



# **ESD Protection**

 $V_{RWM}$ 

28 V

# **Features**

- ESD protection of one line
- IEC61000-4-2(ESD): ±20kV Air, ±15kV Contact Compliance
- IEC61000-4-4(EFT): 40A(5/50nS)
- IEC61000-4-5(Lightning): 3A(8/20μS)
- Low leakage current, maximum of 0.5μA at rated voltage
- Lead free in compliance with EU RoHS2.0 (2011/65/EU & 2015/865/EU directive).
- Green molding compound as per IEC61249 Std..(Halogen Free)

### Mechanical Data

- Case: DFN 2L, Plastic
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.00004 ounces, 0.0011 grams
- Marking: 9V

# **Applications**

- LED Backlight
- Mobile Phones and accessories
- Desktops, Servers and Notebook
- Hand held portable
- Computer Interfaces Protection
- Serial and Parallel Ports Protection
- Control Signal Lines Protection





Fig.30(Top View)

# 0.042(1.05) 0.037(0.95) 0.002(0.05)MAX. 0.013(0.32) 0.008(0.22) PIN NO.1 IDENTIFICATION Unit: inch(mm) 0.042(1.05) 0.002(0.05)MAX.

# Maximum Ratings (T<sub>A</sub>=25°C unless otherwise noted)

| PARAMETER                               | SYMBOL           | LIMIT       | UNITS |  |
|---|------------------|-------------|-------|--|
| Peak Pulse Power Dissipation(tp=8/20uS) | P <sub>PP</sub>  | 165         | W     |  |
| ESD IEC61000-4-2(Air)                   |                  | ±20         | kV    |  |
| ESD IEC61000-4-2(Contact)               | V <sub>ESD</sub> | ±15         |       |  |
| Operating Junction Temperature Range    | TJ               | -55 to +125 | °C    |  |
| Storage Temperature Range               | T <sub>STG</sub> | -55 to +150 | °C    |  |





# Electrical Characteristics (T<sub>A</sub>=25°C unless otherwise noted)

| PARAMETER                                    | SYMBOL          | TEST CONDITION                              | MIN. | TYP. | MAX. | UNITS |
|--|-----------------|---|------|------|------|-------|
| Reverse Stand-Off Voltage <sup>(NOTE1)</sup> | $V_{RWM}$       | -   | -    | ı    | 28   | V     |
| Reverse Breakdown Voltage                    | $V_{BR}$        | I <sub>BR</sub> =1mA                        | 29   | ı    | 35   | V     |
| Reverse leakage current                      | I <sub>R</sub>  | V <sub>R</sub> =28V                         | -    | ı    | 0.5  | μА    |
| Clamping Voltage                             | V <sub>CL</sub> | I <sub>PP</sub> =1A, t <sub>P</sub> =8/20μs | -    | 38   | 45   | V     |
|  |                 | I <sub>PP</sub> =3A, t <sub>P</sub> =8/20μs | -    | 48   | 55   |       |
| Dynamic Resistance <sup>(NOTE2)</sup>        | $R_D$           | t <sub>P</sub> =8/20μs                      | -    | 5    | ı    | Ω     |
| Off State Junction Capacitance               | CJ              | 0Vdc Bias f=1MHz                            | -    | -    | 25   | рF    |

### NOTE:

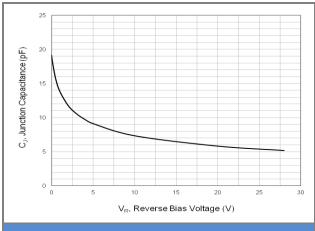
2. Dynamic resistance calculated form  $I_{PP}$ =1A to  $I_{PP}$ =3A.

<sup>1.</sup>A transient suppressor is selected according to the working peak reverse voltage(V<sub>RWM</sub>), which should be equal to or greater than the DC or continuous peak operation voltage level.





# TYPICAL CHARACTERISTIC CURVES



**Fig.1 Typical Junction Capacitance** 

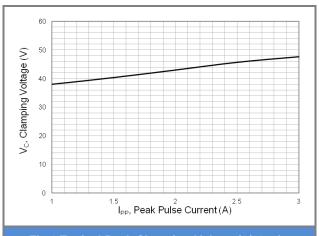


Fig.2 Typical Peak Clamping Voltage(8/20μs)

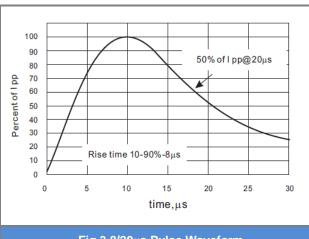


Fig.3 8/20µs Pulse Waveform

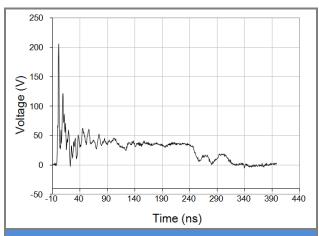
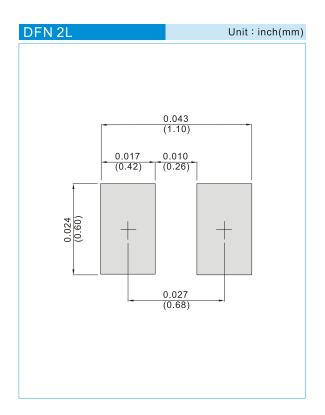


Fig.4 ESD Clamping (+8kV Contact per IEC61000-4-2)





# **MOUNTING PAD LAYOUT**



### ORDER INFORMATION

• Packing information T/R – 8K per 7" plastic Reel

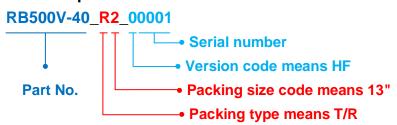




# Part No\_packing code\_Version

PJE28VM2FN2\_R1\_00001

# For example:



| Packing Code XX                      |                         |                                     | Version Code XXXXX      |               |                         |  |
|--------------------------------------|-------------------------|-------------------------------------|-------------------------|---------------|-------------------------|--|
| Packing type                         | 1 <sup>st</sup><br>Code | Packing size code                   | 2 <sup>nd</sup><br>Code | HF or<br>RoHS | 1 <sup>st</sup><br>Code | 2 <sup>nd</sup> ~5 <sup>th</sup><br>Code |
| Tape and Ammunition<br>Box (T/B)     | A                       | N/A                                 | 0                       | HF            | 0                       | serial<br>number                         |
| Tape and Reel (T/R)                  | R                       | 7"                                  | 1                       | RoHS          | 1                       | serial<br>number                         |
| Bulk Packing (B/P)                   | В                       | 13"                                 | 2                       |               |                         |  |
| Tube Packing (T/P)                   | Т                       | <b>26mm</b>                         | X                       |               |                         |  |
| Tape and Reel (Right Oriented) (TRR) | S                       | 52mm                                | Y                       |               |                         |  |
| Tape and Reel (Left Oriented) (TRL)  | ٦                       | PANASERT T/B<br>CATHODE UP (PBCU)   | U                       |               |                         |  |
| FORMING                              | F                       | PANASERT T/B<br>CATHODE DOWN (PBCD) | D                       |               |                         |  |





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