

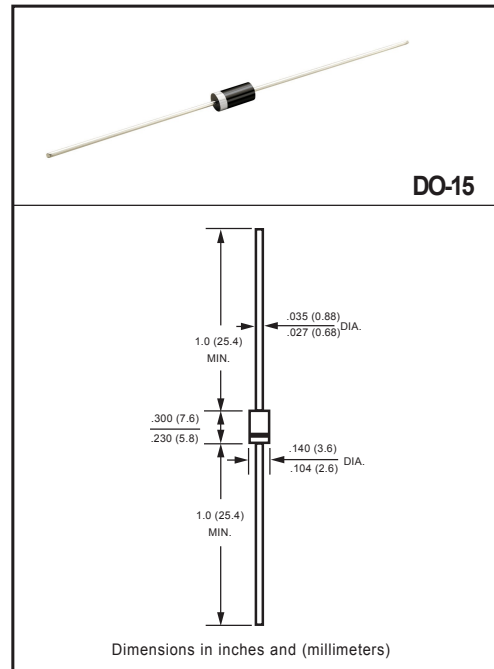
**GPP TRANSIENT VOLTAGE SUPPRESSOR
600 WATT PEAK POWER 5.0 WATTS STEADY STATE**

FEATURES

- * Plastic package has underwriters laboratory
- * Glass passivated chip construction
- * 600 watt surge capability at 1ms
- * Excellent clamping capability
- * Low zener impedance
- * Fast response time
- * P/N suffix V means AEC-Q101 qualified, e.g:P6KE6.8CAV
- * P/N suffix V means Halogen-free

MECHANICAL DATA

- * Epoxy: Device has UL flammability classification 94V-O
- * UL file No.:E211196



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25 °C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load,
For capacitive load, derate current by 20%.

MAXIMUM RATINGS (@ TA=25 °C unless otherwise noted)

| RATINGS | SYMBOL | VALUE | UNITS |
|---|------------------|--------------|------------------|
| Peak Power Dissipation at TA = 25°C, TP = 1mS (Note 1) | PPPM | Minimum 600 | W |
| Steady State Power Dissipation at TL = 75°C lead length, .375" (9.5 mm) (Note 2) | PM(AV) | 5.0 | W |
| Peak Forward Surge Current, 8.3mS Single half sine-wave superimposed on rated load (JEDEC METHODE) (Note 4) | IFSM | 100 | A |
| Typical Current Squared Time | i ² T | 41.5 | A ² S |
| Maximum instantaneous forwards voltage at 50A for unidirectional only (Note 5) | VF | 3.5/5.0 | V |
| Operating and Storage Temperature Range | TJ, TSTG | -55 to + 150 | °C |

- NOTES : 1. Non-repetitive current pulse, per Fig.3 and derated above TA = 25°C per Fig.2.
2. Mounted on 0.2 X 0.2" (5.0 X 5.0mm) copper pad to each terminal.
3. " ROHS compliant"
4. Mesured on 8.3ms single half sine-wave or equivalent square wave duty cycle =4 pulses per minute maximum.
5. VF =3.0V max. for devices of V(BR) ≤220V and VF =5.0Volts for device of V(BR) ≥220V.

2023-02
REV:F

RATING AND CHARACTERISTICS CURVES (P6KE6.8 THRU P6KE600CA)



FIG.1 PEAK PULSE POWER RATING CURVE

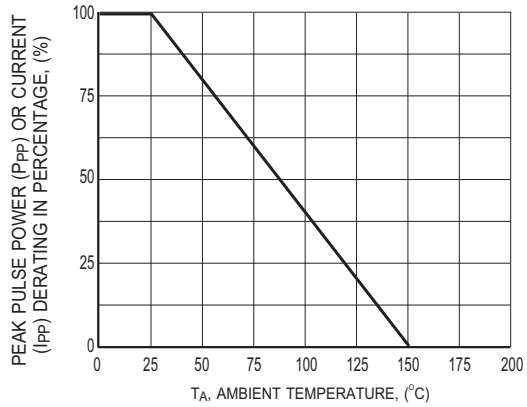


FIG.2 PULSE DERATING CURVE



FIG.3 PULSE WAVEFORM

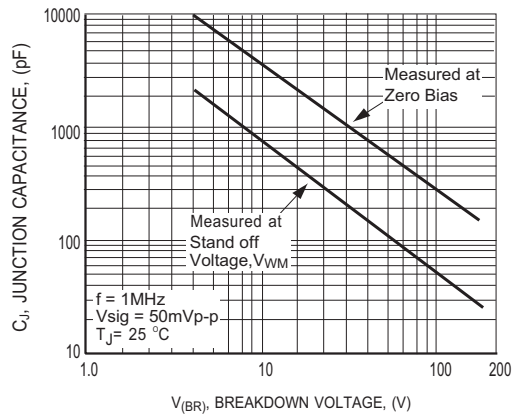


FIG.4 TYPICAL JUNCTION CAPACITANCE BIDIRECTIONAL

RATING AND CHARACTERISTICS CURVES (P6KE6.8 THRU P6KE600CA)



FIG.5 STEADY STATE POWER DERATING CURVE



FIG.6 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT UNIDIRECTIONAL



FIG.7 TYPICAL REVERSE LEAKAGE CHARACTERISTICS

TRANSIENT VOLTAGE SUPPRESSORS

600W SERIES TVS DIODES / DO-15 (CASE 8) 600W

| TYPE | Breakdown Voltage | | | Reverse Stand off Voltage V_{WM} (Volts) | Maximum Reverse Leakage at V_{WM} I_D (μ A) | Maximum Peak Pulse Current I_{PPM} (Amps) | Maximum Clamping Voltage at I_{PPM} V_C (Volts) |
|----------|-------------------|------|--------------|--|--|---|---|
| | V_{BR} (Volts) | | @ I_T (mA) | | | | |
| | MIN. | MAX. | | | | | |
| P6KE6.8 | 6.12 | 7.48 | 10 | 5.50 | 1000 | 55.6 | 10.8 |
| P6KE6.8A | 6.45 | 7.14 | 10 | 5.80 | 1000 | 57.1 | 10.5 |
| P6KE7.5 | 6.75 | 8.25 | 10 | 6.05 | 500 | 51.3 | 11.7 |
| P6KE7.5A | 7.13 | 7.88 | 10 | 6.40 | 500 | 53.1 | 11.3 |
| P6KE8.2 | 7.38 | 9.02 | 10 | 6.63 | 200 | 48 | 12.5 |
| P6KE8.2A | 7.79 | 8.61 | 10 | 7.02 | 200 | 49.6 | 12.1 |
| P6KE9.1 | 8.19 | 10.0 | 1.0 | 7.37 | 50 | 43.5 | 13.8 |
| P6KE9.1A | 8.65 | 9.55 | 1.0 | 7.78 | 50 | 44.8 | 13.4 |
| P6KE10 | 9.00 | 11.0 | 1.0 | 8.10 | 10 | 40 | 15.0 |
| P6KE10A | 9.50 | 10.5 | 1.0 | 8.55 | 10 | 41.4 | 14.5 |
| P6KE11 | 9.90 | 12.1 | 1.0 | 8.92 | 5.0 | 37 | 16.2 |
| P6KE11A | 10.5 | 11.6 | 1.0 | 9.40 | 5.0 | 38.5 | 15.6 |
| P6KE12 | 10.8 | 13.2 | 1.0 | 9.72 | 5.0 | 34.7 | 17.3 |
| P6KE12A | 11.4 | 12.6 | 1.0 | 10.2 | 5.0 | 35.9 | 16.7 |
| P6KE13 | 11.7 | 14.3 | 1.0 | 10.5 | 5.0 | 31.6 | 19.0 |
| P6KE13A | 12.4 | 13.7 | 1.0 | 11.1 | 5.0 | 33 | 18.2 |
| P6KE15 | 13.5 | 16.5 | 1.0 | 12.1 | 5.0 | 27.3 | 22.0 |
| P6KE15A | 14.3 | 15.8 | 1.0 | 12.8 | 5.0 | 28.3 | 21.2 |
| P6KE16 | 14.4 | 17.6 | 1.0 | 12.9 | 5.0 | 25.5 | 23.5 |
| P6KE16A | 15.2 | 16.8 | 1.0 | 13.6 | 5.0 | 26.7 | 22.5 |
| P6KE18 | 16.2 | 19.8 | 1.0 | 14.5 | 5.0 | 22.6 | 26.5 |
| P6KE18A | 17.1 | 18.9 | 1.0 | 15.3 | 5.0 | 23.8 | 25.2 |
| P6KE20 | 18.0 | 22.0 | 1.0 | 16.2 | 5.0 | 20.6 | 29.1 |
| P6KE20A | 19.0 | 21.0 | 1.0 | 17.1 | 5.0 | 21.7 | 27.7 |
| P6KE22 | 19.8 | 24.2 | 1.0 | 17.8 | 5.0 | 18.8 | 31.9 |
| P6KE22A | 20.9 | 23.1 | 1.0 | 18.8 | 5.0 | 19.6 | 30.6 |
| P6KE24 | 21.6 | 26.4 | 1.0 | 19.4 | 5.0 | 17.3 | 34.7 |
| P6KE24A | 22.8 | 25.2 | 1.0 | 20.5 | 5.0 | 18.1 | 33.2 |
| P6KE27 | 24.3 | 29.7 | 1.0 | 21.8 | 5.0 | 15.3 | 39.1 |
| P6KE27A | 25.7 | 28.4 | 1.0 | 23.1 | 5.0 | 16 | 37.5 |
| P6KE30 | 27.0 | 33.0 | 1.0 | 24.3 | 5.0 | 13.8 | 43.5 |
| P6KE30A | 28.5 | 31.5 | 1.0 | 25.6 | 5.0 | 14.5 | 41.4 |
| P6KE33 | 29.7 | 36.3 | 1.0 | 26.8 | 5.0 | 12.6 | 47.7 |
| P6KE33A | 31.4 | 34.7 | 1.0 | 28.2 | 5.0 | 13.1 | 45.7 |
| P6KE36 | 32.4 | 39.6 | 1.0 | 29.1 | 5.0 | 11.5 | 52.0 |
| P6KE36A | 34.2 | 37.8 | 1.0 | 30.8 | 5.0 | 12 | 49.9 |
| P6KE39 | 35.1 | 42.9 | 1.0 | 31.6 | 5.0 | 10.6 | 56.4 |
| P6KE39A | 37.1 | 41.0 | 1.0 | 33.3 | 5.0 | 11.1 | 53.9 |
| P6KE43 | 38.7 | 47.3 | 1.0 | 34.8 | 5.0 | 9.7 | 61.9 |
| P6KE43A | 40.9 | 45.2 | 1.0 | 36.8 | 5.0 | 10.1 | 59.3 |
| P6KE47 | 42.3 | 51.7 | 1.0 | 38.1 | 5.0 | 8.8 | 67.8 |
| P6KE47A | 44.7 | 49.4 | 1.0 | 40.2 | 5.0 | 9.3 | 64.8 |
| P6KE51 | 45.9 | 56.1 | 1.0 | 41.3 | 5.0 | 8.2 | 73.5 |
| P6KE51A | 48.5 | 53.6 | 1.0 | 43.6 | 5.0 | 8.6 | 70.1 |
| P6KE56 | 50.4 | 61.6 | 1.0 | 45.4 | 5.0 | 7.5 | 80.5 |
| P6KE56A | 53.2 | 58.8 | 1.0 | 47.8 | 5.0 | 7.8 | 77.0 |

TRANSIENT VOLTAGE SUPPRESSORS

600W SERIES TVS DIODES / DO-15 (CASE 8) 600W

| TYPE | Breakdown Voltage | | @I _T (mA) | Reverse Stand off Voltage V _{WM} (Volts) | Maximum Reverse Leakage at V _{WM} I _D (uA) | Maximum Peak Pulse Current I _{PPM} (Amps) | Maximum Clamping Voltage at I _{PPM} V _C (Volts) |
|----------|----------------------------|-------|-------------------------|---|---|--|--|
| | V _{BR} (Volts) | | | | | | |
| | MIN. | MAX. | | | | | |
| P6KE62 | 55.8 | 68.2 | 1.0 | 50.2 | 5.0 | 6.7 | 89.0 |
| P6KE62A | 58.9 | 65.1 | 1.0 | 53.0 | 5.0 | 7.1 | 85.0 |
| P6KE68 | 61.2 | 74.8 | 1.0 | 55.1 | 5.0 | 6.1 | 98.0 |
| P6KE68A | 64.6 | 71.4 | 1.0 | 58.1 | 5.0 | 6.5 | 92.0 |
| P6KE75 | 67.5 | 82.5 | 1.0 | 60.7 | 5.0 | 5.6 | 108 |
| P6KE75A | 71.3 | 78.8 | 1.0 | 64.1 | 5.0 | 5.8 | 103 |
| P6KE82 | 73.8 | 90.2 | 1.0 | 66.4 | 5.0 | 5.1 | 118 |
| P6KE82A | 77.9 | 86.1 | 1.0 | 70.1 | 5.0 | 5.3 | 113 |
| P6KE91 | 81.9 | 100 | 1.0 | 73.7 | 5.0 | 4.6 | 131 |
| P6KE91A | 86.5 | 95.5 | 1.0 | 77.8 | 5.0 | 4.8 | 125 |
| P6KE100 | 90.0 | 110 | 1.0 | 81.0 | 5.0 | 4.2 | 144 |
| P6KE100A | 95.0 | 105 | 1.0 | 85.5 | 5.0 | 4.4 | 137 |
| P6KE110 | 99.0 | 121 | 1.0 | 89.2 | 5.0 | 3.8 | 158 |
| P6KE110A | 105 | 116 | 1.0 | 94.0 | 5.0 | 3.9 | 152 |
| P6KE120 | 108 | 132 | 1.0 | 97.2 | 5.0 | 3.5 | 173 |
| P6KE120A | 114 | 126 | 1.0 | 102 | 5.0 | 3.6 | 165 |
| P6KE130 | 117 | 143 | 1.0 | 105 | 5.0 | 3.2 | 187 |
| P6KE130A | 124 | 137 | 1.0 | 111 | 5.0 | 3.4 | 179 |
| P6KE150 | 135 | 165 | 1.0 | 121 | 5.0 | 2.8 | 215 |
| P6KE150A | 143 | 158 | 1.0 | 128 | 5.0 | 2.9 | 207 |
| P6KE160 | 144 | 176 | 1.0 | 130 | 5.0 | 2.6 | 230 |
| P6KE160A | 152 | 168 | 1.0 | 136 | 5.0 | 2.7 | 219 |
| P6KE170 | 153 | 187 | 1.0 | 138 | 5.0 | 2.5 | 244 |
| P6KE170A | 162 | 179 | 1.0 | 145 | 5.0 | 2.6 | 234 |
| P6KE180 | 162 | 198 | 1.0 | 146 | 5.0 | 2.3 | 258 |
| P6KE180A | 171 | 189 | 1.0 | 154 | 5.0 | 2.4 | 246 |
| P6KE200 | 180 | 220 | 1.0 | 162 | 5.0 | 2.1 | 287 |
| P6KE200A | 190 | 210 | 1.0 | 171 | 5.0 | 2.2 | 274 |
| P6KE220 | 198 | 242 | 1.0 | 175 | 5.0 | 1.7 | 344 |
| P6KE220A | 209 | 231 | 1.0 | 185 | 5.0 | 1.8 | 328 |
| P6KE250 | 225 | 275 | 1.0 | 202 | 5.0 | 1.7 | 360 |
| P6KE250A | 237 | 263 | 1.0 | 214 | 5.0 | 1.7 | 344 |
| P6KE300 | 270 | 330 | 1.0 | 243 | 5.0 | 1.4 | 430 |
| P6KE300A | 285 | 315 | 1.0 | 256 | 5.0 | 1.4 | 414 |
| P6KE325 | 292 | 358 | 1.0 | 263 | 5.0 | 1.3 | 462 |
| P6KE325A | 309 | 341 | 1.0 | 278 | 5.0 | 1.3 | 448 |
| P6KE350 | 315 | 385 | 1.0 | 284 | 5.0 | 1.2 | 504 |
| P6KE350A | 332 | 368 | 1.0 | 300 | 5.0 | 1.2 | 482 |
| P6KE400 | 360 | 440 | 1.0 | 324 | 5.0 | 1.0 | 574 |
| P6KE400A | 380 | 420 | 1.0 | 342 | 5.0 | 1.1 | 548 |
| P6KE440 | 396 | 484 | 1.0 | 356 | 5.0 | 0.95 | 631 |
| P6KE440A | 418 | 462 | 1.0 | 376 | 5.0 | 1.0 | 602 |
| P6KE480A | 456 | 504 | 1.0 | 408 | 5.0 | 0.9 | 658 |
| P6KE510A | 485 | 535 | 1.0 | 434 | 5.0 | 0.9 | 698 |
| P6KE530A | 503.5 | 556.5 | 1.0 | 477 | 5.0 | 0.8 | 725 |
| P6KE540A | 513 | 567 | 1.0 | 486 | 5.0 | 0.8 | 740 |
| P6KE550A | 522.5 | 577.5 | 1.0 | 495 | 5.0 | 0.8 | 760 |
| P6KE600A | 570 | 630 | 1.0 | 512 | 5.0 | 0.75 | 828 |

- Notes :
1. V_{BR} measured after I_T applied for 300ms. I_T = square pulse or equivalent.
 2. For bidirectional use C or CA suffixs for all types (ex. P6KE6.8C,P6KE600CA) electrical characteristics apply in both directions.
 3. For bidirectional types having V_{WM} of 10 volts and less, the I_D limit is doubled.
 4. All devices UL listed file# E211196.



Attachment information about P6KE Series

1. Marking on the body



PACKAGING OF DIODE AND BRIDGE RECTIFIERS

BULK PACK

| PACKAGE | PACKING CODE | EA PER BOX | INNER BOX SIZE (mm) | CARTON SIZE (mm) | EA PER CARTON | GROSS WEIGHT(Kg) |
|---------|--------------|------------|---------------------|------------------|---------------|------------------|
| DO-15 | -B | 500 | 194*84*21 | 415*220*255 | 25,000 | 12.74 |

REEL PACK

| PACKAGE | PACKING CODE | EA PER REEL | EA PER INNER BOX | COMPONENT SPACE (mm) | TAPE SPACE (mm) | REEL DIA (mm) | CARTON SIZE (mm) | EA PER CARTON | GROSS WEIGHT(Kg) |
|---------|--------------|-------------|------------------|----------------------|-----------------|---------------|------------------|---------------|------------------|
| DO-15 | -T | 4,000 | 4,000 | 5.0 | 52 | 330 | 355*350*335 | 16,000 | 10.05 |

AMMO PACK

| PACKAGE | PACKING CODE | REEL (EA) | COMPONENT SPACE(mm) | TAPE SPACE (mm) | BOX SIZE (mm) | CARTON SIZE(mm) | CARTON (EA) | GROSS WEIGHT (Kg) |
|---------|--------------|-------------|---------------------|-----------------|---------------|-----------------|---------------|-------------------|
| DO-15 | -F | 1,500 | 5.0 | 52 | 255*73*100 | 400*268*225 | 15,000 | 8.8 |

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