



P6KE SERIES

GLASS PASSIVATED JUNCTION TRANSIENT VOLTAGE SUPPRESSOR POWER 600 Watt

BREAK DOWN VOLTAGE

6.8 to 550 Volt

DO-15

Unit : inch(mm)

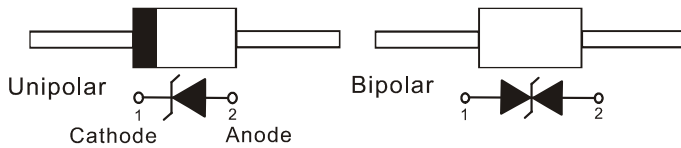
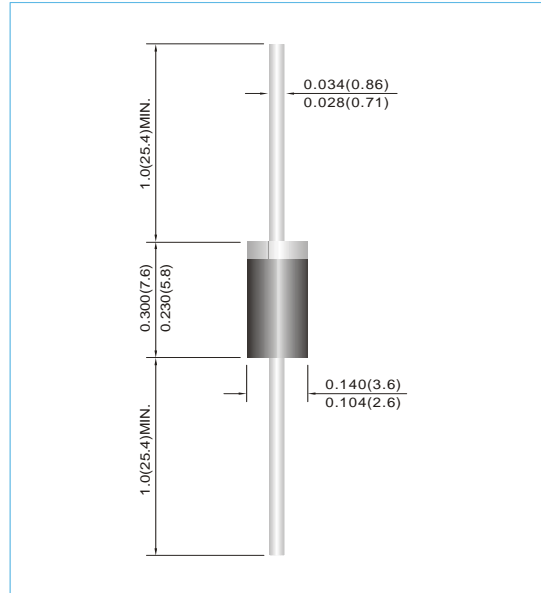
Recongized File # E210467

FEATURES

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- 600W surge capability at 1ms
- Excellent clamping capability
- Low zener impedance
- Fast response time: typically less than 1 ps from 0 volts to BV min
- ESD IEC-61000-4-2 Air \pm 30kV, Contact \pm 30kV
- Lead free in compliance with EU RoHS 2011/65/EU directive

MECHANICAL DATA

- Case: JEDEC DO-15 Molded plastic
- Terminals: Axial leads, solderable per MIL-STD-750, Method 2026
- Polarity: Color band denotes cathode end
- Weight: 0.014 ounce, 0.4 gram



DEVICES FOR BIPOLAR APPLICATIONS

For Bidirectional use C or CA Suffix for types
Electrical characteristics apply in both directions.

MAXIMUM RATINGS AND CHARACTERISTICS

Rating at 25°C ambient temperature unless otherwise specified. Resistive or inductive load, 60Hz.
For Capacitive load derate current by 20%.

| Rating | Symbol | Value | Units |
|--|-----------------|----------------------|-----------------------------|
| Power Dissipation on $T_A=25^\circ\text{C}$, $t_p=1\text{ms}$ (Notes 1) | P_{PP} | 600 | Watts |
| Typical Thermal Resistance (Notes 2) | $R_{\theta JA}$ | 70 | $^\circ\text{C} / \text{W}$ |
| | $R_{\theta JC}$ | 30 | |
| 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} | 100 | 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} | -65 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 48cm² FR-4 PCB.
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.



P6KE SERIES

| Part Number | | Reverse Stand-off Voltage | Breakdown Voltage | | Test Current | Reverse Leakage | | Max. Clamp Voltage 10/1000 μ s | Peak Pulse Current 10/1000 μ s | Marking Code | |
|--|-----------|---------------------------|-------------------|-------|--------------|-----------------|---------|---------------------------------------|---------------------------------------|--------------|-----------|
| | | | $V_{BR} @ I_T$ | | | $I_R @ V_{RWM}$ | | | | | |
| | | | Min. | Max. | | UNI | BI | | | | |
| UNI | BI | V | V | V | mA | μ A | μ A | V | A | UNI | BI |
| 600W Transient Voltage Suppressor | | | | | | | | | | | |
| P6KE6.8 | P6KE6.8C | 5.5 | 6.12 | 7.48 | 10 | 1000 | 2000 | 10.8 | 56 | P6KE6.8 | P6KE6.8C |
| P6KE6.8A | P6KE6.8CA | 5.8 | 6.45 | 7.14 | 10 | 1000 | 2000 | 10.5 | 57 | P6KE6.8A | P6KE6.8CA |
| P6KE7.5 | P6KE7.5C | 6.05 | 6.75 | 8.25 | 10 | 500 | 1000 | 11.7 | 51 | P6KE7.5 | P6KE7.5C |
| P6KE7.5A | P6KE7.5CA | 6.4 | 7.13 | 7.88 | 10 | 500 | 1000 | 11.3 | 53 | P6KE7.5A | P6KE7.5CA |
| P6KE8.2 | P6KE8.2C | 6.63 | 7.38 | 9.02 | 10 | 200 | 400 | 12.5 | 48 | P6KE8.2 | P6KE8.2C |
| P6KE8.2A | P6KE8.2CA | 7.02 | 7.79 | 8.61 | 10 | 200 | 400 | 12.1 | 50 | P6KE8.2A | P6KE8.2CA |
| P6KE9.1 | P6KE9.1C | 7.37 | 8.19 | 10 | 1 | 50 | 100 | 13.8 | 44 | P6KE9.1 | P6KE9.1C |
| P6KE9.1A | P6KE9.1CA | 7.78 | 8.65 | 9.50 | 1 | 50 | 100 | 13.4 | 45 | P6KE9.1A | P6KE9.1CA |
| P6KE10 | P6KE10C | 8.1 | 9 | 11 | 1 | 10 | 20 | 15 | 40 | P6KE10 | P6KE10C |
| P6KE10A | P6KE10CA | 8.55 | 9.5 | 10.50 | 1 | 10 | 20 | 14.5 | 41 | P6KE10A | P6KE10CA |
| P6KE11 | P6KE11C | 8.92 | 9.9 | 12 | 1 | 5 | 10 | 16.2 | 37 | P6KE11 | P6KE11C |
| P6KE11A | P6KE11CA | 9.4 | 10.5 | 12 | 1 | 5 | 10 | 15.6 | 38 | P6KE11A | P6KE11CA |
| P6KE12 | P6KE12C | 9.72 | 10.8 | 13 | 1 | 5 | 5 | 17.3 | 35 | P6KE12 | P6KE12C |
| P6KE12A | P6KE12CA | 10.2 | 11.4 | 13 | 1 | 5 | 5 | 16.7 | 36 | P6KE12A | P6KE12CA |
| P6KE13 | P6KE13C | 10.5 | 11.7 | 14 | 1 | 1 | 1 | 19 | 32 | P6KE13 | P6KE13C |
| P6KE13A | P6KE13CA | 11.1 | 12.4 | 14 | 1 | 1 | 1 | 18.2 | 33 | P6KE13A | P6KE13CA |
| P6KE15 | P6KE15C | 12.1 | 13.5 | 16.5 | 1 | 1 | 1 | 22 | 27 | P6KE15 | P6KE15C |
| P6KE15A | P6KE15CA | 12.8 | 14.3 | 15.8 | 1 | 1 | 1 | 21.2 | 28 | P6KE15A | P6KE15CA |
| P6KE16 | P6KE16C | 12.9 | 14.4 | 17.6 | 1 | 1 | 1 | 23.5 | 26 | P6KE16 | P6KE16C |
| P6KE16A | P6KE16CA | 13.6 | 15.2 | 16.8 | 1 | 1 | 1 | 22.5 | 27 | P6KE16A | P6KE16CA |
| P6KE18 | P6KE18C | 14.5 | 16.2 | 19.8 | 1 | 1 | 1 | 26.5 | 23 | P6KE18 | P6KE18C |
| P6KE18A | P6KE18CA | 15.3 | 17.1 | 18.9 | 1 | 1 | 1 | 25.2 | 24 | P6KE18A | P6KE18CA |
| P6KE20 | P6KE20C | 16.2 | 18 | 22 | 1 | 1 | 1 | 29.1 | 21 | P6KE20 | P6KE20C |
| P6KE20A | P6KE20CA | 17.1 | 19 | 21 | 1 | 1 | 1 | 27.7 | 22 | P6KE20A | P6KE20CA |
| P6KE22 | P6KE22C | 17.8 | 19.8 | 24.2 | 1 | 1 | 1 | 31.9 | 19 | P6KE22 | P6KE22C |
| P6KE22A | P6KE22CA | 18.8 | 20.9 | 23.1 | 1 | 1 | 1 | 30.6 | 20 | P6KE22A | P6KE22CA |
| P6KE24 | P6KE24C | 19.4 | 21.6 | 26.4 | 1 | 1 | 1 | 34.7 | 17 | P6KE24 | P6KE24C |
| P6KE24A | P6KE24CA | 20.5 | 22.8 | 25.2 | 1 | 1 | 1 | 33.2 | 18 | P6KE24A | P6KE24CA |
| P6KE27 | P6KE27C | 21.8 | 24.3 | 29.7 | 1 | 1 | 1 | 39.1 | 15 | P6KE27 | P6KE27C |
| P6KE27A | P6KE27CA | 23.1 | 25.7 | 28.4 | 1 | 1 | 1 | 37.5 | 16 | P6KE27A | P6KE27CA |
| P6KE30 | P6KE30C | 24.3 | 27 | 33 | 1 | 1 | 1 | 43.5 | 14 | P6KE30 | P6KE30C |
| P6KE30A | P6KE30CA | 25.6 | 28.5 | 31.5 | 1 | 1 | 1 | 41.4 | 14.4 | P6KE30A | P6KE30CA |
| P6KE33 | P6KE33C | 26.8 | 29.7 | 36.3 | 1 | 1 | 1 | 47.7 | 12.6 | P6KE33 | P6KE33C |
| P6KE33A | P6KE33CA | 28.2 | 31.4 | 34.7 | 1 | 1 | 1 | 45.7 | 13.2 | P6KE33A | P6KE33CA |
| P6KE36 | P6KE36C | 29.1 | 32.4 | 39.6 | 1 | 1 | 1 | 52 | 11.6 | P6KE36 | P6KE36C |
| P6KE36A | P6KE36CA | 30.8 | 34.2 | 37.8 | 1 | 1 | 1 | 49.9 | 12 | P6KE36A | P6KE36CA |
| P6KE39 | P6KE39C | 31.6 | 35.1 | 42.9 | 1 | 1 | 1 | 56.4 | 10.6 | P6KE39 | P6KE39C |
| P6KE39A | P6KE39CA | 33.3 | 37.1 | 41 | 1 | 1 | 1 | 53.9 | 11.2 | P6KE39A | P6KE39CA |
| P6KE43 | P6KE43C | 34.8 | 38.7 | 47.3 | 1 | 1 | 1 | 61.9 | 9.6 | P6KE43 | P6KE43C |
| P6KE43A | P6KE43CA | 36.8 | 40.9 | 45.2 | 1 | 1 | 1 | 59.3 | 10.1 | P6KE43A | P6KE43CA |
| P6KE47 | P6KE47C | 38.1 | 42.3 | 51.7 | 1 | 1 | 1 | 67.8 | 8.9 | P6KE47 | P6KE47C |
| P6KE47A | P6KE47CA | 40.2 | 44.7 | 49.4 | 1 | 1 | 1 | 64.8 | 9.3 | P6KE47A | P6KE47CA |



P6KE SERIES

| Part Number | | Reverse Stand-off Voltage | Breakdown Voltage | | Test Current | Reverse Leakage | | Max. Clamp Voltage 10/1000 μ s | Peak Pulse Current 10/1000 μ s | Marking Code | |
|-----------------------------------|-----------|---------------------------|-------------------|------|--------------|-----------------|---------|---------------------------------------|---------------------------------------|--------------|-----------|
| | | | $V_{BR} @ I_T$ | | | $I_R @ V_{RWM}$ | | | | | |
| UNI | BI | V | Min. | Max. | I_T | UNI | BI | $V_C @ I_{PP}$ | A | UNI | BI |
| | | | V | V | | μ A | μ A | | | | |
| 600W Transient Voltage Suppressor | | | | | | | | | | | |
| P6KE51 | P6KE51C | 41.3 | 45.9 | 56.1 | 1 | 1 | 1 | 73.5 | 8.2 | P6KE51 | P6KE51C |
| P6KE51A | P6KE51CA | 43.6 | 48.5 | 53.6 | 1 | 1 | 1 | 70.1 | 8.6 | P6KE51A | P6KE51CA |
| P6KE56 | P6KE56C | 45.6 | 50.4 | 61.6 | 1 | 1 | 1 | 80.5 | 7.4 | P6KE56 | P6KE56C |
| P6KE56A | P6KE56CA | 47.8 | 53.2 | 58.8 | 1 | 1 | 1 | 77 | 7.8 | P6KE56A | P6KE56CA |
| P6KE62 | P6KE62C | 50.2 | 55.8 | 68.2 | 1 | 1 | 1 | 89 | 6.8 | P6KE62 | P6KE62C |
| P6KE62A | P6KE62CA | 53 | 58.9 | 65.1 | 1 | 1 | 1 | 85 | 7.1 | P6KE62A | P6KE62CA |
| P6KE68 | P6KE68C | 55.1 | 61.2 | 74.8 | 1 | 1 | 1 | 98 | 6.1 | P6KE68 | P6KE68C |
| P6KE68A | P6KE68CA | 58.1 | 64.6 | 71.4 | 1 | 1 | 1 | 92 | 6.5 | P6KE68A | P6KE68CA |
| P6KE75 | P6KE75C | 60.7 | 67.5 | 82.5 | 1 | 1 | 1 | 108 | 5.5 | P6KE75 | P6KE75C |
| P6KE75A | P6KE75CA | 64.1 | 71.3 | 78.8 | 1 | 1 | 1 | 103 | 5.8 | P6KE75A | P6KE75CA |
| P6KE82 | P6KE82C | 66.4 | 73.8 | 90.2 | 1 | 1 | 1 | 118 | 5.1 | P6KE82 | P6KE82C |
| P6KE82A | P6KE82CA | 70.1 | 77.9 | 86.1 | 1 | 1 | 1 | 113 | 5.3 | P6KE82A | P6KE82CA |
| P6KE91 | P6KE91C | 73.7 | 81.9 | 100 | 1 | 1 | 1 | 131 | 4.5 | P6KE91 | P6KE91C |
| P6KE91A | P6KE91CA | 77.8 | 86.5 | 95.5 | 1 | 1 | 1 | 125 | 4.8 | P6KE91A | P6KE91CA |
| P6KE100 | P6KE100C | 81 | 90 | 110 | 1 | 1 | 1 | 144 | 4.2 | P6KE100 | P6KE100C |
| P6KE100A | P6KE100CA | 85.5 | 95 | 105 | 1 | 1 | 1 | 137 | 4.4 | P6KE100A | P6KE100CA |
| P6KE110 | P6KE110C | 89.2 | 99 | 121 | 1 | 1 | 1 | 158 | 3.8 | P6KE110 | P6KE110C |
| P6KE110A | P6KE110CA | 94 | 105 | 116 | 1 | 1 | 1 | 152 | 4 | P6KE110A | P6KE110CA |
| P6KE120 | P6KE120C | 97.2 | 108 | 132 | 1 | 1 | 1 | 173 | 3.5 | P6KE120 | P6KE120C |
| P6KE120A | P6KE120CA | 102 | 114 | 126 | 1 | 1 | 1 | 165 | 3.6 | P6KE120A | P6KE120CA |
| P6KE130 | P6KE130C | 105 | 117 | 143 | 1 | 1 | 1 | 187 | 3.2 | P6KE130 | P6KE130C |
| P6KE130A | P6KE130CA | 111 | 124 | 137 | 1 | 1 | 1 | 179 | 3.3 | P6KE130A | P6KE130CA |
| P6KE150 | P6KE150C | 121 | 135 | 165 | 1 | 1 | 1 | 215 | 2.8 | P6KE150 | P6KE150C |
| P6KE150A | P6KE150CA | 128 | 143 | 158 | 1 | 1 | 1 | 207 | 2.9 | P6KE150A | P6KE150CA |
| P6KE160 | P6KE160C | 130 | 144 | 176 | 1 | 1 | 1 | 230 | 2.6 | P6KE160 | P6KE160C |
| P6KE160A | P6KE160CA | 136 | 152 | 168 | 1 | 1 | 1 | 219 | 2.7 | P6KE160A | P6KE160CA |
| P6KE170 | P6KE170C | 138 | 153 | 187 | 1 | 1 | 1 | 244 | 2.5 | P6KE170 | P6KE170C |
| P6KE170A | P6KE170CA | 145 | 162 | 179 | 1 | 1 | 1 | 234 | 2.6 | P6KE170A | P6KE170CA |
| P6KE180 | P6KE180C | 146 | 162 | 198 | 1 | 1 | 1 | 258 | 2.3 | P6KE180 | P6KE180C |
| P6KE180A | P6KE180CA | 154 | 171 | 189 | 1 | 1 | 1 | 246 | 2.4 | P6KE180A | P6KE180CA |
| P6KE200 | P6KE200C | 162 | 180 | 220 | 1 | 1 | 1 | 287 | 2.1 | P6KE200 | P6KE200C |
| P6KE200A | P6KE200CA | 171 | 190 | 210 | 1 | 1 | 1 | 274 | 2.2 | P6KE200A | P6KE200CA |
| P6KE220 | P6KE220C | 175 | 198 | 242 | 1 | 1 | 1 | 344 | 1.8 | P6KE220 | P6KE220C |
| P6KE220A | P6KE220CA | 185 | 209 | 231 | 1 | 1 | 1 | 328 | 1.9 | P6KE220A | P6KE220CA |
| P6KE250 | P6KE250C | 202 | 225 | 275 | 1 | 1 | 1 | 360 | 1.7 | P6KE250 | P6KE250C |
| P6KE250A | P6KE250CA | 214 | 237 | 263 | 1 | 1 | 1 | 344 | 1.8 | P6KE250A | P6KE250CA |
| P6KE300 | P6KE300C | 243 | 270 | 330 | 1 | 1 | 1 | 430 | 1.4 | P6KE300 | P6KE300C |
| P6KE300A | P6KE300CA | 256 | 285 | 315 | 1 | 1 | 1 | 414 | 1.5 | P6KE300A | P6KE300CA |
| P6KE350 | P6KE350C | 284 | 315 | 385 | 1 | 1 | 1 | 504 | 1.2 | P6KE350 | P6KE350C |
| P6KE350A | P6KE350CA | 300 | 332 | 368 | 1 | 1 | 1 | 482 | 1.3 | P6KE350A | P6KE350CA |
| P6KE400 | P6KE400C | 324 | 360 | 440 | 1 | 1 | 1 | 574 | 1.05 | P6KE400 | P6KE400C |
| P6KE400A | P6KE400CA | 342 | 380 | 420 | 1 | 1 | 1 | 548 | 1.1 | P6KE400A | P6KE400CA |
| P6KE440 | P6KE440C | 356 | 396 | 484 | 1 | 1 | 1 | 631 | 0.99 | P6KE440 | P6KE440C |
| P6KE440A | P6KE440CA | 376 | 418 | 462 | 1 | 1 | 1 | 600 | 1.04 | P6KE440A | P6KE440CA |



P6KE SERIES

| Part Number | | Reverse Stand-off Voltage | Breakdown Voltage | | Test Current | Reverse Leakage | | Max. Clamp Voltage 10/1000 μ s | Peak Pulse Current 10/1000 μ s | Marking Code | |
|--|-----------|---------------------------|-------------------|-------|--------------|-----------------|---------|---------------------------------------|---------------------------------------|--------------|-----------|
| | | | $V_{BR} @ I_T$ | | | $I_R @ V_{RWM}$ | | | | | |
| UNI | BI | V | Min. | Max. | mA | μ A | μ A | V | A | UNI | BI |
| | | | V | V | | | | | | | |
| 600W Transient Voltage Suppressor | | | | | | | | | | | |
| P6KE480 | P6KE480C | 389 | 432 | 528 | 1 | 1 | 1 | 691 | 0.87 | P6KE480 | P6KE480C |
| P6KE480A | P6KE480CA | 408 | 456 | 504 | 1 | 1 | 1 | 658 | 0.91 | P6KE480A | P6KE480CA |
| P6KE550 | P6KE550C | 445.5 | 495 | 605 | 1 | 1 | 1 | 792 | 0.76 | P6KE550 | P6KE550C |
| P6KE550A | P6KE550CA | 467.5 | 522.5 | 577.5 | 1 | 1 | 1 | 753.5 | 0.8 | P6KE550A | P6KE550CA |

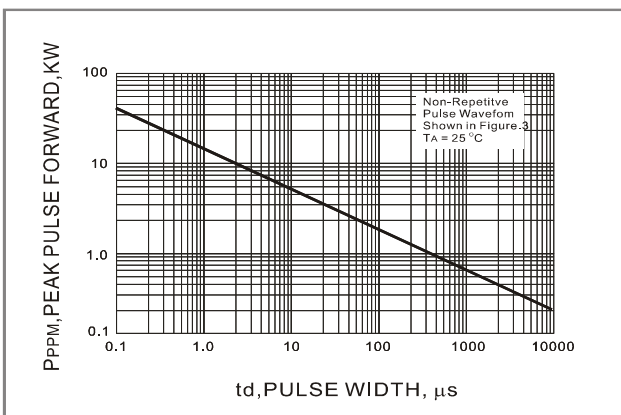


Fig.1 PEAK PULSE POWER RATING PULSE TIME CURVE

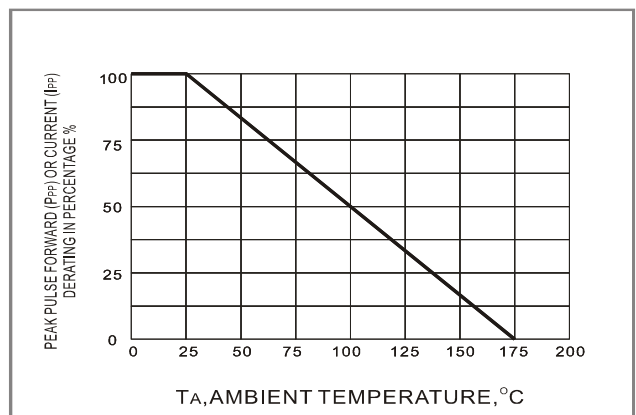


Fig.2 PULSE DERATING CURVE

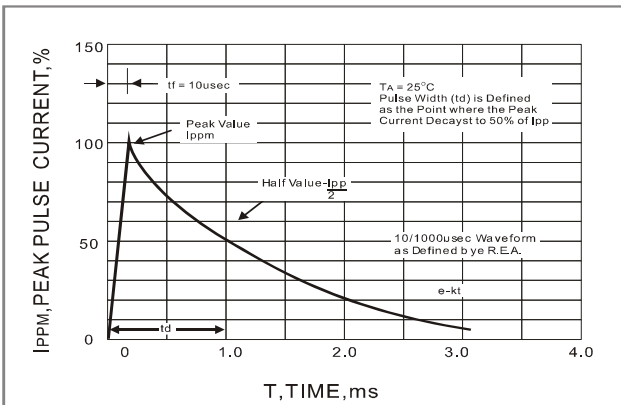


Fig.3 PULSE WAVEFORM

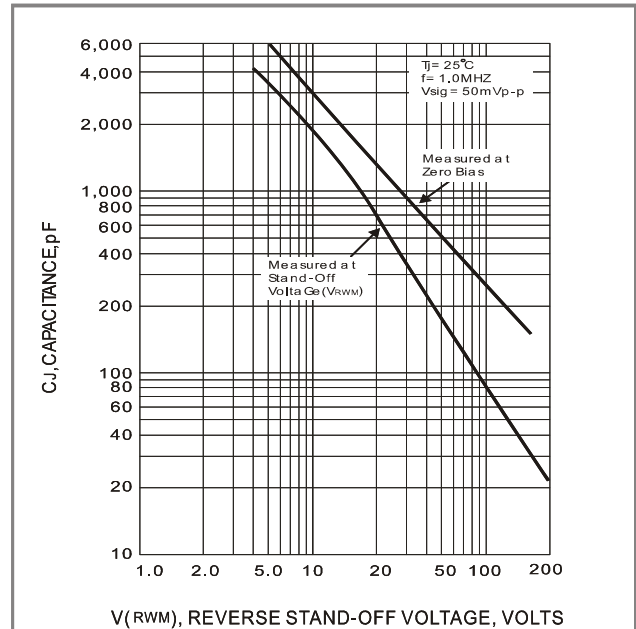


Fig.4 TYPICAL JUNCTION CAPACITANCE UNIDIRECTIONAL

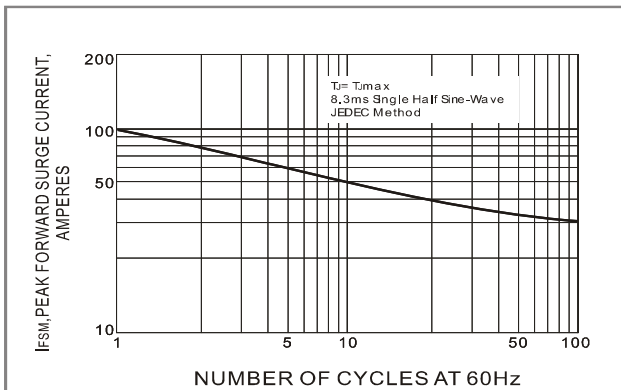


Fig.5 MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT



P6KE SERIES

Part No_packing code_Version

P6KE6.8_AY_00001

P6KE6.8_AY_10001

P6KE6.8_B0_00001

P6KE6.8_B0_10001

P6KE6.8_R2_00001

P6KE6.8_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 | | | |



P6KE SERIES

Disclaimer

- Reproducing and modifying information of the document is prohibited without permission from Panjit International Inc..
- Panjit International Inc. reserves the rights to make changes of the content herein the document anytime without notification. Please refer to our website for the latest document.
- Panjit International Inc. disclaims any and all liability arising out of the application or use of any product including damages incidentally and consequentially occurred.
- Panjit International Inc. does not assume any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.
- Applications shown on the herein document are examples of standard use and operation. Customers are responsible in comprehending the suitable use in particular applications. Panjit International Inc. makes no representation or warranty that such applications will be suitable for the specified use without further testing or modification.
- The products shown herein are not designed and authorized for equipments requiring high level of reliability or relating to human life and for any applications concerning life-saving or life-sustaining, such as medical instruments, transportation equipment, aerospace machinery et cetera. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Panjit International Inc. for any damages resulting from such improper use or sale.
- Since Panjit uses lot number as the tracking base, please provide the lot number for tracking when complaining.