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3KP SREIES

SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR PEAK PULSE POWER 3000 Watts

STAND-OFF VOLTAGE

5.0 to 220 Volts

P-600

Unit: inch(mm)

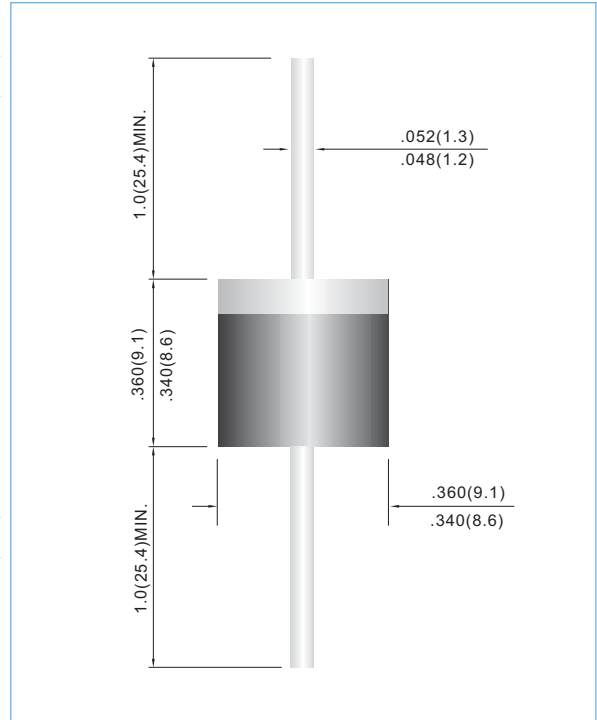
Recongized File # E210467

FEATURES

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Glass passivated chip junction in P-600 package
- 3000W Peak Pulse Power capability at on 10/1000µs waveform
- Excellent clamping capability
- Low zener impedance
- Repetition rate(Duty Cycle):.05%
- Fast response time: typically less than 1.0 ps from 0 volts to BV min
- Typical IR less than 1µA above 10V
- High temperature soldering guaranteed: 260°C/10 seconds/.375" (9.5mm) lead length/5lbs., (2.3kg) tension
- In compliance with EU RoHS 2002/95/EC directives

MECHANICALDATA

- Case: JEDEC P600 molded plastic
- Terminals: Axial leads, solderable per MIL-STD-750, Method 2026
- Polarity: Color band denoted cathode except Bipolar
- Mounting Position: Any
- Weight: 1.75 ounce, 0.067 gram



DEVICES FOR BIPOLAR APPLICATIONS

For Bidirectional use C or CA Suffix for types 3KP5.0 thru types 3KP220

Electrical characteristics apply in both directions.

MAXIMUM RATINGS AND CHARACTERISTICS

Rating at 25°C ambient temperature unless otherwise specified.

| Rating | Symbol | Value | Units |
|--|-----------------|-------------|-----------------------------|
| Peak Power Dissipation at $T_A=25^\circ\text{C}$, $T_p=1\text{ms}$ (Note 1) | P_{PK} | 3000 | Watts |
| Typical Thermal Resistance Junction to Air Lead Lengths .375", (9.5mm) (Note 2) | $R_{\theta JA}$ | 15 | $^\circ\text{C} / \text{W}$ |
| Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed on Rated Load (JECED Method) (Note 3) | I_{FSM} | 300 | Amps |
| Operating Junction and Storage Temperature Range | T_J, T_{STG} | -55 to +175 | $^\circ\text{C}$ |

NOTES:

- 1.Non-repetitive current pulse, per Fig. 3 and derated above $T_A=25^\circ\text{C}$ per Fig. 2.
- 2.Mounted on Copper Leaf area of 0.79in²(20mm²).
- 3.8.3ms single half sine-wave, duty cycle= 4 pulses per minutes maximum.

3KP SREIES

| Part Number | | V _{VRWM} | V _{BR} @ I _T | | | I _R @ V _{VRWM} | | V _C @ I _{FP} | | Marking Code | |
|---|----------|-------------------|----------------------------------|-------|----------------|------------------------------------|------|----------------------------------|-------|--------------|----------|
| | | | Min. | Max. | I _T | UNI- | BI- | V | A | UNI- | BI- |
| UNI- | BI- | V | V | V | mA | μA | μA | V | A | UNI- | BI- |
| 3000W Transient Voltage Suppressor | | | | | | | | | | | |
| 3KP5.0 | 3KP5.0C | 5 | 6.4 | 7.55 | 10 | 1000 | 2000 | 9.6 | 312.5 | 3KP5.0 | 3KP5.0C |
| 3KP5.0A | 3KP5.0CA | 5 | 6.4 | 7.25 | 10 | 1000 | 2000 | 9.2 | 326 | 3KP5.0A | 3KP5.0CA |
| 3KP6.0 | 3KP6.0C | 6 | 6.67 | 8.45 | 10 | 1000 | 2000 | 11.4 | 263.2 | 3KP6.0 | 3KP6.0C |
| 3KP6.0A | 3KP6.0CA | 6 | 6.67 | 7.67 | 10 | 1000 | 2000 | 10.3 | 291.3 | 3KP6.0A | 3KP6.0CA |
| 3KP6.5 | 3KP6.5C | 6.5 | 7.22 | 9.14 | 10 | 500 | 1000 | 12.3 | 243.9 | 3KP6.5 | 3KP6.5C |
| 3KP6.5A | 3KP6.5CA | 6.5 | 7.22 | 8.3 | 10 | 500 | 1000 | 11.2 | 267.9 | 3KP6.5A | 3KP6.5CA |
| 3KP7.0 | 3KP7.0C | 7 | 7.78 | 9.86 | 10 | 200 | 400 | 13.3 | 225.6 | 3KP7.0 | 3KP7.0C |
| 3KP7.0A | 3KP7.0CA | 7 | 7.78 | 8.95 | 10 | 200 | 400 | 12 | 250 | 3KP7.0A | 3KP7.0CA |
| 3KP7.5 | 3KP7.5C | 7.5 | 8.33 | 10.67 | 1 | 100 | 200 | 14.3 | 209.8 | 3KP7.5 | 3KP7.5C |
| 3KP7.5A | 3KP7.5CA | 7.5 | 8.33 | 9.58 | 1 | 100 | 200 | 12.9 | 232.6 | 3KP7.5A | 3KP7.5CA |
| 3KP8.0 | 3KP8.0C | 8 | 8.89 | 11.3 | 1 | 50 | 100 | 15 | 220 | 3KP8.0 | 3KP8.0C |
| 3KP8.0A | 3KP8.0CA | 8 | 8.89 | 10.23 | 1 | 50 | 100 | 13.6 | 220.6 | 3KP8.0A | 3KP8.0CA |
| 3KP8.5 | 3KP8.5C | 8.5 | 9.44 | 11.92 | 1 | 25 | 50 | 15.9 | 188.8 | 3KP8.5 | 3KP8.5C |
| 3KP8.5A | 3KP8.5CA | 8.5 | 9.44 | 10.82 | 1 | 25 | 50 | 14.4 | 208.4 | 3KP8.5A | 3KP8.5CA |
| 3KP9.0 | 3KP9.0C | 9 | 10 | 12.6 | 1 | 10 | 20 | 16.9 | 177.4 | 3KP9.0 | 3KP9.0C |
| 3KP9.0A | 3KP9.0CA | 9 | 10 | 11.5 | 1 | 10 | 20 | 15.4 | 194.8 | 3KP9.0A | 3KP9.0CA |
| 3KP10 | 3KP10C | 10 | 11.1 | 14.1 | 1 | 3 | 3 | 18.8 | 159.6 | 3KP10 | 3KP10C |
| 3KP10A | 3KP10CA | 10 | 11.1 | 12.8 | 1 | 3 | 3 | 17 | 176.4 | 3KP10A | 3KP10CA |
| 3KP11 | 3KP11C | 11 | 12.2 | 15.4 | 1 | 3 | 3 | 20.1 | 149.2 | 3KP11 | 3KP11C |
| 3KP11A | 3KP11CA | 11 | 12.2 | 14 | 1 | 3 | 3 | 18.2 | 184.8 | 3KP11A | 3KP11CA |
| 3KP12 | 3KP12C | 12 | 13.3 | 16.9 | 1 | 3 | 3 | 22 | 136.4 | 3KP12 | 3KP12C |
| 3KP12A | 3KP12CA | 12 | 13.3 | 15.3 | 1 | 3 | 3 | 19.9 | 150.6 | 3KP12A | 3KP12CA |
| 3KP13 | 3KP13C | 13 | 14.4 | 18.2 | 1 | 3 | 3 | 23.8 | 126 | 3KP13 | 3KP13C |
| 3KP13A | 3KP13CA | 13 | 14.4 | 16.5 | 1 | 3 | 3 | 21.5 | 139.4 | 3KP13A | 3KP13CA |
| 3KP14 | 3KP14C | 14 | 15.6 | 19.8 | 1 | 3 | 3 | 25.8 | 116.2 | 3KP14 | 3KP14C |
| 3KP14A | 3KP14CA | 14 | 15.6 | 17.9 | 1 | 3 | 3 | 23.2 | 129.4 | 3KP14A | 3KP14CA |
| 3KP15 | 3KP15C | 15 | 16.7 | 21.1 | 1 | 3 | 3 | 26.9 | 111.6 | 3KP15 | 3KP15C |
| 3KP15A | 3KP15CA | 15 | 16.7 | 19.2 | 1 | 3 | 3 | 24.4 | 123 | 3KP15A | 3KP15CA |
| 3KP16 | 3KP16C | 16 | 17.8 | 22.6 | 1 | 3 | 3 | 28.8 | 104.2 | 3KP16 | 3KP16C |
| 3KP16A | 3KP16CA | 16 | 17.8 | 20.5 | 1 | 3 | 3 | 26 | 115.4 | 3KP16A | 3KP16CA |
| 3KPJ17 | 3KPJ17C | 17 | 18.9 | 23.9 | 1 | 3 | 3 | 30.5 | 98.4 | 3KPJ17 | 3KPJ17C |
| 3KP17A | 3KP17CA | 17 | 18.9 | 21.7 | 1 | 3 | 3 | 27.6 | 106.6 | 3KP17A | 3KP17CA |
| 3KP18 | 3KP18C | 18 | 20 | 25.3 | 1 | 3 | 3 | 32.2 | 93.2 | 3KP18 | 3KP18C |
| 3KP18A | 3KP18CA | 18 | 20 | 23.3 | 1 | 3 | 3 | 29.2 | 102.8 | 3KP18A | 3KP18CA |
| 3KP20 | 3KP20C | 20 | 22.2 | 28.1 | 1 | 3 | 3 | 35.8 | 83.8 | 3KP20 | 3KP20C |
| 3KP20A | 3KP20CA | 20 | 22.2 | 25.5 | 1 | 3 | 3 | 32.4 | 92.6 | 3KP20A | 3KP20CA |
| 3KP22 | 3KP22C | 22 | 24.4 | 30.9 | 1 | 3 | 3 | 39.4 | 76.2 | 3KP22 | 3KP22C |
| 3KP22A | 3KP22CA | 22 | 24.4 | 28 | 1 | 3 | 3 | 35.5 | 84.4 | 3KP22A | 3KP22CA |
| 3KP24 | 3KP24C | 24 | 26.7 | 33.8 | 1 | 3 | 3 | 43 | 69.8 | 3KP24 | 3KP24C |
| 3KP24A | 3KP24CA | 24 | 26.7 | 30.7 | 1 | 3 | 3 | 38.9 | 77.2 | 3KP24A | 3KP24CA |
| 3KP26 | 3KP26C | 26 | 28.9 | 36.6 | 1 | 3 | 3 | 46.6 | 64.4 | 3KP26 | 3KP26C |
| 3KP26A | 3KP26CA | 26 | 28.9 | 33.2 | 1 | 3 | 3 | 42.1 | 71.2 | 3KP26A | 3KP26CA |
| 3KP28 | 3KP28C | 28 | 31.1 | 39.4 | 1 | 3 | 3 | 50 | 60 | 3KP28 | 3KP28C |
| 3KP28A | 3KP28CA | 28 | 31.1 | 35.8 | 1 | 3 | 3 | 45.4 | 66 | 3KP28A | 3KP28CA |
| 3KP30 | 3KP30C | 30 | 33.3 | 42.2 | 1 | 3 | 3 | 53.5 | 56 | 3KP30 | 3KP30C |
| 3KP30A | 3KP30CA | 30 | 33.3 | 38.3 | 1 | 3 | 3 | 48.4 | 62 | 3KP30A | 3KP30CA |
| 3KP33 | 3KP33C | 33 | 36.7 | 46.5 | 1 | 3 | 3 | 59 | 50.4 | 3KP33 | 3KP33C |
| 3KP33A | 3KP33CA | 33 | 36.7 | 42.2 | 1 | 3 | 3 | 53.3 | 56.2 | 3KP33A | 3KP33CA |
| 3KP36 | 3KP36C | 36 | 40 | 50.7 | 1 | 3 | 3 | 64.3 | 46.6 | 3KP36 | 3KP36C |
| 3KP36A | 3KP36CA | 36 | 40 | 46 | 1 | 3 | 3 | 58.1 | 51.6 | 3KP36A | 3KP36CA |
| 3KP40 | 3KP40C | 40 | 44.4 | 56.3 | 1 | 3 | 3 | 71.4 | 42 | 3KP40 | 3KP40C |



3KP SREIES

| Part Number | | V _{RWM} | V _{BR} @ I _T | | | I _r @ V _{RWM} | | V _c @ I _{PP} | | Marking Code | |
|---|----------|------------------|----------------------------------|-------|----------------|-----------------------------------|-----|----------------------------------|------|--------------|----------|
| UNI- | BI- | | Min. | Max. | I _T | UNI- | BI- | V | A | UNI- | BI- |
| | | V | V | V | mA | μA | μA | | | | |
| 3000W Transient Voltage Suppressor | | | | | | | | | | | |
| 3KP40A | 3KP40CA | 40 | 44.4 | 51.1 | 1 | 3 | 3 | 64.5 | 46.4 | 3KP40A | 3KP40CA |
| 3KP43 | 3KP43C | 43.00 | 47.8 | 60.5 | 1 | 3 | 3 | 76.7 | 39.2 | 3KP43 | 3KP43C |
| 3KP43A | 3KP43CA | 43 | 47.8 | 54.9 | 1 | 3 | 3 | 69.4 | 43.2 | 3KP43A | 3KP43CA |
| 3KP45 | 3KP45C | 45 | 50 | 63.3 | 1 | 3 | 3 | 80.3 | 37.4 | 3KP45 | 3KP45C |
| 3KP45A | 3KP45CA | 45 | 50 | 57.5 | 1 | 3 | 3 | 72.7 | 41.2 | 3KP45A | 3KP45CA |
| 3KP48 | 3KP48C | 48 | 53.3 | 67.5 | 1 | 3 | 3 | 85.5 | 35 | 3KP48 | 3KP48C |
| 3KP48A | 3KP48CA | 48 | 53.3 | 61.3 | 1 | 3 | 3 | 77.4 | 38.8 | 3KP48A | 3KP48CA |
| 3KP51 | 3KP51C | 51 | 56.7 | 71.8 | 1 | 3 | 3 | 91.1 | 37 | 3KP51 | 3KP51C |
| 3KP51A | 3KP51CA | 51 | 56.7 | 65.2 | 1 | 3 | 3 | 82.4 | 36.4 | 3KP51A | 3KP51CA |
| 3KP54 | 3KP54C | 54 | 60 | 76 | 1 | 3 | 3 | 96.3 | 31.2 | 3KP54 | 3KP54C |
| 3KP54A | 3KP54CA | 54 | 60 | 69 | 1 | 3 | 3 | 87.1 | 34.4 | 3KP54A | 3KP54CA |
| 3KP58 | 3KP58C | 58 | 64.4 | 81.6 | 1 | 3 | 3 | 103 | 29.2 | 3KP58 | 3KP58C |
| 3KP58A | 3KP58CA | 58 | 64.4 | 74.1 | 1 | 3 | 3 | 93.6 | 32 | 3KP58A | 3KP58CA |
| 3KP60 | 3KP60C | 60 | 66.7 | 84.5 | 1 | 3 | 3 | 107 | 28 | 3KP60 | 3KP60C |
| 3KP60A | 3KP60CA | 60 | 66.7 | 76.7 | 1 | 3 | 3 | 96.8 | 31 | 3KP60A | 3KP60CA |
| 3KP64 | 3KP64C | 64 | 71.1 | 90.1 | 1 | 3 | 3 | 114 | 26.4 | 3KP64 | 3KP64C |
| 3KP64A | 3KP64CA | 64 | 71.1 | 81.8 | 1 | 3 | 3 | 103 | 29.2 | 3KP64A | 3KP64CA |
| 3KP70 | 3KP70C | 70 | 77.8 | 98.6 | 1 | 3 | 3 | 125 | 24 | 3KP70 | 3KP70C |
| 3KP70A | 3KP70CA | 70 | 77.8 | 89.5 | 1 | 3 | 3 | 113 | 26.6 | 3KP70A | 3KP70CA |
| 3KP75 | 3KP75C | 75 | 83.3 | 105.7 | 1 | 3 | 3 | 134 | 22.4 | 3KP75 | 3KP75C |
| 3KP75A | 3KP75CA | 75 | 83.3 | 95.8 | 1 | 3 | 3 | 121 | 24.8 | 3KP75A | 3KP75CA |
| 3KP78 | 3KP78C | 78 | 86.7 | 109.8 | 1 | 3 | 3 | 139 | 21.6 | 3KP78 | 3KP78C |
| 3KP78A | 3KP78CA | 78 | 86.7 | 99.7 | 1 | 3 | 3 | 126 | 22.8 | 3KP78A | 3KP78CA |
| 3KP85 | 3KP85C | 85 | 94.4 | 119.2 | 1 | 3 | 3 | 151 | 19.8 | 3KP85 | 3KP85C |
| 3KP85A | 3KP85CA | 85 | 94.4 | 108.2 | 1 | 3 | 3 | 137 | 20.8 | 3KP85A | 3KP85CA |
| 3KP90 | 3KP90C | 90 | 100 | 126.5 | 1 | 3 | 3 | 160 | 18.8 | 3KP90 | 3KP90C |
| 3KP90A | 3KP90CA | 90 | 100 | 115.5 | 1 | 3 | 3 | 146 | 20.6 | 3KP90A | 3KP90CA |
| 3KP100 | 3KP100C | 100 | 111 | 141 | 1 | 3 | 3 | 179 | 16.6 | 3KP100 | 3KP100C |
| 3KP100A | 3KP100CA | 100 | 111 | 128 | 1 | 3 | 3 | 162 | 18.6 | 3KP100A | 3KP100CA |
| 3KP110 | 3KP110C | 110 | 122 | 154.5 | 1 | 3 | 3 | 196 | 15.4 | 3KP110 | 3KP110C |
| 3KP110A | 3KP110CA | 110 | 122 | 140.5 | 1 | 3 | 3 | 177 | 16.8 | 3KP110A | 3KP110CA |
| 3KP120 | 3KP120C | 120 | 133 | 169 | 1 | 3 | 3 | 214 | 14 | 3KP120 | 3KP120C |
| 3KP120A | 3KP120CA | 120 | 133 | 153 | 1 | 3 | 3 | 193 | 15.6 | 3KP120A | 3KP120CA |
| 3KP130 | 3KP130C | 130 | 144 | 182.5 | 1 | 3 | 3 | 231 | 13 | 3KP130 | 3KP130C |
| 3KP130A | 3KP130CA | 130 | 144 | 165.5 | 1 | 3 | 3 | 209 | 14.4 | 3KP130A | 3KP130CA |
| 3KP150 | 3KP150C | 150 | 167 | 211.5 | 1 | 3 | 3 | 268 | 11.2 | 3KP150 | 3KP150C |
| 3KP150A | 3KP150CA | 150 | 167 | 192.5 | 1 | 3 | 3 | 243 | 12.4 | 3KP150A | 3KP150CA |
| 3KP160 | 3KP160C | 160 | 178 | 226 | 1 | 3 | 3 | 287 | 10.4 | 3KP160 | 3KP160C |
| 3KP160A | 3KP160CA | 160 | 178 | 205 | 1 | 3 | 3 | 259 | 11.6 | 3KP160A | 3KP160CA |
| 3KP170 | 3KP170C | 170 | 189 | 239.5 | 1 | 3 | 3 | 304 | 9.8 | 3KP170 | 3KP170C |
| 3KP170A | 3KP170CA | 170 | 189 | 217.5 | 1 | 3 | 3 | 275 | 11 | 3KP170A | 3KP170CA |
| 3KP180 | 3KP180C | 180 | 198 | 253.8 | 1 | 3 | 3 | 322 | 9.3 | 3KP180 | 3KP180C |
| 3KP180A | 3KP180CA | 180 | 198 | 230.4 | 1 | 3 | 3 | 292 | 10.3 | 3KP180A | 3KP180CA |
| 3KP190 | 3KP190C | 190 | 209 | 267.9 | 1 | 3 | 3 | 340 | 8.8 | 3KP190 | 3KP190C |
| 3KP190A | 3KP190CA | 190 | 209 | 243.2 | 1 | 3 | 3 | 308 | 9.7 | 3KP190A | 3KP190CA |
| 3KP200 | 3KP200C | 200 | 220 | 282 | 1 | 3 | 3 | 358 | 8.4 | 3KP200 | 3KP200C |
| 3KP200A | 3KP200CA | 200 | 220 | 256 | 1 | 3 | 3 | 324 | 9.3 | 3KP200A | 3KP200CA |
| 3KP210 | 3KP210C | 210 | 231 | 296.1 | 1 | 3 | 3 | 376 | 7.8 | 3KP210 | 3KP210C |
| 3KP210A | 3KP210CA | 210 | 231 | 268.8 | 1 | 3 | 3 | 340 | 8.8 | 3KP210A | 3KP210CA |
| 3KP220 | 3KP220C | 220 | 242 | 310.2 | 1 | 3 | 3 | 394 | 7.6 | 3KP220 | 3KP220C |
| 3KP220A | 3KP220CA | 220 | 242 | 281.6 | 1 | 3 | 3 | 356 | 8.4 | 3KP220A | 3KP220CA |



3KP SREIES

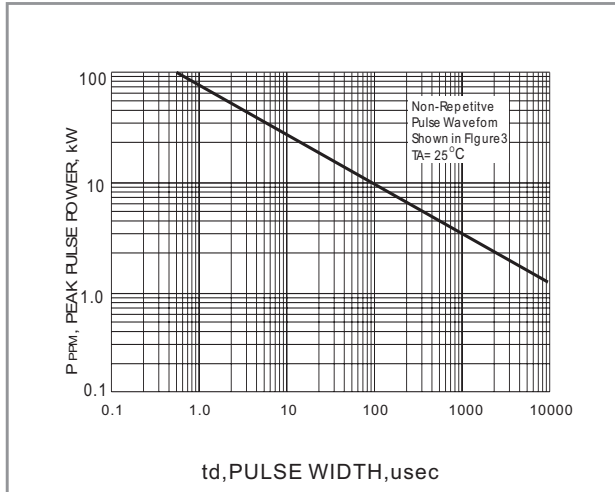


Fig.1 PEAK PULSE POWER RATING VERSUS PULSE TIME CURVE

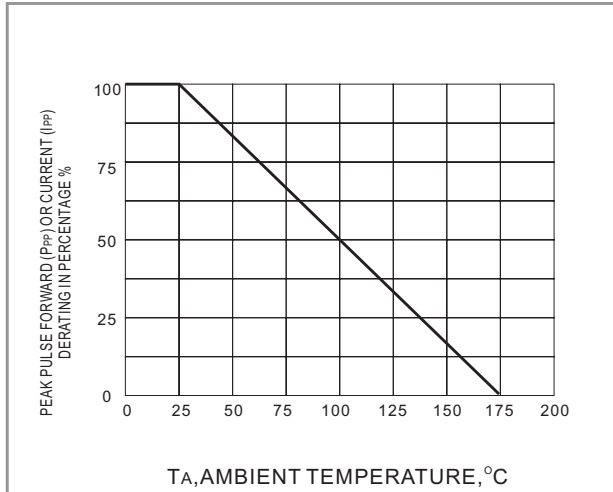


Fig.2 PULSE DERATING CURVE

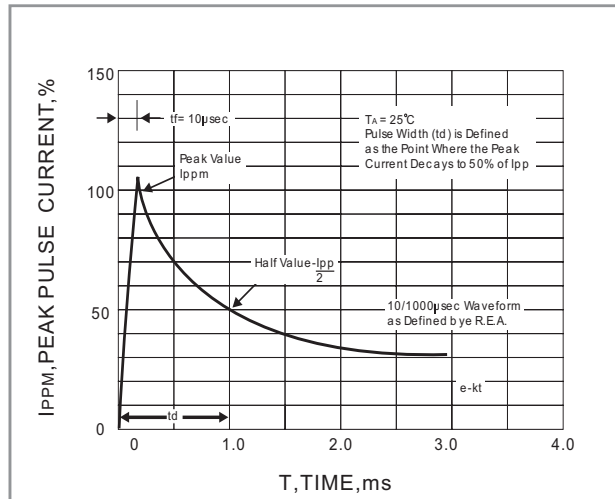


Fig.3 PULSE WAVEFORM

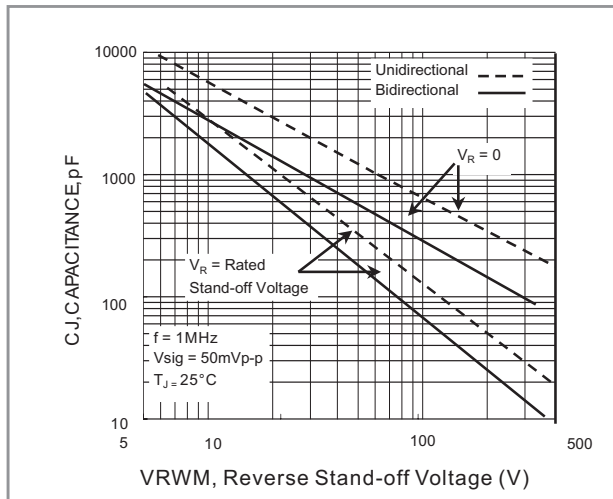


Fig.4 TYPICAL JUNCTION CAPACITANCE

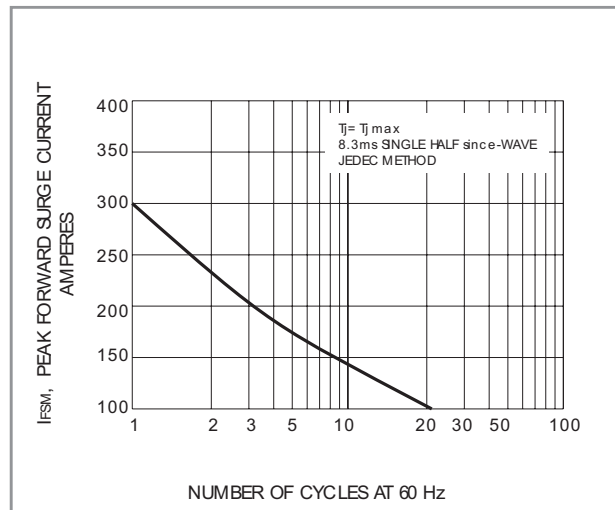
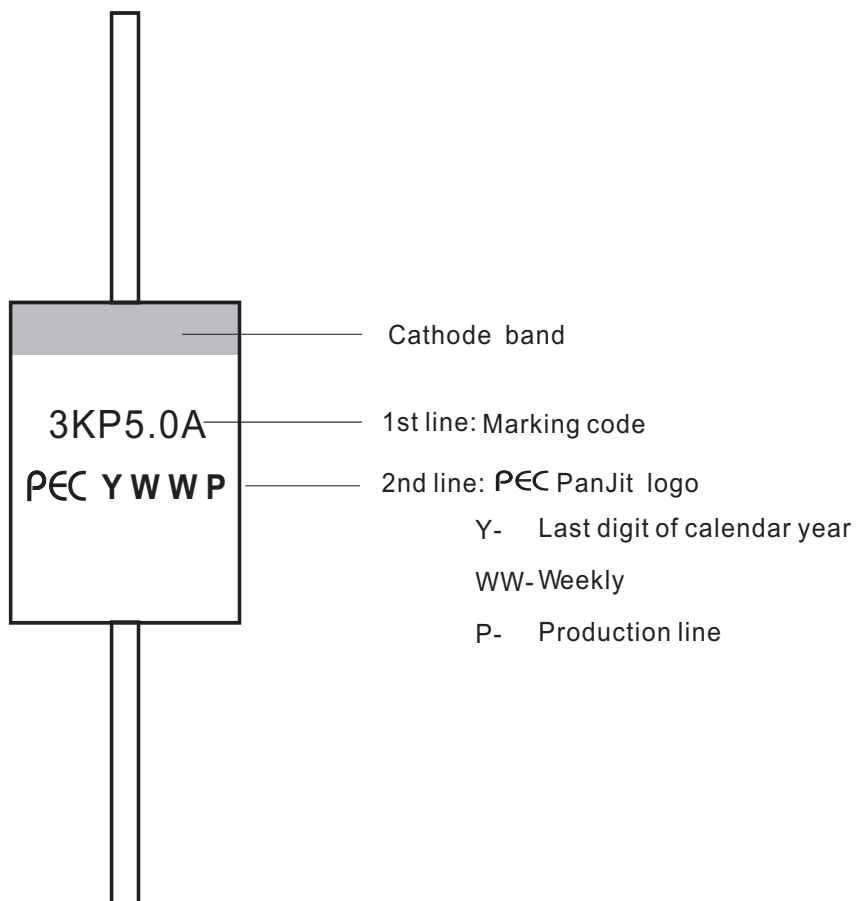


Fig.5 MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT UNIDIRECTIONAL



2. MARKING

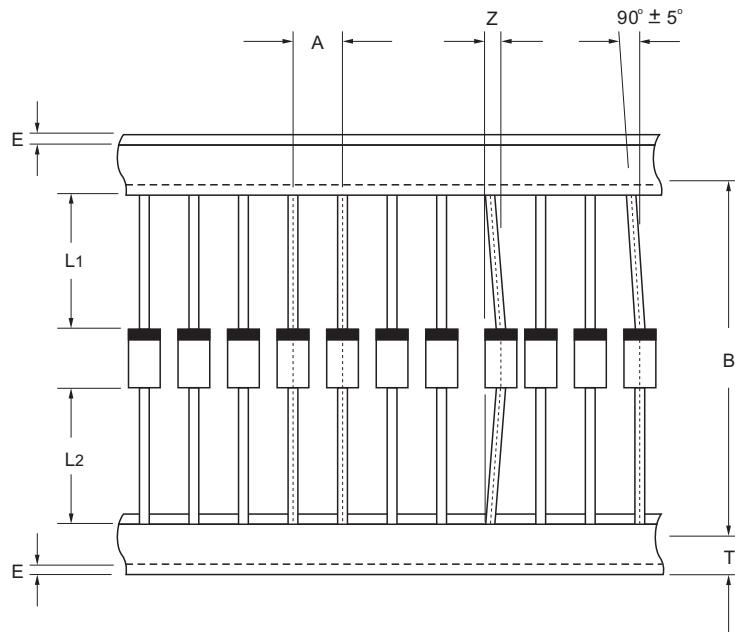




3. TAPING

Axial lead devices are packed in accordance with EIA standard RS-296-E and specifications given below.

| COMPONENT OUTLINE | COMPONENT PITCH A ± 0.5mm | INTER TAPE PITCH B ± 1.0mm | CUMULATIVE PITCH TOLERANCE |
|-------------------|------------------------------|-------------------------------|----------------------------|
| P600 | 10.0mm | 52.0mm | 1.0mm/20pitch |



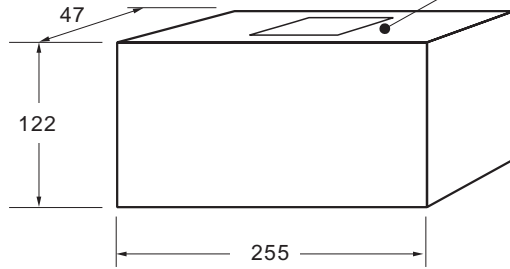
| ITEM | SYMBOL | SPECIFICATIONS(mm) | SPECIFICATIONS(inch) |
|---------------------|--------|--------------------|----------------------|
| Component alignment | Z | 1.2max | 0.048max |
| Tape width | T | 6.0±0.4 | 0.236±0.016 |
| Exposed adhesive | E | 0.8max | 0.032max |
| Body eccentricity | L1-L2 | 1.0max | 0.040max |

NOTES: Each component lead shall be sandwiched between tapes for a minimum of 3.2mm (0.126")



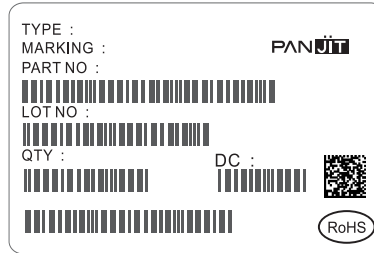
4. PACKING

AMMUNITION PACKING

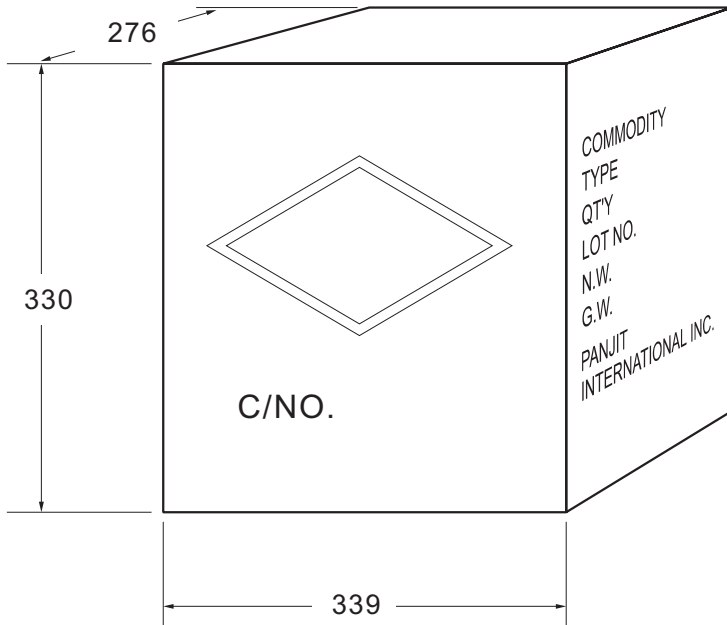


Box Dimensions : mm
Quantity per Box: 400 pcs

LABEL TYPE

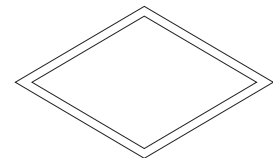


CARTON



Box Dimensions : mm
Quantity per Box: 3,200 pcs

SHIPPING MARK



C/NO.
PRODUCT COUNTRY

SIDE MARK

COMMODITY:
TYPE:
QTY:
LOT NO.
N.W.
G.W.
PANJIT
INTERNATIONAL INC.



Packing Specifications

| Package | Reel Size | Reel | Component Space | Tape Space | Reel Dia | Carton Size | Carton | Approx. Gross Weight |
|---------------------|-----------|--------|-----------------|------------|----------|-----------------|---------|----------------------|
| | (inch) | (pcs) | (m/m) | (m/m) | (m/m) | (m/m) | (EA) | (Kg) |
| Reel Packing | | | | | | | | |
| DFN 2L | 7 | 8,000 | 2 | 8 | 178 | 390 x 270 x 400 | 640,000 | 8.6 |
| DFN 3L | 7 | 8,000 | 2 | 8 | 178 | 390 x 270 x 400 | 640,000 | 8.6 |
| SOD-123 | 7 | 3,000 | 4 | 8 | 178 | 390 x 270 x 400 | 240,000 | 9.9 |
| | 13 | 10,000 | 4 | 8 | 330 | 375 x 360 x 213 | 120,000 | 6.5 |
| SOD-123FL | 7 | 3,000 | 4 | 8 | 178 | 390 x 270 x 400 | 240,000 | 10.6 |
| | 13 | 10,000 | 4 | 8 | 330 | 375 x 360 x 213 | 120,000 | 7.2 |
| SOD-123HE | 7 | 3,000 | 4 | 8 | 178 | 390 x 270 x 400 | 240,000 | 12.4 |
| | 13 | 10,000 | 4 | 8 | 330 | 375 x 360 x 213 | 120,000 | 8.1 |
| SOD-323 | 7 | 5,000 | 4 | 8 | 178 | 390 x 270 x 400 | 400,000 | 9.4 |
| | 13 | 12,000 | 4 | 8 | 330 | 375 x 360 x 213 | 144,000 | 5.9 |
| SOD-523 | 7 | 5,000 | 4 | 8 | 178 | 390 x 270 x 400 | 400,000 | 9.1 |
| | 13 | 12,000 | 4 | 8 | 330 | 375 x 360 x 213 | 144,000 | 5.4 |
| SOD-723 | 7 | 8,000 | 2 | 8 | 178 | 390 x 270 x 400 | 640,000 | 8.5 |
| SOD-923 | 7 | 8,000 | 2 | 8 | 178 | 390 x 270 x 400 | 640,000 | 7.7 |
| SOT-23 | 7 | 3,000 | 4 | 8 | 178 | 390 x 270 x 400 | 240,000 | 9.8 |
| | 13 | 12,000 | 4 | 8 | 330 | 375 x 360 x 213 | 144,000 | 7 |
| SOT-23 (ESD) | 7 | 3,000 | 4 | 8 | 178 | 455 x 270 x 440 | 240,000 | 9.9 |
| SOT-23 5L | 7 | 3,000 | 4 | 8 | 178 | 390 x 270 x 400 | 240,000 | 14.5 |
| | 13 | 10,000 | 4 | 8 | 330 | 375 x 360 x 213 | 120,000 | 7.9 |
| SOT-23 6L | 7 | 3,000 | 4 | 8 | 178 | 390 x 270 x 400 | 240,000 | 14.5 |
| | 13 | 10,000 | 4 | 8 | 330 | 375 x 360 x 213 | 120,000 | 7.9 |
| SOT-323 | 7 | 3,000 | 4 | 8 | 178 | 390 x 270 x 400 | 240,000 | 7.9 |
| | 13 | 12,000 | 4 | 8 | 330 | 375 x 360 x 213 | 144,000 | 6.1 |
| SOT-323 (ESD) | 7 | 3,000 | 4 | 8 | 178 | 455 x 270 x 440 | 240,000 | 9.4 |
| SOT-353 | 7 | 3,000 | 4 | 8 | 178 | 390 x 270 x 400 | 240,000 | 10 |
| | 13 | 10,000 | 4 | 8 | 330 | 375 x 360 x 213 | 120,000 | 7.2 |
| SOT-363 | 7 | 3,000 | 4 | 8 | 178 | 390 x 270 x 400 | 240,000 | 10.2 |
| | 13 | 10,000 | 4 | 8 | 330 | 375 x 360 x 213 | 120,000 | 7.1 |
| SOT-363 (ESD) | 7 | 3,000 | 4 | 8 | 178 | 455 x 270 x 440 | 240,000 | 10 |
| SOT-523 | 7 | 4,000 | 4 | 8 | 178 | 390 x 270 x 400 | 320,000 | 10 |
| SOT-543 | 7 | 4,000 | 4 | 8 | 178 | 390 x 270 x 400 | 320,000 | 9.4 |
| | 13 | 10,000 | 4 | 8 | 330 | 375 x 360 x 213 | 120,000 | 5.2 |
| SOT-553 | 7 | 4,000 | 4 | 8 | 178 | 390 x 270 x 400 | 320,000 | 9.4 |
| | 13 | 10,000 | 4 | 8 | 330 | 375 x 360 x 213 | 120,000 | 5.2 |
| SOT-563 | 7 | 4,000 | 4 | 8 | 178 | 390 x 270 x 400 | 320,000 | 9.4 |
| | 13 | 10,000 | 4 | 8 | 330 | 375 x 360 x 213 | 120,000 | 5.2 |
| SOIC-08 | 13 | 3,000 | 8 | 12 | 330 | 375 x 360 x 213 | 48,000 | 14.2 |



Packing Specifications

| Package | Reel Size | Reel | Component Space | Tape Space | Reel Dia | Carton Size | Carton | Approx. Gross Weight |
|---------------------------|-----------|--------|-----------------|------------|----------|-----------------|---------|----------------------|
| | (inch) | (pcs) | (m/m) | (m/m) | (m/m) | (m/m) | (EA) | (Kg) |
| Reel Packing | | | | | | | | |
| A-405 | - | 5,000 | 5 | 52 | 330 | 340 x 340 x 410 | 25,000 | 7.79 |
| DO-15 | - | 4,000 | 5 | 52 | 330 | 340 x 340 x 410 | 20,000 | 11.4 |
| DO-201AD | - | 1,250 | 10 | 52 | 330 | 340 x 340 x 410 | 6,250 | 9.2 |
| DO-201AE | - | 1,250 | 10 | 52 | 330 | 340 x 340 x 410 | 6,250 | 9.2 |
| DO-34 | 15 | 10,000 | 5 | 52 | 360 | 360 x 360 x 395 | 50,000 | 10.1 |
| DO-35 | 15 | 10,000 | 5 | 52 | 360 | 360 x 360 x 395 | 50,000 | 11.2 |
| DO-41 | - | 5,000 | 5 | 52 | 330 | 340 x 340 x 410 | 25,000 | 10.2 |
| DO-41G | 15 | 5,000 | 5 | 52 | 360 | 360 x 360 x 395 | 25,000 | 10.9 |
| MDI | 13 | 3,000 | 8 | 12 | 330 | 375 x 360 x 390 | 48,000 | 14.7 |
| MELF/DL-41 | 7 | 1,500 | 4 | - | 178 | 385 x 380 x 260 | 84,000 | 18.3 |
| | 13 | 5,000 | 4 | - | 330 | 360 x 360 x 395 | 100,000 | 23.5 |
| MICRO-MELF | 7 | 2,500 | 4 | - | 178 | 385 x 380 x 260 | 200,000 | 9.3 |
| | 13 | 10,000 | 4 | - | 330 | 360 x 360 x 395 | 200,000 | 11.5 |
| MINI-MELF/LL-34 | 7 | 2500 | 4 | - | 178 | 385 x 380 x 260 | 200,000 | 12.7 |
| | 13 | 10,000 | 4 | - | 330 | 360 x 360 x 395 | 200,000 | 14.6 |
| MICRO DIP/TDI | 7 | 1000 | 8 | 12 | 178 | 390 x 240 x 420 | 40,000 | 9.5 |
| | 13 | 4000 | 8 | 12 | 330 | 375 x 360 x 390 | 64,000 | 17 |
| P-600 | - | 800 | 10 | 52 | 330 | 340 x 340 x 410 | 4,000 | 9.9 |
| QUADRO-MELF | 13 | 10,000 | 4 | - | 330 | 360 x 360 x 395 | 200,000 | 14.9 |
| | 7 | 2,500 | 4 | - | 178 | 385 x 380 x 260 | 200,000 | 13.3 |
| R-1 | - | 5,000 | 5 | 52 | 330 | 340 x 340 x 410 | 25,000 | 7.8 |
| SDIP | 13 | 1,500 | 12 | 16 | 330 | 375 x 360 x 390 | 21,000 | 14.3 |
| SMA(W) | 7 | 1,800 | 4 | 12 | 178 | 390 x 240 x 420 | 100,800 | 13 |
| | 13 | 7,500 | 4 | 12 | 330 | 355 x 355 x 400 | 150,000 | 20.4 |
| SMA/DO-214AC | 7 | 1,800 | 4 | 12 | 178 | 390 x 240 x 420 | 72,000 | 10 |
| | 13 | 7,500 | 4 | 12 | 330 | 375 x 360 x 390 | 120,000 | 17.4 |
| SMB/DO-214AA | 7 | 500 | 8 | 12 | 178 | 390 x 240 x 420 | 20,000 | 6.5 |
| | 13 | 3,000 | 8 | 12 | 330 | 375 x 360 x 390 | 48,000 | 13.2 |
| SMC/DO-214AB | 7 | 500 | 8 | 16 | 178 | 390 x 240 x 420 | 15,000 | 8.4 |
| | 13 | 3,000 | 8 | 16 | 330 | 375 x 360 x 390 | 42,000 | 18 |
| TO-252/DPAK | 13 | 3,000 | 8 | 16 | 330 | 375 x 360 x 390 | 42,000 | 18.8 |
| TO-263/D ² PAK | 13 | 800 | 16 | 24 | 330 | 375 x 360 x 390 | 6,400 | 14.5 |



Packing Specifications

| Package | Inner Box Size | Box | Carton Size | Carton | Approx. Gross Weight |
|---------------------|----------------|-------|-----------------|---------|----------------------|
| | (m/m) | (EA) | (m/m) | (EA) | (Kg) |
| Bulk Packing | | | | | |
| A-405 | 198 x 84 x 20 | 1,000 | 459 x 214 x 256 | 50,000 | 12.7 |
| DO-15 | 200 x 85 x 25 | 1,000 | 459 x 214 x 256 | 40,000 | 20.7 |
| DO-201AD | 200 x 85 x 40 | 500 | 459 x 214 x 256 | 12,500 | 16 |
| DO-201AE | 200 x 85 x 40 | 500 | 495 x 214 x 256 | 12,500 | 16 |
| DO-34 | 240 x 100 x 90 | 2,000 | 406 x 335 x 257 | 120,000 | 14.5 |
| DO-35 | 240 x 100 x 90 | 2,000 | 406 x 335 x 257 | 120,000 | 17.1 |
| DO-41 | 198 x 84 x 20 | 1,000 | 459 x 214 x 256 | 50,000 | 19.3 |
| DO-41G | 240 x 100 x 90 | 1,000 | 406 x 335 x 257 | 60,000 | 18.5 |
| DIP | - | - | 459 x 214 x 256 | 12,000 | 6.5 |
| SDIP | - | - | 459 x 214 x 256 | 24,000 | 15.7 |
| R-1 | 198 x 84 x 20 | 1,000 | 459 x 214 x 256 | 50,000 | 12.7 |
| P-600 | 208 x 90 x 83 | 500 | 459 x 214 x 256 | 5,000 | 11.3 |
| ITO-220 | 540 x 145 x 85 | 2,000 | 555 x 306 x 200 | 8,000 | 20.5 |
| TO-220 | 540 x 145 x 85 | 2,000 | 555 x 306 x 200 | 8,000 | 22.9 |
| TO-251AB/DPAK | 540 x 145 x 85 | 8,400 | 555 x 306 x 200 | 33,600 | 22 |
| TO-3P/TO-247AD | - | - | 530 x 243 x 100 | 1,500 | 13.9 |
| TO-3PS/TO-247S | - | - | 511 x 243 x 107 | 1,500 | 12.2 |

| Package | Ammo | Component Space | Tape Space | Inner Box Size | Carton Size | Carton | Approx. Gross Weight |
|---------------------------|-------|-----------------|------------|----------------|-----------------|---------|----------------------|
| | (pcs) | (m/m) | (m/m) | (m/m) | (m/m) | (EA) | (Kg) |
| Ammunition Packing | | | | | | | |
| A-405 | 5,000 | 5 | 26 | 255 x 47 x 150 | 339 x 276 x 330 | 60,000 | 12.4 |
| A-405 | 5,000 | 5 | 52 | 255 x 75 x 150 | 339 x 276 x 330 | 40,000 | 16 |
| DO-15 | 3,000 | 5 | 52 | 255 x 75 x 150 | 339 x 276 x 330 | 24,000 | 13.3 |
| DO-201AD | 1,250 | 10 | 52 | 255 x 47 x 122 | 339 x 276 x 330 | 10,000 | 13.4 |
| DO-201AE | 1,250 | 10 | 52 | 255 x 47 x 122 | 339 x 276 x 330 | 10,000 | 13.4 |
| DO-34 | 5,000 | 5 | 26 | 248 x 80 x 48 | 406 x 335 x 257 | 150,000 | 14.5 |
| DO-34 | 5,000 | 5 | 52 | 248 x 80 x 75 | 406 x 335 x 257 | 100,000 | 12.7 |
| DO-35 | 5,000 | 5 | 26 | 248 x 80 x 48 | 406 x 335 x 257 | 150,000 | 16.7 |
| DO-35 | 5,000 | 5 | 52 | 248 x 80 x 75 | 406 x 335 x 257 | 100,000 | 15.2 |
| DO-41 | 5,000 | 5 | 52 | 255 x 75 x 150 | 339 x 276 x 330 | 40,000 | 13.5 |
| DO-41G | 2,500 | 5 | 26 | 248 x 80 x 48 | 406 x 335 x 257 | 75,000 | 17.1 |
| DO-41G | 2,500 | 5 | 52 | 248 x 80 x 75 | 406 x 335 x 257 | 50,000 | 15.6 |
| P-600 | 400 | 10 | 52 | 255 x 47 x 122 | 339 x 276 x 330 | 3,200 | 8.1 |
| R-1 | 3,000 | 5 | 26 | 255 x 47 x 73 | 310 x 268 x 170 | 36,000 | 6.3 |
| R-1 | 3,000 | 5 | 52 | 255 x 73 x 73 | 310 x 268 x 170 | 24,000 | 6.2 |
| R-1 | 5,000 | 5 | 52 | 255 x 73 x 122 | 339 x 276 x 274 | 40,000 | 10.1 |

5.HIGH RELIABILITY TEST SPEC (Zener & TVS)

Date : 2010.07.05 rev.01

| NO. | TEST ITEM | TEST CONDITION | REFERENCED DOCUMENT | LOT QUALITY LEVEL |
|-----|---|---|--|---|
| 1 | TEMPERATURE CYCLING (T.C.T) 溫度循環試驗 | Ta = -55+0°C / -10°C 10min(Min) Ta = +150+15°C / -0°C 10min(Min) FOR 20CYCLES | MIL-STD-750D METHOD-1051.5 Condition G | LTPD 10 S.S =22 ACCEPT FOR 0 FAILURE ONLY. |
| 2 | HIGH TEMPERATURE STORAGE LIFE (H.T.S.L) 高溫儲存壽命試驗 | Ta = Storage Temperature Range (device specified maximum temperature) | MIL-STD-750D METHOD-1032.2 | LTPD 10 S.S =22 ACCEPT FOR 0 FAILURE ONLY. |
| 3 | SOLDERABILITY TEST 錫錫性試驗 | Temperature of Solder TEMPERATURE OF SOLDER POT = 245 +/- 5°C TIME FOR DIPPING IN SOLDER = 5 +/- 0.5 SEC DIPPING DEPTH = 0.05inch max from the body FOR ONE CYCLE | MIL-STD-750D METHOD-2026.10 | LTPD 7 S.S =32 ACCEPT FOR 0 FAILURE ONLY. |
| 4 | HIGH TEMPERATURE REVERSE BIAS (H.T.R.B) 高溫逆向偏壓 | Tj ≤ Tj max VR = 0.8VR (CUSTOMER SPEC.) DC supply | MIL-STD-750D METHOD-1038.3 | LTPD 10 S.S =22 ACCEPT FOR 0 FAILURE ONLY. |
| 6 | THERMAL SHOCK (T.S.T) 冷熱衝擊試驗 | HOT TANK Ta = 100 + 10 / - 2°C t = 5min COLD TANK Ta = 0 + 2 / - 10°C t = 5min 15 CYCLES TIME BETWEEN TRANSFERRING DO NOT EXCEED 10 SEC | MIL-STD-750D METHOD 1056.7 | LTPD 10 S.S =22 ACCEPT FOR 0 FAILURE ONLY. |
| 7 | PRESSURE COOKER (P.C.T) 壓力鍋試驗 | Ta = 121°C P = 29.7psia / 205kPa or 2.088kg/cm ² Relative Humidity = 100% | JEDEC JESD22-A102-C | LTPD 10 S.S =22 ACCEPT FOR 0 FAILURE ONLY. |
| 8 | HUMIDITY 恆溫濕試驗 | Ta = 85 +/- 2°C RH = 85 +/- 5% | EIAJ ED-4701 METHOD 103 | LTPD 10 S.S =22 ACCEPT FOR 0 FAILURE ONLY. |
| 9 | SOLDER RESISTANCE 錫錫耐熱性試驗 | TEMPERATURE OF SOLDER POT = 260 +/- 5°C TIME FOR DIPPING IN SOLDER = 10 + 2 / - 0 SEC DIPPING DEPTH = 1.57 +/- 0.79mm FROM THE BODY FOR ONE CYCLE | MIL-STD-750D METHOD 2031.2 | LTPD 10 S.S =22 ACCEPT FOR 0 FAILURE ONLY. |