

ALSO
AVAILABLE IN
SURFACE
MOUNT

Microsemi Corp.
The diode experts

SCOTTSDALE, AZ
For more information call:
(602) 941-6300

**P6KE6.8 thru
P6KE200A**

FEATURES

- ECONOMICAL SERIES
- AVAILABLE IN BOTH UNIDIRECTIONAL AND BIDIRECTIONAL CONSTRUCTION
- 6.8 TO 200 VOLTS AVAILABLE
- 600 WATTS PEAK PULSE POWER DISSIPATION

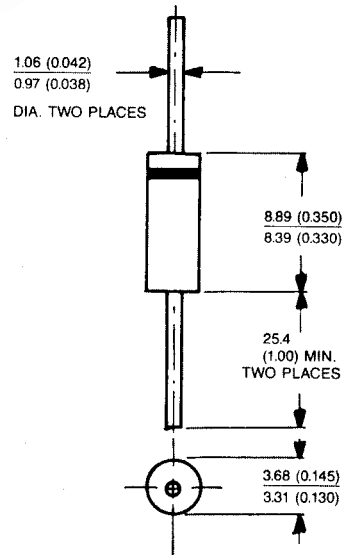
MAXIMUM RATINGS

Peak Pulse Power Dissipation at 25°C: 600 Watts
Steady State Power Dissipation: 5 Watts at $T_L = +75^\circ\text{C}$, 3/8" Lead Length
t_{clamping} (0 Volts to BV Min.):
Unidirectional $< 1 \times 10^{-12}$ Seconds; Bidirectional $< 5 \times 10^{-9}$ Seconds.
Operating and Storage Temperature: -65° to 200°C

APPLICATION

TAZ is an economical, molded, commercial product used to protect voltage-sensitive components from destruction or partial degradation. The response time of their clamping action is virtually instantaneous (1×10^{-12} seconds) and they have a peak pulse power rating of 600 watts for 1 msec as depicted in Figure 1 and 2. Microsemi also offers various varieties of TAZ to meet higher and lower power demands and special applications.

TRANSIENT ABSORPTION ZENER



Cathode Indicated by Band
All Dimensions in Millimeters (Inches)

MECHANICAL CHARACTERISTICS

CASE: Void free transfer molded thermosetting plastic (T-18).
FINISH: Silver plated copper readily solderable.
POLARITY: Band denotes cathode. Bidirectional not marked.
WEIGHT: 0.7 gram (Appx.).
MOUNTING POSITION: Any.

P6KE6.8 thru P6KE200A

ELECTRICAL CHARACTERISTICS $T_A = 25^\circ\text{C}$

| MICROSEMI PART NUMBER | BREAKDOWN VOLTAGE $V_{(BR)}$ NOM. | | | TEST CURRENT I_T mADC | RATED STAND-OFF VOLTAGE V_{WM} V | MAX. REVERSE LEAKAGE CURRENT I_D @ V_{WM} μADC | MAX. CLAMPING VOLTAGE V_C @ I_{PP} V | MAX. PEAK PULSE CURRENT I_{PP} A | MAX. TEMP. COEFFICIENT OF V_{BR} (TA) -55°C TO 100°C %/°C |
|-----------------------------|--|-----|------|----------------------------------|--|---|---|---|---|
| | MIN. | VDC | MAX. | | | | | | |
| | VDC | VDC | VDC | | | | | | |
| P6KE6.8 | 6.12 | 6.8 | 7.48 | 10 | 5.5 | 1000 | 10.8 | 56 | .057 |
| P6KE6.8A | 6.45 | 6.8 | 7.14 | 10 | 5.8 | 1000 | 10.5 | 57 | .057 |
| P6KE7.5 | 6.75 | 7.5 | 8.25 | 10 | 6.05 | 500 | 11.7 | 51 | .061 |
| P6KE7.5A | 7.13 | 7.5 | 7.88 | 10 | 6.4 | 500 | 11.3 | 53 | .061 |
| P6KE8.2 | 7.38 | 8.2 | 9.02 | 10 | 6.63 | 200 | 12.5 | 48 | .065 |
| P6KE8.2A | 7.79 | 8.2 | 8.61 | 10 | 7.02 | 200 | 12.1 | 50 | .065 |
| P6KE9.1 | 8.19 | 9.1 | 10 | 1 | 7.37 | 50 | 13.8 | 44 | .068 |
| P6KE9.1A | 8.65 | 9.1 | 9.55 | 1 | 7.78 | 50 | 13.4 | 45 | .068 |
| P6KE10 | 9.0 | 10 | 11 | 1 | 8.1 | 10 | 15 | 40 | .073 |
| P6KE10A | 9.5 | 10 | 10.5 | 1 | 8.55 | 10 | 14.5 | 41 | .073 |
| P6KE11 | 9.9 | 11 | 12.1 | 1 | 8.92 | 5 | 16.2 | 37 | .075 |
| P6KE11A | 10.5 | 11 | 11.6 | 1 | 9.4 | 5 | 15.6 | 38 | .075 |
| P6KE12 | 10.8 | 12 | 13.2 | 1 | 9.72 | 5 | 17.3 | 35 | .078 |
| P6KE12A | 11.4 | 12 | 12.6 | 1 | 10.2 | 5 | 16.7 | 36 | .078 |
| P6KE13 | 11.7 | 13 | 14.3 | 1 | 10.5 | 5 | 19 | 32 | .081 |
| P6KE13A | 12.4 | 13 | 13.7 | 1 | 11.1 | 5 | 18.2 | 33 | .081 |
| P6KE15 | 13.5 | 15 | 16.5 | 1 | 12.1 | 5 | 22 | 27 | .084 |
| P6KE15A | 14.3 | 15 | 15.8 | 1 | 12.8 | 5 | 21.2 | 28 | .084 |
| P6KE16 | 14.4 | 16 | 17.6 | 1 | 12.9 | 5 | 23.5 | 26 | .086 |
| P6KE16A | 15.2 | 16 | 16.8 | 1 | 13.6 | 5 | 22.5 | 27 | .086 |
| P6KE18 | 16.2 | 18 | 19.8 | 1 | 14.5 | 5 | 26.5 | 23 | .088 |
| P6KE18A | 17.1 | 18 | 18.9 | 1 | 15.3 | 5 | 25.2 | 24 | .088 |
| P6KE20 | 18 | 20 | 22 | 1 | 16.2 | 5 | 29.1 | 21 | .090 |
| P6KE20A | 19 | 20 | 21 | 1 | 17.1 | 5 | 27.7 | 22 | .090 |
| P6KE22 | 19.8 | 22 | 24.2 | 1 | 17.8 | 5 | 31.9 | 19 | .092 |
| P6KE22A | 20.9 | 22 | 23.1 | 1 | 18.8 | 5 | 30.6 | 20 | .092 |
| P6KE24 | 21.6 | 24 | 26.4 | 1 | 19.4 | 5 | 34.7 | 17 | .094 |
| P6KE24A | 22.8 | 24 | 25.2 | 1 | 20.5 | 5 | 33.2 | 18 | .094 |
| P6KE27 | 24.3 | 27 | 29.7 | 1 | 21.8 | 5 | 39.1 | 15 | .096 |
| P6KE27A | 25.7 | 27 | 28.4 | 1 | 23.1 | 5 | 37.5 | 16 | .096 |
| P6KE30 | 27 | 30 | 33 | 1 | 24.3 | 5 | 43.5 | 14 | .097 |
| P6KE30A | 28.5 | 30 | 31.5 | 1 | 25.6 | 5 | 41.4 | 14.4 | .097 |
| P6KE33 | 29.7 | 33 | 36.3 | 1 | 26.8 | 5 | 47.7 | 12.6 | .098 |
| P6KE33A | 31.4 | 33 | 34.7 | 1 | 28.2 | 5 | 45.7 | 13.2 | .098 |
| P6KE36 | 32.4 | 36 | 39.6 | 1 | 29.1 | 5 | 52 | 11.6 | .099 |
| P6KE36A | 34.2 | 36 | 37.8 | 1 | 30.8 | 5 | 49.9 | 12 | .099 |
| P6KE39 | 35.1 | 39 | 42.9 | 1 | 31.6 | 5 | 56.4 | 10.6 | .100 |
| P6KE39A | 37.1 | 39 | 41 | 1 | 33.3 | 5 | 53.9 | 11.2 | .100 |
| P6KE43 | 38.7 | 43 | 47.3 | 1 | 34.8 | 5 | 61.9 | 9.6 | .101 |
| P6KE43A | 40.9 | 43 | 45.2 | 1 | 36.8 | 5 | 59.3 | 10.1 | .101 |
| P6KE47 | 42.3 | 47 | 51.7 | 1 | 38.1 | 5 | 67.8 | 8.8 | .101 |
| P6KE47A | 44.7 | 47 | 49.4 | 1 | 40.2 | 5 | 64.8 | 9.3 | .101 |
| P6KE51 | 45.9 | 51 | 56.1 | 1 | 41.3 | 5 | 73.5 | 8.2 | .102 |
| P6KE51A | 48.5 | 51 | 53.6 | 1 | 43.6 | 5 | 70.1 | 8.6 | .102 |
| P6KE56 | 50.4 | 56 | 61.6 | 1 | 45.4 | 5 | 80.5 | 7.4 | .103 |
| P6KE56A | 53.2 | 56 | 58.8 | 1 | 47.8 | 5 | 77 | 7.8 | .103 |
| P6KE62 | 55.8 | 62 | 68.2 | 1 | 50.2 | 5 | 89 | 6.8 | .104 |
| P6KE62A | 58.9 | 62 | 65.1 | 1 | 53 | 5 | 85 | 7.1 | .104 |
| P6KE68 | 61.2 | 68 | 74.8 | 1 | 55.1 | 5 | 98 | 6.1 | .104 |
| P6KE68A | 64.6 | 68 | 71.4 | 1 | 58.1 | 5 | 92 | 6.5 | .104 |
| P6KE75 | 67.5 | 75 | 82.5 | 1 | 60.7 | 5 | 108 | 5.5 | .105 |
| P6KE75A | 71.3 | 75 | 78.8 | 1 | 64.1 | 5 | 103 | 5.8 | .105 |
| P6KE82 | 73.8 | 82 | 90.2 | 1 | 66.4 | 5 | 118 | 5.1 | .105 |
| P6KE82A | 77.9 | 82 | 86.1 | 1 | 70.1 | 5 | 113 | 5.3 | .105 |
| P6KE91 | 81.9 | 91 | 100 | 1 | 73.7 | 5 | 131 | 4.5 | .106 |
| P6KE91A | 86.5 | 91 | 95.5 | 1 | 77.8 | 5 | 125 | 4.8 | .106 |
| P6KE100 | 90 | 100 | 110 | 1 | 81 | 5 | 144 | 4.2 | .106 |
| P6KE100A | 95 | 100 | 105 | 1 | 85.5 | 5 | 137 | 4.4 | .106 |
| P6KE110 | 99 | 110 | 121 | 1 | 89.2 | 5 | 158 | 3.8 | .107 |
| P6KE110A | 105 | 110 | 116 | 1 | 94 | 5 | 152 | 3.4 | .107 |
| P6KE120 | 108 | 120 | 132 | 1 | 97.2 | 5 | 173 | 3.5 | .107 |
| P6KE120A | 114 | 120 | 126 | 1 | 102 | 5 | 165 | 3.6 | .107 |
| P6KE130 | 117 | 130 | 143 | 1 | 105 | 5 | 187 | 3.2 | .107 |
| P6KE130A | 124 | 130 | 137 | 1 | 111 | 5 | 179 | 3.3 | .107 |
| P6KE150 | 135 | 150 | 165 | 1 | 121 | 5 | 215 | 2.8 | .108 |
| P6KE150A | 143 | 150 | 158 | 1 | 128 | 5 | 207 | 2.9 | .108 |
| P6KE160 | 144 | 160 | 176 | 1 | 130 | 5 | 230 | 2.6 | .108 |
| P6KE160A | 152 | 160 | 168 | 1 | 136 | 5 | 219 | 2.7 | .108 |
| P6KE170 | 153 | 170 | 187 | 1 | 138 | 5 | 244 | 2.5 | .108 |
| P6KE170A | 161 | 170 | 179 | 1 | 145 | 5 | 234 | 2.6 | .108 |
| P6KE180 | 162 | 180 | 198 | 1 | 146 | 5 | 258 | 2.3 | .108 |
| P6KE180A | 171 | 180 | 189 | 1 | 154 | 5 | 246 | 2.4 | .108 |
| P6KE200 | 180 | 200 | 220 | 1 | 162 | 5 | 287 | 2.1 | .108 |
| P6KE200A | 190 | 200 | 210 | 1 | 171 | 5 | 274 | 2.2 | .108 |

Forward Voltage (V_f) @ 50 amps peak, 8.3 msec sine wave equal to 3.5 volts max.
(For unidirectional only)

For Bidirectional Construction, indicate a C or CA suffix after part number, i.e. P6KE200CA. Capacitance will be 1/2 that shown in Figure 3.

SYMBOLS AND ABBREVIATIONS

- V_{WM} = Rated Stand-Off Voltage
- I_{PP} = Peak Pulse Current
- P_P = Peak Pulse Power
- V_C = Clamping Voltage
- $V_{(BR)}$ = Breakdown Voltage
- I_T = Test Current
- I_D = Reverse Leakage

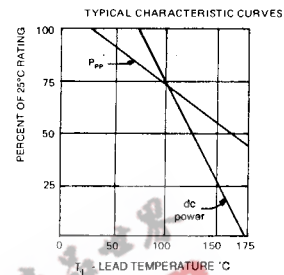


FIGURE 1
POWER DERATING CURVE

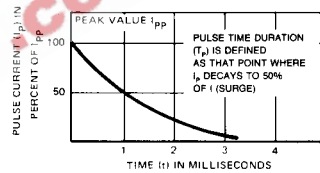


FIGURE 2
PULSE WAVEFORM FOR
EXPONENTIAL SURGE

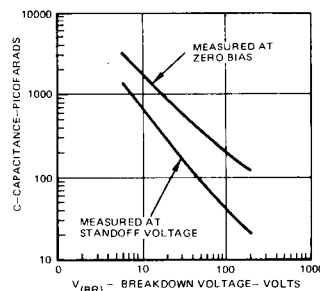


FIGURE 3
P6KE TYPICAL CAPACITANCE
VS BREAKDOWN VOLTAGE

Consult factory for higher voltages.