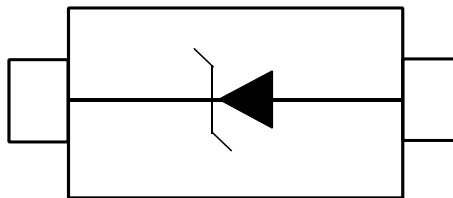


Small Surface Mount TVS Diodes

Features

- Stand-off Voltage: 3.3 – 64 Volts
- Peak Power – 400 Watts @ 1 ms (PESDU03331D1F – PESDU6431D1F)
- Low Leakage
- Response Time is Typically < 1 ns
- ESD Rating of above 16 kV per Human Body Model
- ESD Rating of above 30 kV (Contact Discharge) per IEC61000-4-2
- EFT (Electrical Fast Transients) Rating of 40 A per IEC61000-4-4
- Low Profile – Maximum Height of 1.0 mm
- Small Footprint – Footprint Area of 8.45 mm²
- Supplied in 8 mm Tape and Reel – 3,000 Units per Reel
- Cathode Indicated by Polarity Band
- Lead Orientation in Tape: Cathode Lead to Sprocket Holes
- Meets MSL 1 Requirements
- Solid-state silicon avalanche technology
- ROHS compliant
- WeiPan technology



Circuit and Pin Schematic

Ordering Information

| Device | Qty per Reel | Reel Size |
|--------------|--------------|-----------|
| PESDUxx31D1F | 3000 | 7 Inch |

“xx” =Working Peak Reverse Voltage

Maximum ratings (Tamb=25°C Unless Otherwise Specified)

| Parameter | Symbol | Value | Unit |
|--|--------|---------------|-------|
| Maximum Ppk Dissipation (PW=10/1000us) (Note 1) PESDU03331 – PESDU6431D1F | Ppk | 400 | W |
| Maximum Ppk Dissipation @ TA = 25°C, (PW=8/20us) (Note 2) | Ppk | 2000 | W |
| DC Power Dissipation @TA=25°C (Note 3) Derate above 25°C | PD | 1000 | mW |
| Thermal Resistance, Junction-to-Ambient (Note 3) | RJA | 4.0 | mW/°C |
| Lead Soldering Temperature | TL | 325 | °C/W |
| Operating Temperature Range | TJ | 260 (10 sec.) | °C |
| Storage Temperature Range | TSTG | -55 ~ 150 | °C |
| Lead Solder Temperature – Maximum (10 Second Duration) | TL | 260 | °C |

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

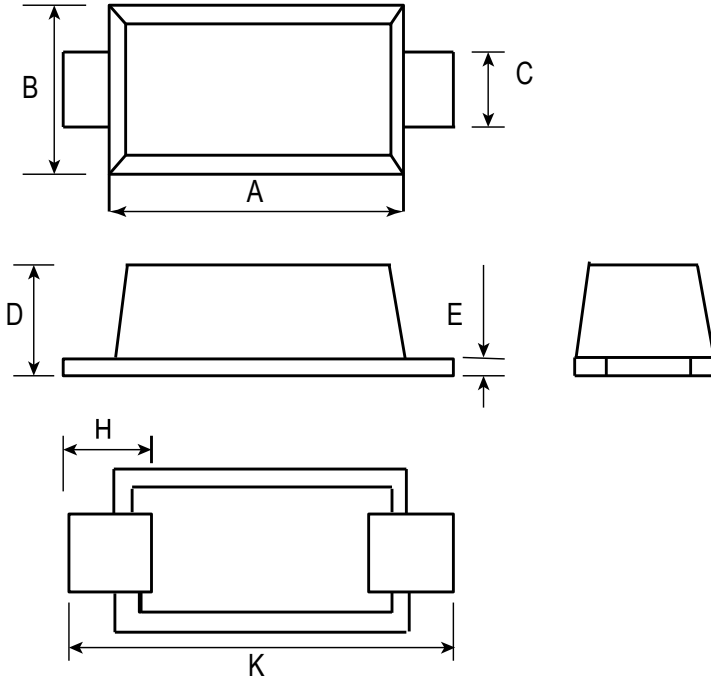
1. Non-repetitive current pulse at TA = 25°C, per waveform of Figure 2.
2. Non-repetitive current pulse at TA = 25°C, per waveform of Figure 3.
3. Mounted with recommended minimum pad size, DC board FR-4.

Electrical characteristics (Tamb=25°C Unless Otherwise Specified)

| Device | Marking | V _{RWM} (V) (Note 5) | V _{BR} @ I _T (V) (Note 6) | | | I _T | I _R @ V _{RWM} | V _C (Max) | I _{PP} (Max) (Note7) | ESD Immunity acc. IEC 61000-4-2 (kV) |
|---------------|---------|----------------------------------|---|-------|------|----------------|--------------------------------------|----------------------|----------------------------------|---|
| | | (V) | Min | Nom | Max | (mA) | (A) | (V) | (A) | |
| PESDU03331D1F | A1 | 3.3 | 5.20 | 5.60 | 6.00 | 10 | 600 | 8.0 | 43.8 | ± 30 |
| PESDU0531D1F | A2 | 5.0 | 6.40 | 6.80 | 7.25 | 10 | 400 | 9.2 | 43.5 | ± 30 |
| PESDU0631D1F | A3 | 6.0 | 6.67 | 7.02 | 7.37 | 10 | 400 | 10.3 | 38.8 | ± 30 |
| PESDU06531D1F | A4 | 6.5 | 7.22 | 7.60 | 7.98 | 10 | 250 | 11.2 | 35.7 | ± 30 |
| PESDU0731D1F | A5 | 7.0 | 7.78 | 8.20 | 8.60 | 10 | 100 | 12.0 | 33.3 | ± 30 |
| PESDU07531D1F | A6 | 7.5 | 8.33 | 8.77 | 9.21 | 1 | 50 | 12.9 | 31.0 | ± 30 |
| PESDU0831D1F | A7 | 8.0 | 8.89 | 9.36 | 9.83 | 1 | 25 | 13.6 | 29.4 | ± 30 |
| PESDU08531D1F | A8 | 8.5 | 9.44 | 9.92 | 10.4 | 1 | 10 | 14.4 | 27.8 | ± 30 |
| PESDU0931D1F | A9 | 9.0 | 10.0 | 10.55 | 11.1 | 1 | 5.0 | 15.4 | 26.0 | ± 30 |
| PESDU1031D1F | AA | 10 | 11.1 | 11.70 | 12.3 | 1 | 2.5 | 17.0 | 23.5 | ± 30 |
| PESDU1131D1F | AB | 11 | 12.2 | 12.85 | 13.5 | 1 | 2.5 | 18.2 | 22.0 | ± 30 |
| PESDU1231D1F | AC | 12 | 13.3 | 14.00 | 14.7 | 1 | 2.5 | 19.9 | 20.1 | ± 30 |
| PESDU1331D1F | AD | 13 | 14.4 | 15.15 | 15.9 | 1 | 1 | 21.5 | 18.6 | ± 30 |
| PESDU1431D1F | AE | 14 | 15.6 | 16.40 | 17.2 | 1 | 1 | 23.2 | 17.2 | ± 30 |
| PESDU1531D1F | AF | 15 | 16.7 | 17.60 | 18.5 | 1 | 1 | 24.4 | 16.4 | ± 30 |
| PESDU1631D1F | AG | 16 | 17.8 | 18.75 | 19.7 | 1 | 1 | 26.0 | 15.4 | ± 30 |
| PESDU1731D1F | AH | 17 | 18.9 | 19.90 | 20.9 | 1 | 1 | 27.6 | 14.5 | ± 30 |
| PESDU1831D1F | AK | 18 | 20.0 | 21.00 | 22.1 | 1 | 1 | 29.2 | 13.7 | ± 30 |
| PESDU2031D1F | AL | 20 | 22.2 | 23.35 | 24.5 | 1 | 1 | 32.4 | 12.3 | ± 30 |
| PESDU2231D1F | AM | 22 | 24.4 | 25.60 | 26.9 | 1 | 1 | 35.5 | 11.3 | ± 30 |
| PESDU2431D1F | AM | 24 | 26.7 | 28.10 | 29.5 | 1 | 1 | 38.9 | 10.3 | ± 30 |
| PESDU2631D1F | AP | 26 | 28.9 | 30.40 | 31.9 | 1 | 1 | 42.1 | 9.5 | ± 30 |
| PESDU2831D1F | AR | 28 | 31.1 | 32.80 | 34.4 | 1 | 1 | 45.4 | 8.8 | ± 30 |
| PESDU3031D1F | AS | 30 | 33.3 | 35.10 | 36.8 | 1 | 1 | 48.4 | 8.3 | ± 30 |
| PESDU3331D1F | AT | 33 | 36.7 | 38.70 | 40.6 | 1 | 1 | 53.3 | 7.5 | ± 30 |
| PESDU3631D1F | AU | 36 | 40.0 | 42.10 | 44.2 | 1 | 1 | 58.1 | 6.9 | ± 30 |
| PESDU4031D1F | AV | 40 | 44.4 | 46.80 | 49.1 | 1 | 0.1 | 64.5 | 6.2 | ± 30 |
| PESDU4331D1F | AW | 43 | 47.8 | 50.30 | 52.8 | 1 | 0.1 | 69.4 | 5.8 | ± 30 |
| PESDU4531D1F | AX | 45 | 50.0 | 52.65 | 55.3 | 1 | 0.1 | 72.7 | 5.5 | ± 30 |
| PESDU4831D1F | AY | 48 | 53.3 | 56.10 | 58.9 | 1 | 1 | 77.4 | 5.2 | ± 30 |
| PESDU5131D1F | AZ | 51 | 56.7 | 59.70 | 62.7 | 1 | 1 | 82.4 | 4.9 | ± 30 |
| PESDU5431D1F | B1 | 54 | 60.0 | 63.15 | 66.3 | 1 | 0.1 | 87.1 | 4.6 | ± 30 |
| PESDU5831D1F | B2 | 58 | 64.4 | 67.80 | 71.2 | 1 | 1 | 93.6 | 4.2 | ± 30 |
| PESDU6031D1F | B3 | 60 | 66.7 | 70.20 | 73.7 | 1 | 0.1 | 96.8 | 4.1 | ± 30 |
| PESDU6431D1F | B4 | 64 | 71.1 | 74.85 | 78.6 | 1 | 0.1 | 103 | 3.9 | ± 30 |

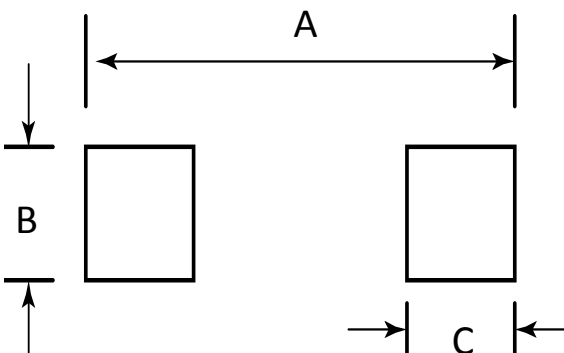
5. A transient suppressor is normally selected according to the Working Peak Reverse Voltage (V_{RWM}) which should be equal to or greater than the DC or continuous peak operating voltage level.
 6. V_{BR} measured at pulse test current I_T at ambient temperature of 25°C.
 7. Surge current waveform per Figure 2 and derate per Figure 3.
- * Include SZ-prefix devices where applicable.

SOD-123FL Package Outline Drawing



| DIM | Millimeters | | |
|-----|-------------|------|------|
| | Min | Nom | Max |
| A | 2.70 | 2.80 | 2.90 |
| B | 1.80 | 1.90 | 2.00 |
| C | 0.80 | 1.00 | 1.20 |
| D | | | 1.45 |
| E | 0.10 | 0.20 | 0.30 |
| H | 0.35 | | 0.85 |
| K | 3.50 | | 3.90 |

Suggested Land Pattern



| SYM | DIMENSIONS | |
|-----|-------------|--------|
| | MILLIMETERS | INCHES |
| A | 4.19 | 0.165 |
| B | 1.20 | 0.048 |
| C | 0.90 | 0.036 |

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[MPLAD30KP43CAE3](#) [SMAJ43A-TP](#) [D26V0H1U2LP16-7](#)