



## WE24DMS-B

### Transient Voltage Suppressor

#### Features

- 90 Watts Peak Pulse Power per Line ( $t_p = 8/20\mu s$ )
- Small Body Outline Dimensions
- Protects one I/O or Power Line
- Low Clamping Voltage
- Working Voltage: 24V
- Low Leakage Current



#### IEC COMPATIBILITY (EN61000-4)

- IEC 61000-4-2 (ESD)  $\pm 10kV$  (air),  $\pm 8kV$  (contact)
- IEC 61000-4-4 (EFT) 40A (5/50ns)
- IEC 61000-4-5 (Lightning) 2A (8/20 $\mu s$ )

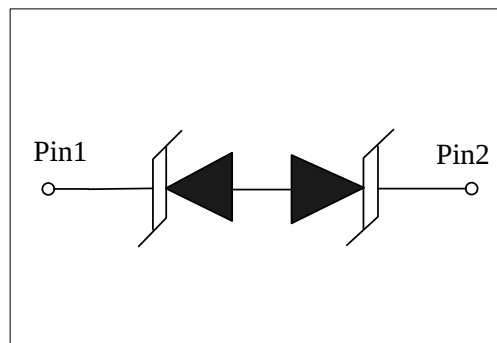
#### Mechanical Characteristics

- DFN0603-2L package
- Marking : Marking Code
- Packaging: Tape and Reel per EIA 481
- RoHS Compliant & HF
- Device meets MSL1 requirement

#### Applications

- Laptop Computers
- Cellular Phones
- Digital Cameras
- Personal Digital Assistants (PDAs)

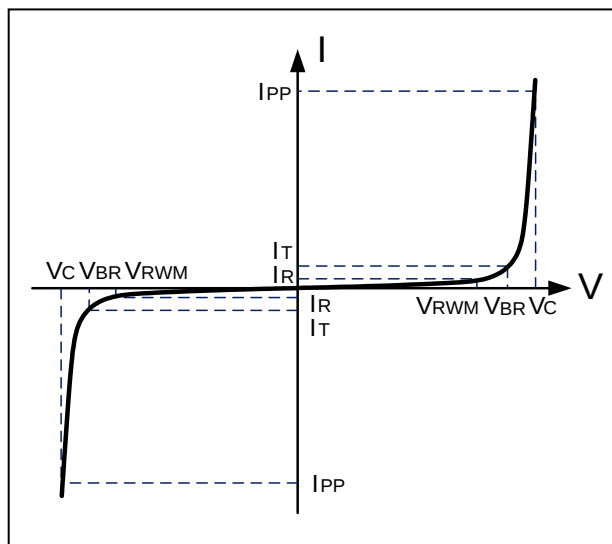
#### Schematic & PIN Configuration



| Absolute Maximum Rating                  |           |              |       |
|------------------------------------------|-----------|--------------|-------|
| Rating                                   | Symbol    | Value        | Units |
| Peak Pulse Power ( $t_p = 8/20\mu s$ )   | $P_{PP}$  | 90           | W     |
| Peak Pulse Current ( $t_p = 8/20\mu s$ ) | $I_{PP}$  | 2            | A     |
| Operating Temperature                    | $T_J$     | -55 to + 125 | °C    |
| Storage Temperature                      | $T_{STG}$ | -55 to +150  | °C    |

## Electrical Parameters

| Symbol    | Parameter                           |
|-----------|-------------------------------------|
| $I_{PP}$  | Reverse Peak Pulse Current          |
| $V_C$     | Clamping Voltage @ $I_{PP}$         |
| $V_{RWM}$ | Reverse Stand-Off Voltage           |
| $I_R$     | Reverse Leakage Current @ $V_{RWM}$ |
| $V_{BR}$  | Breakdown Voltage @ $I_T$           |
| $I_T$     | Test Current                        |



## Electrical Characteristics(T=25°C unless otherwise noted)

| WE24DMS-B                 |           |                            |         |         |         |       |
|---------------------------|-----------|----------------------------|---------|---------|---------|-------|
| Parameter                 | Symbol    | Conditions                 | Minimum | Typical | Maximum | Units |
| Reverse Stand-Off Voltage | $V_{RWM}$ |                            |         |         | 24      | V     |
| Reverse Breakdown Voltage | $V_{BR}$  | $I_T=1mA$                  | 26.7    |         |         | V     |
| Reverse Leakage Current   | $I_R$     | $V_{RWM}=24V$              |         |         | 200     | nA    |
| Clamping Voltage          | $V_C$     | $I_{PP}=2A, t_p=8/20\mu s$ |         | 42      | 45      | V     |
| Junction Capacitance      | $C_j$     | $V_R=0V, f=1MHz$           |         | 4       | 6       | pF    |

## Typical Characteristics

Figure 1: Peak Pulse Power Vs Pulse Time

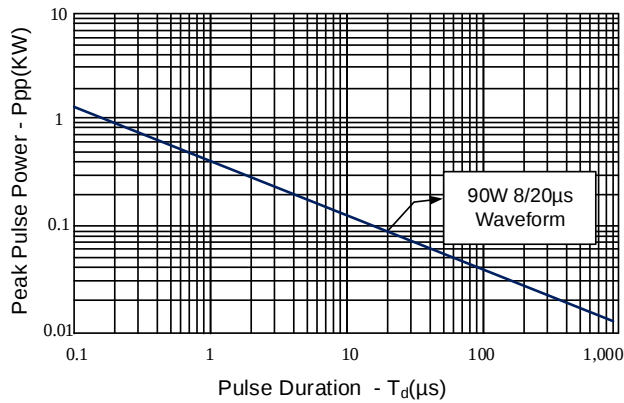


Figure 2: Power Derating Curve

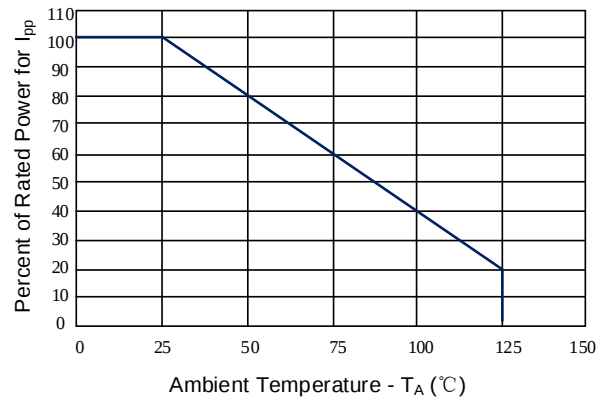


Figure 3: Clamping Voltage vs. Peak Pulse Current

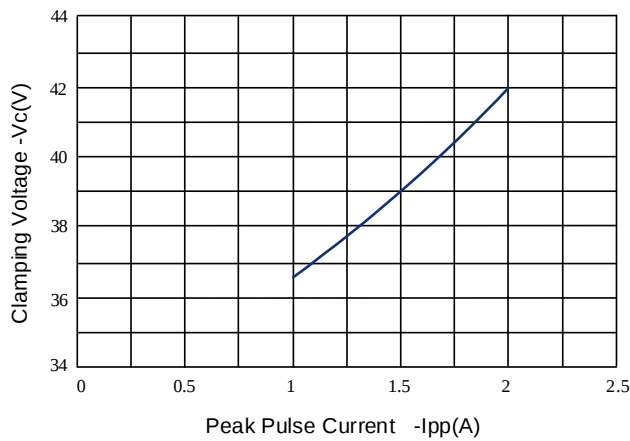
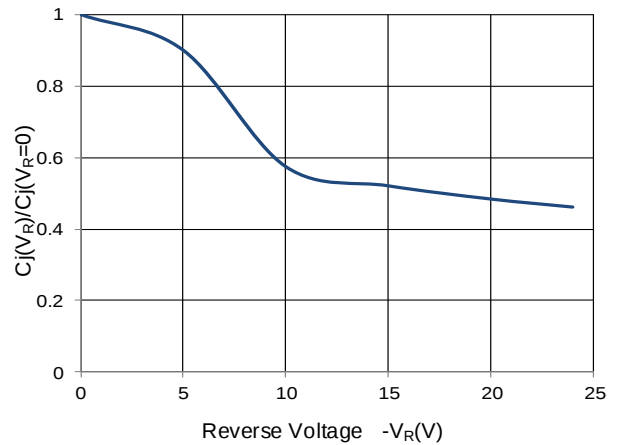
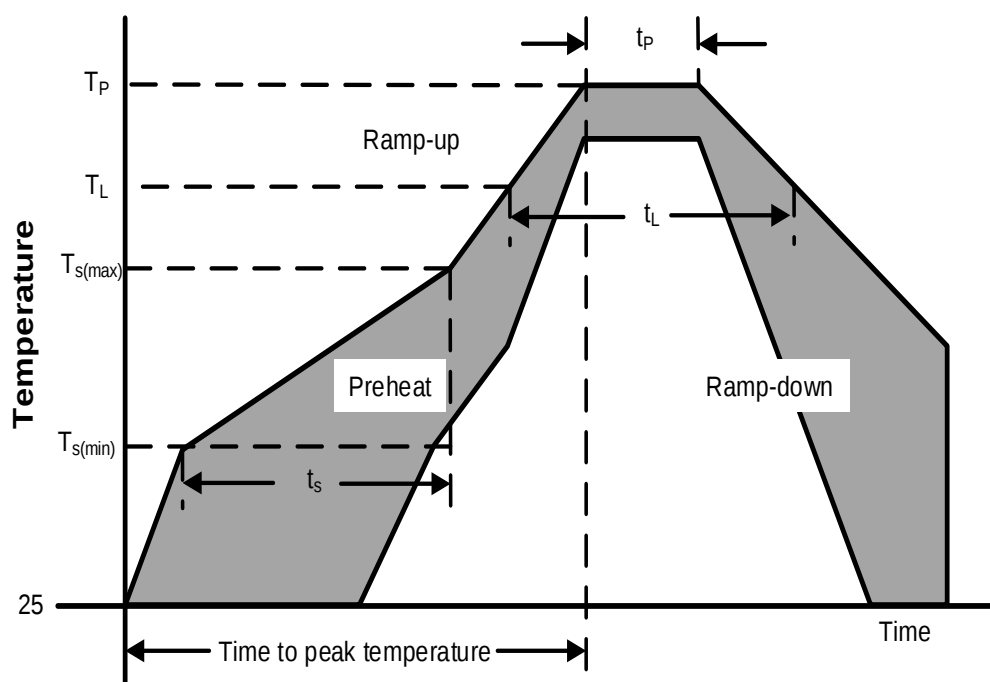


Figure 4: Normalized Junction Capacitance vs. Reverse Voltage



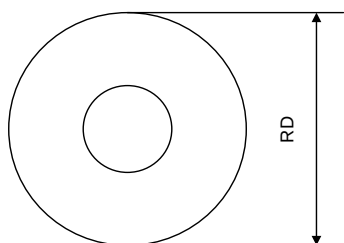
## Soldering Parameters

| Reflow Condition                                       |                                  | Pb – Free assembly |
|--------------------------------------------------------|----------------------------------|--------------------|
| Pre Heat                                               | Temperature Min ( $T_{s(min)}$ ) | 150°C              |
|                                                        | Temperature Max ( $T_{s(max)}$ ) | 200°C              |
|                                                        | Time (min to max) ( $t_s$ )      | 60 – 190 secs      |
| Average ramp up rate (Liquidus Temp) ( $T_L$ ) to peak |                                  | 5°C/second max     |
| $T_{s(max)}$ to $T_L$ —Ramp-up Rate                    |                                  | 5°C/second max     |
| Reflow                                                 | Temperature ( $T_L$ ) (Liquidus) | 217°C              |
|                                                        | Temperature ( $t_L$ )            | 60 – 150 seconds   |
| Peak Temperature ( $T_P$ )                             |                                  | 260+0/-5 °C        |
| Time within actual peak Temperature ( $t_p$ )          |                                  | 20 – 40 seconds    |
| Ramp-down Rate                                         |                                  | 5°C/second max     |
| Time 25°C to peak Temperature ( $T_P$ )                |                                  | 8 minutes Max.     |
| Do not exceed                                          |                                  | 280°C              |

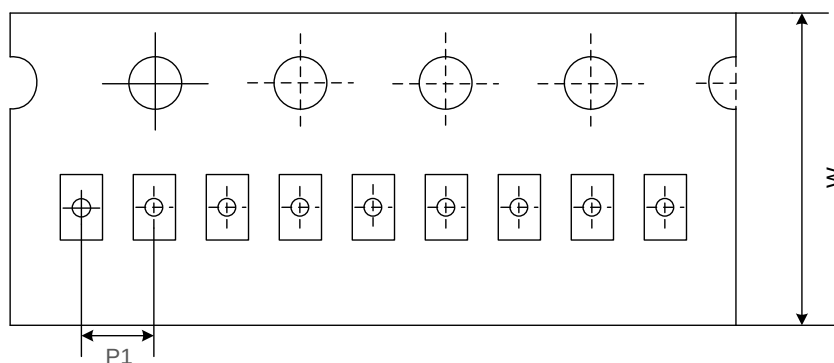


## Tape And Reel Information

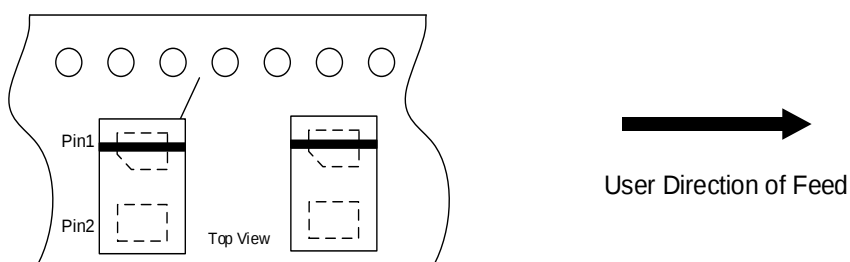
Reel Dimensions



Tape Dimensions



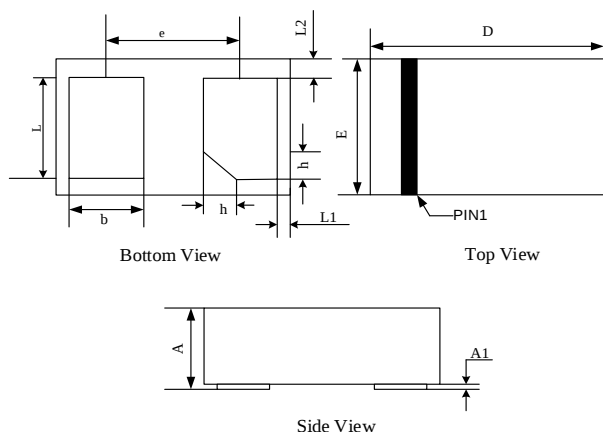
Quadrant Assignments For PIN1 Orientation In Tape



|    |                                         |        |
|----|-----------------------------------------|--------|
| RD | Reel Dimensions                         | 7 inch |
| W  | Overall width of the carrier tape       | 8 mm   |
| P1 | Pitch between successive cavity centers | 2mm    |

## Outline Drawing –DFN0603-2L

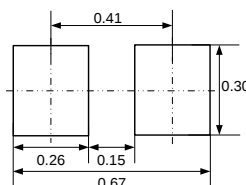
## PACKAGE OUTLINE



DFN0603-2L

| SYMBOL | MILLIMETERS |       |       |
|--------|-------------|-------|-------|
|        | NOM         | MIN   | MAX   |
| A      | --          | 0.280 | 0.320 |
| A1     | --          | --    | 0.050 |
| D      | 0.620       | 0.590 | 0.640 |
| E      | 0.320       | 0.290 | 0.340 |
| b      | 0.180       | 0.155 | 0.205 |
| L      | 0.240       | 0.215 | 0.265 |
| h      | --          | 0.050 | 0.100 |
| L1     | 0.040REF    |       |       |
| L2     | 0.040REF    |       |       |
| e      | 0.360BSC    |       |       |

## Land Pattern



## Marking Codes

| Part Number | Marking Code                                   |
|-------------|------------------------------------------------|
| WE24DMS-B   | <p>W=Specific Device Code<br/>M=Month Code</p> |

## Package Information

Qty: 15k/Reel

## CONTACT INFORMATION

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Specifications are subject to change without notice.  
 The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time.  
 Users should verify actual device performance in their specific applications.