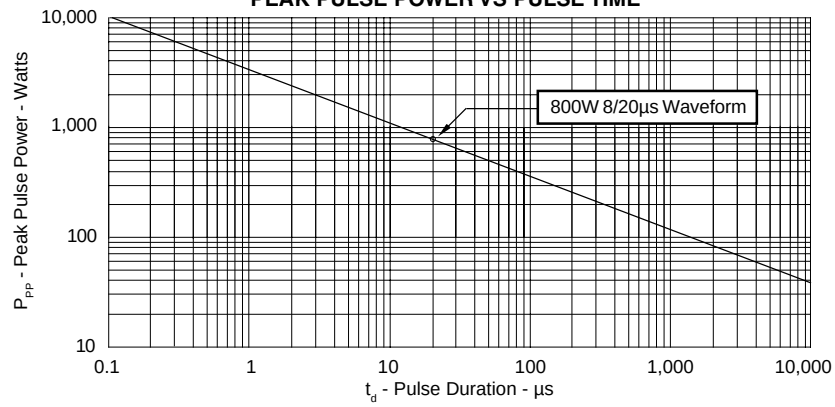
| ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified |                                                  |                                                               |                                                                                |                                                                                    |                                                               |                                                       |
|-----------------------------------------------------------------------|--------------------------------------------------|---------------------------------------------------------------|--------------------------------------------------------------------------------|------------------------------------------------------------------------------------|---------------------------------------------------------------|-------------------------------------------------------|
| PART NUMBER<br>(See Notes 1 & 2)                                      | 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><br>@ $I_P = 1A$<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>$\mu A$ | TYPICAL CAPACITANCE<br><br>@ 0V, 1 MHz<br>$C_j$<br>pF |
| DA05L                                                                 | 5.0                                              | 6.0                                                           | 12.5                                                                           | 24.6V @ 45A                                                                        | 200                                                           | 880                                                   |
| DA12L                                                                 | 12.0                                             | 13.3                                                          | 26.0                                                                           | 32.9V @ 34A                                                                        | 2                                                             | 440                                                   |
| DA15L                                                                 | 15.0                                             | 16.7                                                          | 33.0                                                                           | 37.7V @ 27A                                                                        | 2                                                             | 400                                                   |
| DA24L                                                                 | 24.0                                             | 26.7                                                          | 52.1                                                                           | 48.5V @ 22A                                                                        | 2                                                             | 275                                                   |
| DA05M                                                                 | 5.0                                              | 6.0                                                           | 12.5                                                                           | 24.6V @ 45A                                                                        | 200                                                           | 880                                                   |
| DA12M                                                                 | 12.0                                             | 13.3                                                          | 26.0                                                                           | 32.9V @ 34A                                                                        | 2                                                             | 440                                                   |
| DA15M                                                                 | 15.0                                             | 16.7                                                          | 33.0                                                                           | 37.7V @ 27A                                                                        | 2                                                             | 400                                                   |
| DA24M                                                                 | 24.0                                             | 26.7                                                          | 52.1                                                                           | 48.5V @ 22A                                                                        | 2                                                             | 275                                                   |
| DA05CL                                                                | 5.0                                              | 6.0                                                           | 12.5                                                                           | 24.6V @ 45A                                                                        | 200                                                           | 500                                                   |
| DA12CL                                                                | 12.0                                             | 13.3                                                          | 26.0                                                                           | 32.9V @ 34A                                                                        | 2                                                             | 385                                                   |
| DA15CL                                                                | 15.0                                             | 16.7                                                          | 33.0                                                                           | 37.7V @ 27A                                                                        | 2                                                             | 300                                                   |
| DA24CL                                                                | 24.0                                             | 26.7                                                          | 52.1                                                                           | 48.5V @ 22A                                                                        | 2                                                             | 200                                                   |
| DA05CM                                                                | 5.0                                              | 6.0                                                           | 12.5                                                                           | 24.6V @ 45A                                                                        | 200                                                           | 500                                                   |
| DA12CM                                                                | 12.0                                             | 13.3                                                          | 26.0                                                                           | 32.9V @ 34A                                                                        | 2                                                             | 385                                                   |
| DA15CM                                                                | 15.0                                             | 16.7                                                          | 33.0                                                                           | 37.7V @ 27A                                                                        | 2                                                             | 300                                                   |
| DA24CM                                                                | 24.0                                             | 26.7                                                          | 52.1                                                                           | 48.5V @ 22A                                                                        | 2                                                             | 200                                                   |

**Note 1:** Unidirectional Only:  $V_F = 1.5$  Volts @ 10A, 300 $\mu s$  (square wave).

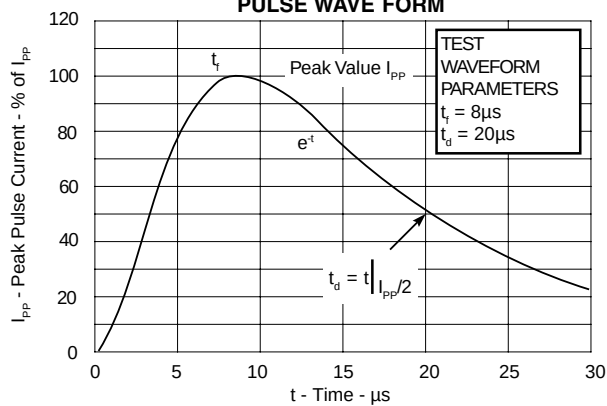
**Note 2:** The "C" suffix specifies a bidirectional device, such as DA05CM or DA12CL.

## GRAPHS

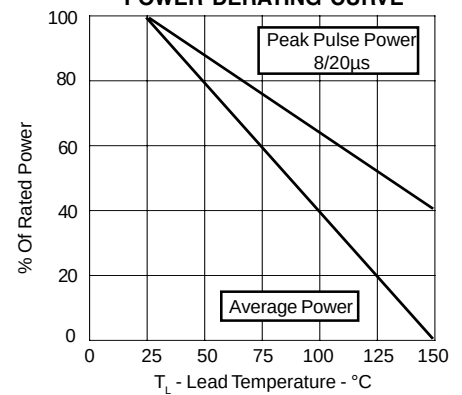
**FIGURE 1**  
**PEAK PULSE POWER VS PULSE TIME**



**FIGURE 2**  
**PULSE WAVE FORM**

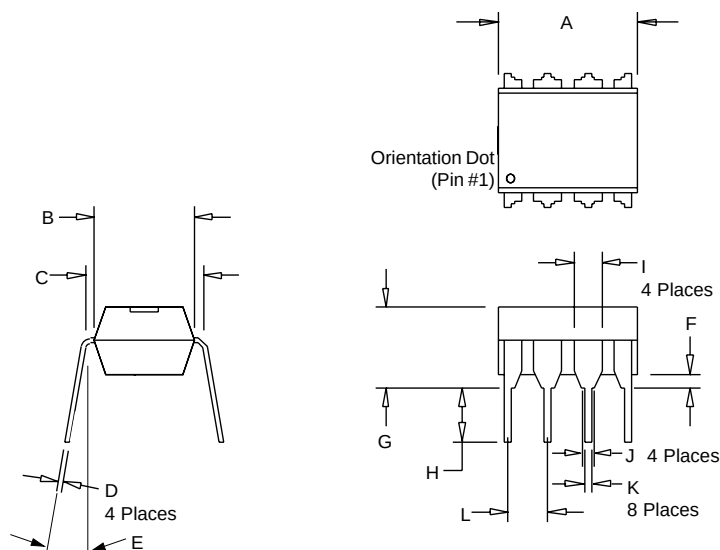


**FIGURE 3**  
**POWER DERATING CURVE**

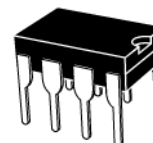


## PACKAGE OUTLINE & DIMENSIONS

### PACKAGE OUTLINE



### 8PINDIP



### DIMENSIONS

| DIM | MILLIMETERS |          | INCHES    |           |
|-----|-------------|----------|-----------|-----------|
|     | MIN         | MAX      | MIN       | MAX       |
| A   | -           | 10.2     | -         | 0.400     |
| B   | 6.10        | 6.60     | 0.240     | 0.260     |
| C   | 7.37        | 7.87     | 0.290     | 0.310     |
| D   | 0.25        | 0.50     | 0.010     | 0.020     |
| E   | 0°          | 10°      | 0°        | 10°       |
| F   | 0.51        | -        | 0.020     | -         |
| G   | -           | 5.08     | -         | 0.200     |
| H   | 3.17        | -        | 0.125     | -         |
| I   | -           | 1.78     | -         | 0.070     |
| J   | 0.84 TYP    | 0.84 TYP | 0.033 TYP | 0.033 TYP |
| K   | 0.38        | 0.53     | 0.015     | 0.021     |
| L   | 2.54 TYP    | 2.54 TYP | 0.100 TYP | 0.100 TYP |

#### NOTES:

1. Dimensions are exclusive of mold flash and metal burrs.

#### BULK ORDERING NOMENCLATURE:

1. No Suffix = Product Shipped in Tubes of 50 pcs per Tube.

Outline & Dimensions: Rev 1 - 11/01, 06004

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