



5KP SERIES

GLASS PASSIVATED JUNCTION TRANSIENT VOLTAGE SUPPRESSOR PEAK PULSE POWER 5000 Watt

STAND-OFF VOLTAGE

5 to 220 Volt

P-600

Unit : inch(mm)

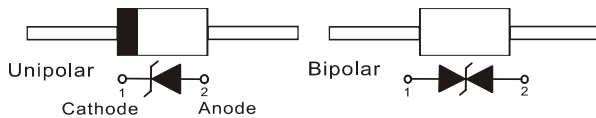
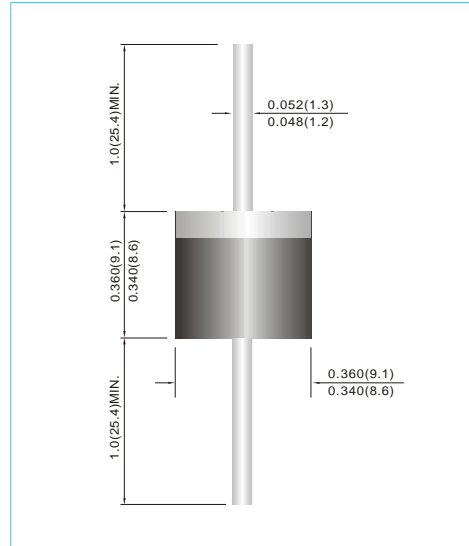
Recongized File # E210467

FEATURES

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- 5000W Peak Pulse Power capability at on tp=10/1000µs waveform
- Excellent clamping capability
- Low zener impedance
- Repetition rate(Duty Cycle):.05%
- Fast response time: typically less than 1 ps from 0 volts to BV min
- ESD IEC-61000-4-2 Air ± 30kV, Contact ± 30kV
- Lead free in compliance with EU RoHS 2011/65/EU directive

MECHANICAL DATA

- Case: JEDEC P-600 molded plastic
- Terminals: Axial leads, solderable per MIL-STD-750, Method 2026
- Polarity: Color band denotes cathode end
- Weight: 0.072 ounce, 2.04 gram



DEVICES FOR BIPOLAR APPLICATIONS

For Bidirectional use C or CA Suffix for types 5KP5.0 thru types 5KP220
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 $T_A=25^\circ\text{C}$, $t_p=1\text{ms}$ (Notes 1) | P_{PP} | 5000 | Watts |
| Typical Thermal Resistance Junction to Air Lead Lengths 0.375", (9.5mm) (Notes 2) | $R_{\theta JA}$ | 10 | $^\circ\text{C} / \text{W}$ |
| Peak Pulse Current on $t_p=10/1000\mu\text{s}$ waveform (Notes 1) | I_{PPM} | see Table | Amps |
| Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed on Rated Load (Notes 3) | I_{FSM} | 400 | Amps |
| ESD IEC-61000-4-2 (Air) ESD IEC-61000-4-2 (Contact) | V_{ESD} | ± 30 ± 30 | kV |
| 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 $0.79\text{in}^2(20\text{mm}^2)$.
- 3.8.3ms single half sine-wave, duty cycle= 4 pulses per minutes maximum.
- 4.A transient suppressor is 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.



5KP SERIES

| Part Number | | Reverse Stand-off Voltage | Breakdown Voltage | | Test Current | Reverse Leakage | | Max. Clamp Voltage 10/1000µs | Peak Pulse Current 10/1000µs | Marking Code | |
|------------------------------------|----------|---------------------------|----------------------------------|-------|--------------|-----------------------------------|-------|---------------------------------|---------------------------------|--------------|----------|
| | | | V _{BR} @ I _T | | | I _R @ V _{RWM} | | | | | |
| | | | Min. | Max. | | UNI | BI | | | | |
| UNI | BI | V | V | V | mA | µA | µA | V | A | UNI | BI |
| 5000W Transient Voltage Suppressor | | | | | | | | | | | |
| 5KP5.0 | 5KP5.0C | 5 | 6.4 | 7.55 | 50 | 5000 | 10000 | 9.6 | 520 | 5KP5.0 | 5KP5.0C |
| 5KP5.0A | 5KP5.0CA | 5 | 6.4 | 7.25 | 50 | 5000 | 10000 | 9.2 | 543 | 5KP5.0A | 5KP5.0CA |
| 5KP6.0 | 5KP6.0C | 6 | 6.67 | 8.45 | 50 | 5000 | 10000 | 11.4 | 439 | 5KP6.0 | 5KP6.0C |
| 5KP6.0A | 5KP6.0CA | 6 | 6.67 | 7.67 | 50 | 5000 | 10000 | 10.3 | 485 | 5KP6.0A | 5KP6.0CA |
| 5KP6.5 | 5KP6.5C | 6.5 | 7.22 | 9.14 | 50 | 2000 | 4000 | 12.3 | 407 | 5KP6.5 | 5KP6.5C |
| 5KP6.5A | 5KP6.5CA | 6.5 | 7.22 | 8.3 | 50 | 2000 | 4000 | 11.2 | 447 | 5KP6.5A | 5KP6.5CA |
| 5KP7.0 | 5KP7.0C | 7 | 7.78 | 9.86 | 50 | 1000 | 2000 | 13.3 | 378 | 5KP7.0 | 5KP7.0C |
| 5KP7.0A | 5KP7.0CA | 7 | 7.78 | 8.95 | 50 | 1000 | 2000 | 12 | 417 | 5KP7.0A | 5KP7.0CA |
| 5KP7.5 | 5KP7.5C | 7.5 | 8.33 | 10.67 | 5 | 250 | 500 | 14.3 | 350 | 5KP7.5 | 5KP7.5C |
| 5KP7.5A | 5KP7.5CA | 7.5 | 8.33 | 9.58 | 5 | 250 | 500 | 12.9 | 388 | 5KP7.5A | 5KP7.5CA |
| 5KP8.0 | 5KP8.0C | 8 | 8.89 | 11.3 | 5 | 150 | 300 | 15 | 333 | 5KP8.0 | 5KP8.0C |
| 5KP8.0A | 5KP8.0CA | 8 | 8.89 | 10.23 | 5 | 150 | 300 | 13.6 | 367 | 5KP8.0A | 5KP8.0CA |
| 5KP8.5 | 5KP8.5C | 8.5 | 9.44 | 11.92 | 5 | 50 | 100 | 15.9 | 314 | 5KP8.5 | 5KP8.5C |
| 5KP8.5A | 5KP8.5CA | 8.5 | 9.44 | 10.82 | 5 | 50 | 100 | 14.4 | 347 | 5KP8.5A | 5KP8.5CA |
| 5KP9.0 | 5KP9.0C | 9 | 10 | 12.6 | 5 | 20 | 40 | 16.9 | 295 | 5KP9.0 | 5KP9.0C |
| 5KP9.0A | 5KP9.0CA | 9 | 10 | 11.5 | 5 | 20 | 40 | 15.4 | 325 | 5KP9.0A | 5KP9.0CA |
| 5KP10 | 5KP10C | 10 | 11.1 | 14.1 | 5 | 6 | 6 | 18.8 | 266 | 5KP10 | 5KP10C |
| 5KP10A | 5KP10CA | 10 | 11.1 | 12.8 | 5 | 6 | 6 | 17 | 294 | 5KP10A | 5KP10CA |
| 5KP11 | 5KP11C | 11 | 12.2 | 15.4 | 5 | 6 | 6 | 20.1 | 249 | 5KP11 | 5KP11C |
| 5KP11A | 5KP11CA | 11 | 12.2 | 14 | 5 | 6 | 6 | 18.2 | 274 | 5KP11A | 5KP11CA |
| 5KP12 | 5KP12C | 12 | 13.3 | 16.9 | 5 | 6 | 6 | 22 | 227 | 5KP12 | 5KP12C |
| 5KP12A | 5KP12CA | 12 | 13.3 | 15.3 | 5 | 6 | 6 | 19.9 | 251 | 5KP12A | 5KP12CA |
| 5KP13 | 5KP13C | 13 | 14.4 | 18.2 | 5 | 6 | 6 | 23.8 | 210 | 5KP13 | 5KP13C |
| 5KP13A | 5KP13CA | 13 | 14.4 | 16.5 | 5 | 6 | 6 | 21.5 | 232 | 5KP13A | 5KP13CA |
| 5KP14 | 5KP14C | 14 | 15.6 | 19.8 | 5 | 6 | 6 | 25.8 | 194 | 5KP14 | 5KP14C |
| 5KP14A | 5KP14CA | 14 | 15.6 | 17.9 | 5 | 6 | 6 | 23.2 | 215 | 5KP14A | 5KP14CA |
| 5KP15 | 5KP15C | 15 | 16.7 | 21.1 | 5 | 6 | 6 | 26.9 | 188 | 5KP15 | 5KP15C |
| 5KP15A | 5KP15CA | 15 | 16.7 | 19.2 | 5 | 6 | 6 | 24.4 | 206 | 5KP15A | 5KP15CA |
| 5KP16 | 5KP16C | 16 | 17.8 | 22.6 | 5 | 6 | 6 | 28.8 | 176 | 5KP16 | 5KP16C |
| 5KP16A | 5KP16CA | 16 | 17.8 | 20.5 | 5 | 6 | 6 | 26 | 192 | 5KP16A | 5KP16CA |
| 5KPJ17 | 5KPJ17C | 17 | 18.9 | 23.9 | 5 | 6 | 6 | 30.5 | 164 | 5KPJ17 | 5KPJ17C |
| 5KP17A | 5KP17CA | 17 | 18.9 | 21.7 | 5 | 6 | 6 | 27.6 | 181 | 5KP17A | 5KP17CA |
| 5KP18 | 5KP18C | 18 | 20 | 25.3 | 5 | 6 | 6 | 32.2 | 155 | 5KP18 | 5KP18C |
| 5KP18A | 5KP18CA | 18 | 20 | 23.3 | 5 | 6 | 6 | 29.2 | 172 | 5KP18A | 5KP18CA |
| 5KP20 | 5KP20C | 20 | 22.2 | 28.1 | 5 | 6 | 6 | 35.8 | 139 | 5KP20 | 5KP20C |
| 5KP20A | 5KP20CA | 20 | 22.2 | 25.5 | 5 | 6 | 6 | 32.4 | 154 | 5KP20A | 5KP20CA |
| 5KP22 | 5KP22C | 22 | 24.4 | 30.9 | 5 | 6 | 6 | 39.4 | 127 | 5KP22 | 5KP22C |
| 5KP22A | 5KP22CA | 22 | 24.4 | 28 | 5 | 6 | 6 | 35.5 | 141 | 5KP22A | 5KP22CA |
| 5KP24 | 5KP24C | 24 | 26.7 | 33.8 | 5 | 6 | 6 | 43 | 116 | 5KP24 | 5KP24C |
| 5KP24A | 5KP24CA | 24 | 26.7 | 30.7 | 5 | 6 | 6 | 38.9 | 128 | 5KP24A | 5KP24CA |
| 5KP26 | 5KP26C | 26 | 28.9 | 36.6 | 5 | 6 | 6 | 46.6 | 107 | 5KP26 | 5KP26C |
| 5KP26A | 5KP26CA | 26 | 28.9 | 33.2 | 5 | 6 | 6 | 42.1 | 119 | 5KP26A | 5KP26CA |
| 5KP28 | 5KP28C | 28 | 31.1 | 39.4 | 5 | 6 | 6 | 50 | 99 | 5KP28 | 5KP28C |
| 5KP28A | 5KP28CA | 28 | 31.1 | 35.8 | 5 | 6 | 6 | 45.4 | 110 | 5KP28A | 5KP28CA |
| 5KP30 | 5KP30C | 30 | 33.3 | 42.2 | 5 | 6 | 6 | 53.5 | 93 | 5KP30 | 5KP30C |
| 5KP30A | 5KP30CA | 30 | 33.3 | 38.3 | 5 | 6 | 6 | 48.4 | 103 | 5KP30A | 5KP30CA |
| 5KP33 | 5KP33C | 33 | 36.7 | 46.5 | 5 | 6 | 6 | 59 | 85 | 5KP33 | 5KP33C |
| 5KP33A | 5KP33CA | 33 | 36.7 | 42.2 | 5 | 6 | 6 | 53.3 | 94 | 5KP33A | 5KP33CA |
| 5KP36 | 5KP36C | 36 | 40 | 50.7 | 5 | 6 | 6 | 64.3 | 78 | 5KP36 | 5KP36C |
| 5KP36A | 5KP36CA | 36 | 40 | 46 | 5 | 6 | 6 | 58.1 | 85 | 5KP36A | 5KP36CA |
| 5KP40 | 5KP40C | 40 | 44.4 | 56.3 | 5 | 6 | 6 | 71.4 | 70 | 5KP40 | 5KP40C |



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| Part Number | | Reverse Stand-off Voltage | Breakdown Voltage | | Test Current | Reverse Leakage | | Max. Clamp Voltage 10/1000µs | Peak Pulse Current 10/1000µs | Marking Code | |
|------------------------------------|----------|----------------------------|----------------------------------|-------|----------------|-----------------------------------|----|----------------------------------|---------------------------------|--------------|----------|
| | | V _{RWM} (Notes 4) | V _{BR} @ I _T | | I _T | I _R @ V _{RWM} | | V _C @ I _{PP} | I _{PP} | | |
| | | | Min. | Max. | | UNI | BI | | | | |
| UNI | BI | V | V | V | mA | µA | µA | V | A | UNI | BI |
| 5000W Transient Voltage Suppressor | | | | | | | | | | | |
| 5KP40A | 5KP40CA | 40 | 44.4 | 51.1 | 5 | 6 | 6 | 64.5 | 78 | 5KP40A | 5KP40CA |
| 5KP43 | 5KP43C | 43 | 47.8 | 60.5 | 5 | 6 | 6 | 76.7 | 65 | 5KP43 | 5KP43C |
| 5KP43A | 5KP43CA | 43 | 47.8 | 54.9 | 5 | 6 | 6 | 69.4 | 72 | 5KP43A | 5KP43CA |
| 5KP45 | 5KP45C | 45 | 50 | 63.3 | 5 | 6 | 6 | 80.3 | 62 | 5KP45 | 5KP45C |
| 5KP45A | 5KP45CA | 45 | 50 | 57.5 | 5 | 6 | 6 | 72.7 | 69 | 5KP45A | 5KP45CA |
| 5KP48 | 5KP48C | 48 | 53.3 | 67.5 | 5 | 6 | 6 | 85.5 | 58 | 5KP48 | 5KP48C |
| 5KP48A | 5KP48CA | 48 | 53.3 | 61.3 | 5 | 6 | 6 | 77.4 | 65 | 5KP48A | 5KP48CA |
| 5KP51 | 5KP51C | 51 | 56.7 | 71.8 | 5 | 6 | 6 | 91.1 | 55 | 5KP51 | 5KP51C |
| 5KP51A | 5KP51CA | 51 | 56.7 | 65.2 | 5 | 6 | 6 | 82.4 | 61 | 5KP51A | 5KP51CA |
| 5KP54 | 5KP54C | 54 | 60 | 76 | 5 | 6 | 6 | 96.3 | 52 | 5KP54 | 5KP54C |
| 5KP54A | 5KP54CA | 54 | 60 | 69 | 5 | 6 | 6 | 87.1 | 57 | 5KP54A | 5KP54CA |
| 5KP58 | 5KP58C | 58 | 64.4 | 81.6 | 5 | 6 | 6 | 103 | 49 | 5KP58 | 5KP58C |
| 5KP58A | 5KP58CA | 58 | 64.4 | 74.1 | 5 | 6 | 6 | 93.6 | 53 | 5KP58A | 5KP58CA |
| 5KP60 | 5KP60C | 60 | 66.7 | 84.5 | 5 | 6 | 6 | 107 | 47 | 5KP60 | 5KP60C |
| 5KP60A | 5KP60CA | 60 | 66.7 | 76.7 | 5 | 6 | 6 | 96.8 | 52 | 5KP60A | 5KP60CA |
| 5KP64 | 5KP64C | 64 | 71.1 | 90.1 | 5 | 6 | 6 | 114 | 44 | 5KP64 | 5KP64C |
| 5KP64A | 5KP64CA | 64 | 71.1 | 81.8 | 5 | 6 | 6 | 103 | 49 | 5KP64A | 5KP64CA |
| 5KP70 | 5KP70C | 70 | 77.8 | 98.6 | 5 | 6 | 6 | 125 | 40 | 5KP70 | 5KP70C |
| 5KP70A | 5KP70CA | 70 | 77.8 | 89.5 | 5 | 6 | 6 | 113 | 44 | 5KP70A | 5KP70CA |
| 5KP75 | 5KP75C | 75 | 83.3 | 105.7 | 5 | 6 | 6 | 134 | 37 | 5KP75 | 5KP75C |
| 5KP75A | 5KP75CA | 75 | 83.3 | 95.8 | 5 | 6 | 6 | 121 | 41 | 5KP75A | 5KP75CA |
| 5KP78 | 5KP78C | 78 | 86.7 | 109.8 | 5 | 6 | 6 | 139 | 36 | 5KP78 | 5KP78C |
| 5KP78A | 5KP78CA | 78 | 86.7 | 99.7 | 5 | 6 | 6 | 126 | 40 | 5KP78A | 5KP78CA |
| 5KP85 | 5KP85C | 85 | 94.4 | 119.2 | 5 | 6 | 6 | 151 | 33 | 5KP85 | 5KP85C |
| 5KP85A | 5KP85CA | 85 | 94.4 | 108.2 | 5 | 6 | 6 | 137 | 36 | 5KP85A | 5KP85CA |
| 5KP90 | 5KP90C | 90 | 100 | 126.5 | 5 | 6 | 6 | 160 | 31 | 5KP90 | 5KP90C |
| 5KP90A | 5KP90CA | 90 | 100 | 115.5 | 5 | 6 | 6 | 146 | 34 | 5KP90A | 5KP90CA |
| 5KP100 | 5KP100C | 100 | 111 | 141 | 5 | 6 | 6 | 179 | 28 | 5KP100 | 5KP100C |
| 5KP100A | 5KP100CA | 100 | 111 | 128 | 5 | 6 | 6 | 162 | 31 | 5KP100A | 5KP100CA |
| 5KP110 | 5KP110C | 110 | 122 | 154.5 | 5 | 6 | 6 | 196 | 26 | 5KP110 | 5KP110C |
| 5KP110A | 5KP110CA | 110 | 122 | 140.5 | 5 | 6 | 6 | 177 | 28 | 5KP110A | 5KP110CA |
| 5KP120 | 5KP120C | 120 | 133 | 169 | 5 | 6 | 6 | 214 | 23 | 5KP120 | 5KP120C |
| 5KP120A | 5KP120CA | 120 | 133 | 153 | 5 | 6 | 6 | 193 | 20 | 5KP120A | 5KP120CA |
| 5KP130 | 5KP130C | 130 | 144 | 182.5 | 5 | 6 | 6 | 231 | 22 | 5KP130 | 5KP130C |
| 5KP130A | 5KP130CA | 130 | 144 | 165.5 | 5 | 6 | 6 | 209 | 24 | 5KP130A | 5KP130CA |
| 5KP150 | 5KP150C | 150 | 167 | 211.5 | 5 | 6 | 6 | 268 | 19 | 5KP150 | 5KP150C |
| 5KP150A | 5KP150CA | 150 | 167 | 192.5 | 5 | 6 | 6 | 243 | 21 | 5KP150A | 5KP150CA |
| 5KP160 | 5KP160C | 160 | 178 | 226 | 5 | 6 | 6 | 287 | 17 | 5KP160 | 5KP160C |
| 5KP160A | 5KP160CA | 160 | 178 | 205 | 5 | 6 | 6 | 259 | 19 | 5KP160A | 5KP160CA |
| 5KP170 | 5KP170C | 170 | 189 | 239.5 | 5 | 6 | 6 | 304 | 16 | 5KP170 | 5KP170C |
| 5KP170A | 5KP170CA | 170 | 189 | 217.5 | 5 | 6 | 6 | 275 | 18 | 5KP170A | 5KP170CA |
| 5KP180 | 5KP180C | 180 | 198 | 253.8 | 1 | 3 | 3 | 322 | 16 | 5KP180 | 5KP180C |
| 5KP180A | 5KP180CA | 180 | 198 | 230.4 | 1 | 3 | 3 | 292 | 17 | 5KP180A | 5KP180CA |
| 5KP190 | 5KP190C | 190 | 209 | 267.9 | 1 | 3 | 3 | 340 | 15 | 5KP190 | 5KP190C |
| 5KP190A | 5KP190CA | 190 | 209 | 243.2 | 1 | 3 | 3 | 308 | 16 | 5KP190A | 5KP190CA |
| 5KP200 | 5KP200C | 200 | 220 | 282 | 1 | 3 | 3 | 358 | 14 | 5KP200 | 5KP200C |
| 5KP200A | 5KP200CA | 200 | 220 | 256 | 1 | 3 | 3 | 324 | 15 | 5KP200A | 5KP200CA |
| 5KP210 | 5KP210C | 210 | 231 | 296.1 | 1 | 3 | 3 | 376 | 13 | 5KP210 | 5KP210C |
| 5KP210A | 5KP210CA | 210 | 231 | 268.8 | 1 | 3 | 3 | 340 | 15 | 5KP210A | 5KP210CA |
| 5KP220 | 5KP220C | 220 | 242 | 310.2 | 1 | 3 | 3 | 394 | 13 | 5KP220 | 5KP220C |
| 5KP220A | 5KP220CA | 220 | 242 | 282 | 1 | 3 | 3 | 356 | 14 | 5KP220A | 5KP220CA |



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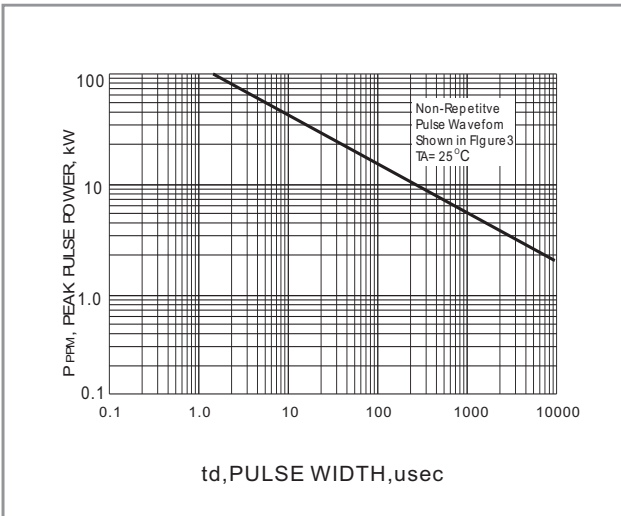


Fig.1 PEAK PULSE POWER RATING VERSUS PULSE TIME CURVE

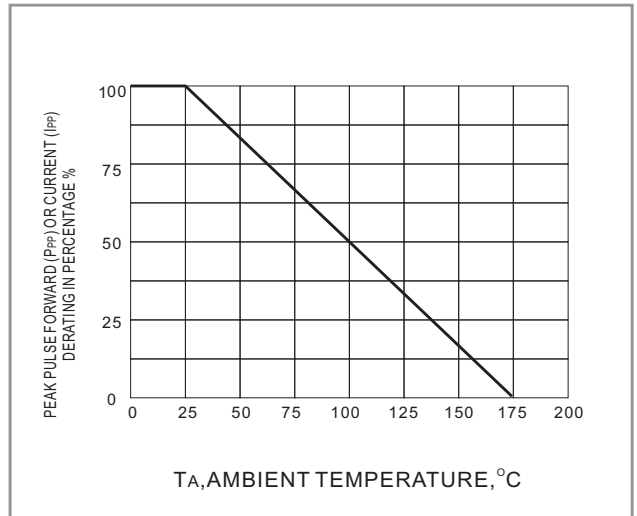


Fig.2 PULSE DERATING CURVE

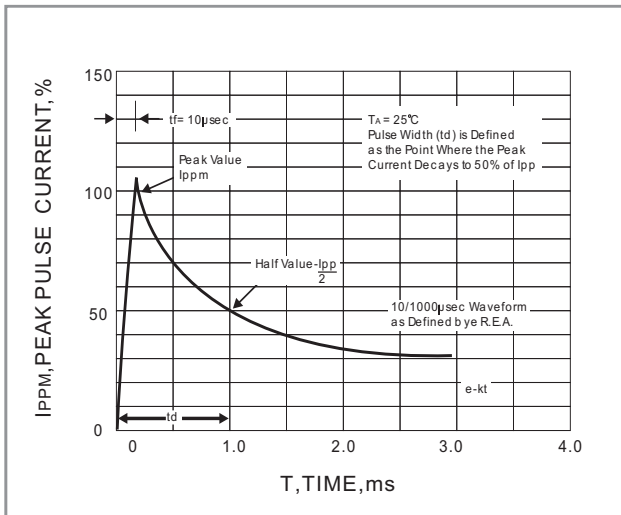


Fig.3 PULSE WAVEFORM

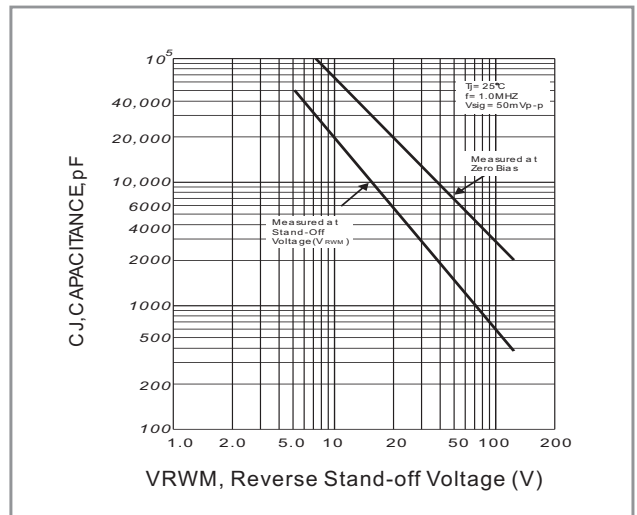


Fig.4 TYPICAL JUNCTION CAPACITANCE

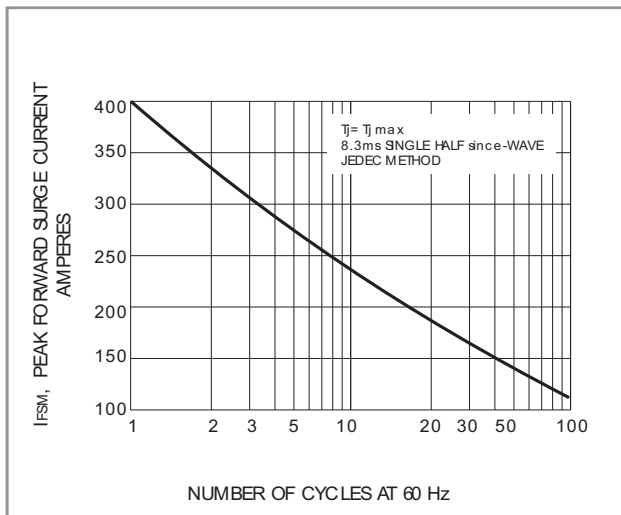


Fig.5 MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT UNIDIRECTIONAL



5KP SERIES

Part No_packing code_Version

5KP5.0_AY_00001
5KP5.0_AY_10001
5KP5.0_B0_00001
5KP5.0_B0_10001
5KP5.0_R2_00001
5KP5.0_R2_10001

For example :

RB500V-40 **R2** **00001**



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



5KP SERIES

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