

UNIDIRECTIONAL AND BIDIRECTIONAL TRANSIENT VOLTAGE SUPPRESSORS

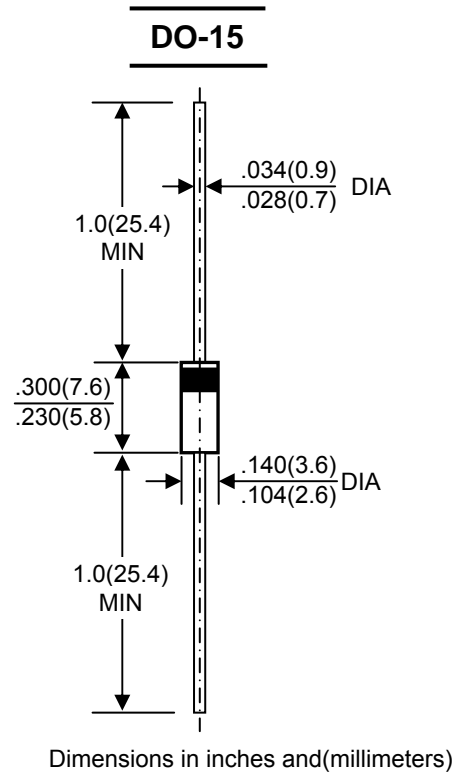
REVERSE VOLTAGE - 6.8 to 400Volts
POWER DISSIPATION - 600 Watts

FEATURES

- low leakage
- Uni and bidirectional unit
- Excellent clamping capability
- Plastic material has UL recognition 94V-0
- Fast response time

MECHANICAL DATA

- Case : Molded Plastic
- Marking : Unidirectional -type number and cathode band
Bidirectional-type number only
- Weight : 0.4 grams



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating at 25°C ambient temperature unless otherwise specified.

Single phase, half wave ,60Hz, resistive or inductive load.

For capacitive load, derate current by 20%

| CHARACTERISTICS | SYMBOL | VALUE | UNIT |
|---|-------------|--------------|-------|
| Peak Power Dissipation at $T_A=25^\circ\text{C}$ TP=1ms (NOTE1) | P_{PK} | Minimum 600 | WATTS |
| Peak Forward Surge Current 8.3ms Single Half Sine-Wave Super Imposed on Rated Load (JEDEC Method) | I_{FSM} | 100 | AMPS |
| Steady State Power Dissipation at $T_L=75^\circ\text{C}$ Lead Lengths 0.375"(9.5mm), See Fig. 4 | $P_{M(AV)}$ | 5.0 | WATTS |
| Maximum Instantaneous Forward Voltage at 50A for Unidirectional Devices Only (NOTE2) | V_F | See NOTE 3 | VOLTS |
| Operating Temperature Range | T_J | -55 to + 150 | °C |
| Storage Temperature Range | T_{STG} | -55 to + 175 | °C |

NOTES:1. Non-repetitive current pulse ,per Fig. 5 and derated above $T_A=25^\circ\text{C}$ per Fig. 1 .

2. 8.3ms single half-wave duty cycle=4 pulses per minutes maximum (uni-directional units only).

3. $V_F=3.5\text{V}$ on P6KE6.8 thru P6KE200A devices and $V_F=5.0\text{V}$ on P6KE220A thru P6KE400A devices.

FIG.1-PULSE DERATING CURVE

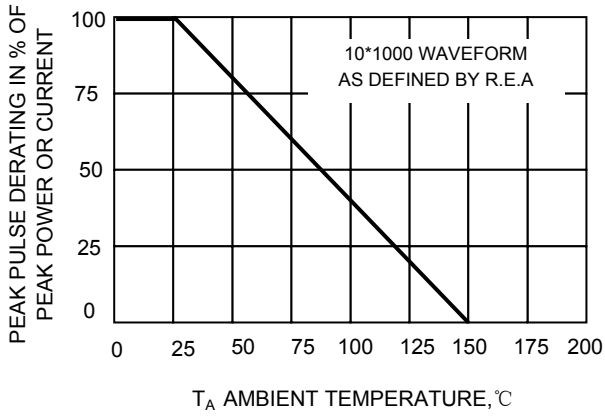


FIG.2-TYPICAL JUNCTION CAPACITANCE

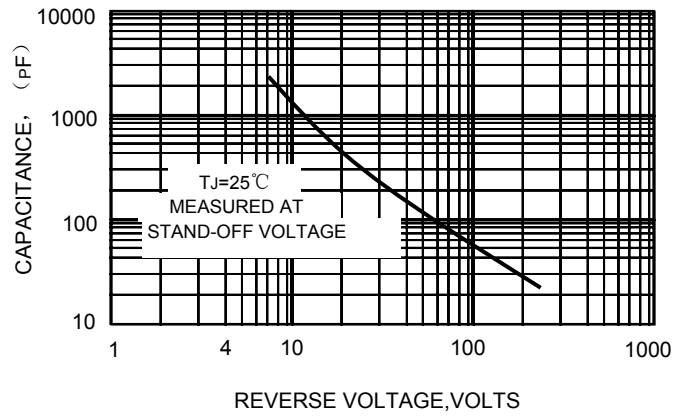


FIG.3-PULSE RATING CURVE

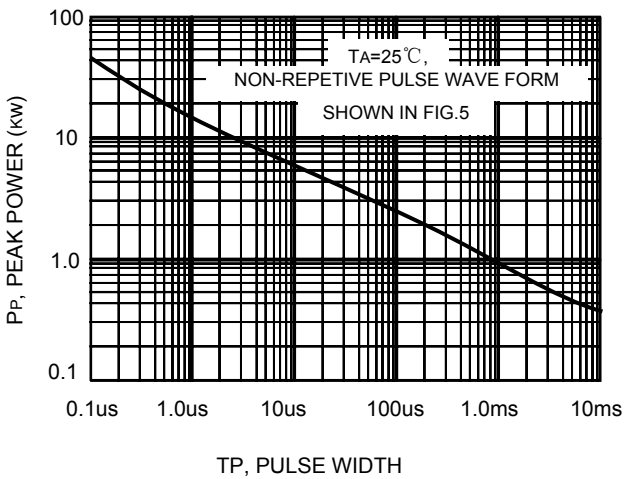


FIG.4-STeady STATE POWER DERATING CURVE

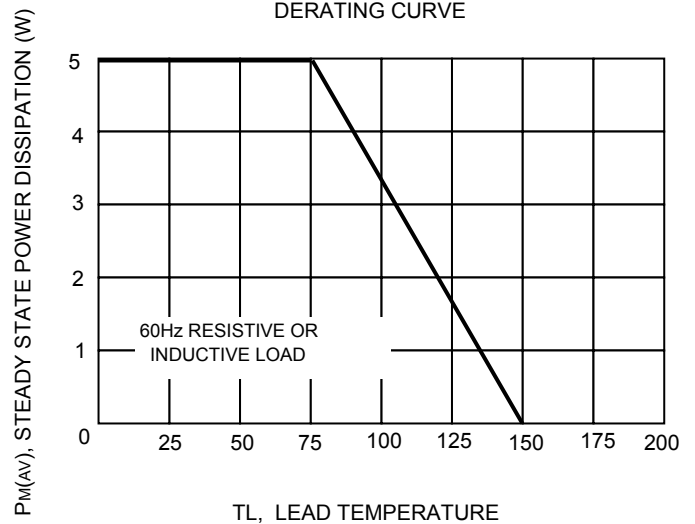
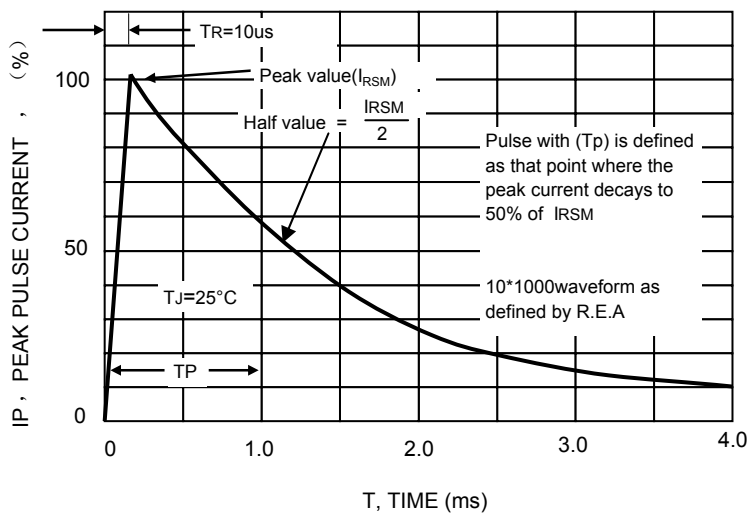


FIG.5-PULSE WAVEFORM





P6KE SERIES

| Type Number | Type Number | Reverse Standoff Voltage | Breakdown Voltage BV Lotts@It | | | Max. Reverse Leakage @ VR | Max. Clamping Voltage @ Ipp | Max. Peak Pulse Current | Max. Voltage Temp. Variation of Bv |
|-------------|-------------|--------------------------|-------------------------------|--------|--------|---------------------------|-----------------------------|-------------------------|------------------------------------|
| | | | Min(V) | Max(V) | It(mA) | | | | |
| (UNI) | (BI) | VR(V) | Min(V) | Max(V) | It(mA) | IR(μA) | Vc(V) | Ipp(A) | mV/°C |
| P6KE6.8 | P6KE6.8C | 5.50 | 6.12 | 7.48 | 10 | 1000 | 10.8 | 56.0 | 0.057 |
| P6KE6.8A | P6KE6.8CA | 5.80 | 6.45 | 7.14 | 10 | 1000 | 10.5 | 57.0 | 0.057 |
| P6KE7.5 | P6KE7.5C | 6.05 | 6.75 | 8.25 | 10 | 500 | 11.7 | 51.0 | 0.061 |
| P6KE7.5A | P6KE7.5CA | 6.40 | 7.13 | 7.88 | 10 | 500 | 11.3 | 53.0 | 0.061 |
| P6KE8.2 | P6KE8.2C | 6.63 | 7.38 | 9.02 | 10 | 200 | 12.5 | 48.0 | 0.065 |
| P6KE8.2A | P6KE8.2CA | 7.02 | 7.79 | 8.61 | 10 | 200 | 12.1 | 50.0 | 0.065 |
| P6KE9.1 | P6KE9.1C | 7.37 | 8.19 | 10.00 | 1 | 50 | 13.8 | 44.0 | 0.068 |
| P6KE9.1A | P6KE9.1CA | 7.78 | 8.65 | 9.55 | 1 | 50 | 13.4 | 45.0 | 0.068 |
| P6KE10 | P6KE10C | 8.10 | 9.00 | 11.00 | 1 | 10 | 15.0 | 40.0 | 0.073 |
| P6KE10A | P6KE10CA | 8.55 | 9.50 | 10.50 | 1 | 10 | 14.5 | 41.0 | 0.073 |
| P6KE11 | P6KE11C | 8.92 | 9.90 | 12.10 | 1 | 5 | 16.2 | 37.0 | 0.075 |
| P6KE11A | P6KE11CA | 9.40 | 10.50 | 11.60 | 1 | 5 | 15.6 | 38.0 | 0.075 |
| P6KE12 | P6KE12C | 9.72 | 10.80 | 13.20 | 1 | 5 | 17.3 | 35.0 | 0.078 |
| P6KE12A | P6KE12CA | 10.20 | 11.40 | 12.60 | 1 | 5 | 16.7 | 36.0 | 0.078 |
| P6KE13 | P6KE13C | 10.50 | 11.70 | 14.30 | 1 | 5 | 19.0 | 32.0 | 0.081 |
| P6KE13A | P6KE13CA | 11.10 | 12.40 | 13.70 | 1 | 5 | 18.2 | 33.0 | 0.081 |
| P6KE15 | P6KE15C | 12.10 | 13.50 | 16.50 | 1 | 5 | 22.0 | 27.0 | 0.084 |
| P6KE15A | P6KE15CA | 12.80 | 14.30 | 15.80 | 1 | 5 | 21.2 | 28.0 | 0.084 |
| P6KE16 | P6KE16C | 12.90 | 14.40 | 17.60 | 1 | 5 | 23.5 | 26.0 | 0.086 |
| P6KE16A | P6KE16CA | 13.60 | 15.20 | 16.80 | 1 | 5 | 22.5 | 27.0 | 0.086 |
| P6KE18 | P6KE18C | 14.50 | 16.20 | 19.80 | 1 | 5 | 26.5 | 23.0 | 0.088 |
| P6KE18A | P6KE18CA | 15.30 | 17.10 | 18.90 | 1 | 5 | 25.2 | 24.0 | 0.088 |
| P6KE20 | P6KE20C | 16.20 | 18.00 | 22.00 | 1 | 5 | 29.1 | 21.0 | 0.090 |
| P6KE20A | P6KE20CA | 17.10 | 19.00 | 21.00 | 1 | 5 | 27.7 | 22.0 | 0.090 |
| P6KE22 | P6KE22C | 17.80 | 19.80 | 24.20 | 1 | 5 | 31.9 | 19.0 | 0.092 |
| P6KE22A | P6KE22CA | 18.80 | 20.90 | 23.10 | 1 | 5 | 30.6 | 20.0 | 0.092 |
| P6KE24 | P6KE24C | 19.40 | 21.60 | 26.40 | 1 | 5 | 34.7 | 17.0 | 0.094 |
| P6KE24A | P6KE24CA | 20.50 | 22.80 | 25.20 | 1 | 5 | 33.2 | 18.0 | 0.094 |
| P6KE27 | P6KE27C | 21.80 | 24.30 | 29.70 | 1 | 5 | 39.1 | 15.0 | 0.096 |
| P6KE27A | P6KE27CA | 23.10 | 25.70 | 28.40 | 1 | 5 | 37.5 | 16.0 | 0.096 |
| P6KE30 | P6KE30C | 24.30 | 27.00 | 33.00 | 1 | 5 | 43.5 | 14.0 | 0.097 |
| P6KE30A | P6KE30CA | 25.60 | 28.50 | 31.50 | 1 | 5 | 41.4 | 14.4 | 0.097 |
| P6KE33 | P6KE33C | 26.80 | 29.70 | 36.30 | 1 | 5 | 47.7 | 12.6 | 0.098 |
| P6KE33A | P6KE33CA | 28.20 | 31.40 | 34.70 | 1 | 5 | 45.7 | 13.2 | 0.098 |
| P6KE36 | P6KE36C | 29.10 | 32.40 | 39.60 | 1 | 5 | 52.0 | 11.6 | 0.099 |
| P6KE36A | P6KE36CA | 30.80 | 34.20 | 37.80 | 1 | 5 | 49.9 | 12.0 | 0.099 |
| P6KE39 | P6KE39C | 31.60 | 35.10 | 42.90 | 1 | 5 | 56.4 | 10.5 | 0.100 |
| P6KE39A | P6KE39CA | 33.30 | 37.10 | 41.00 | 1 | 5 | 53.9 | 11.2 | 0.100 |
| P6KE43 | P6KE43C | 34.80 | 38.70 | 47.30 | 1 | 5 | 61.9 | 9.6 | 0.101 |
| P6KE43A | P6KE43CA | 36.80 | 40.90 | 45.20 | 1 | 5 | 59.3 | 10.1 | 0.101 |
| P6KE47 | P6KE47C | 38.10 | 42.30 | 51.70 | 1 | 5 | 67.8 | 8.9 | 0.101 |
| P6KE47A | P6KE47CA | 40.20 | 44.70 | 49.40 | 1 | 5 | 64.8 | 9.3 | 0.101 |
| P6KE51 | P6KE51C | 41.30 | 45.90 | 56.10 | 1 | 5 | 73.5 | 8.2 | 0.102 |
| P6KE51A | P6KE51CA | 43.60 | 48.50 | 53.60 | 1 | 5 | 70.1 | 8.6 | 0.102 |
| P6KE56 | P6KE56C | 45.40 | 50.40 | 61.60 | 1 | 5 | 80.5 | 7.4 | 0.103 |
| P6KE56A | P6KE56CA | 47.80 | 53.20 | 58.80 | 1 | 5 | 77.0 | 7.8 | 0.103 |

P6KE SERIES



| Type Number | Type Number | Reverse Standoff Voltage | Breakdown Voltage BV Volts@It | | | Max. Reverse Leakage @ VR | Max. Clamping Voltage @ Ipp | Max. Peak Pulse Current | Max. Voltage Temp. Variation of Bv |
|-------------|-------------|--------------------------|-------------------------------|--------|--------|---------------------------|-----------------------------|-------------------------|------------------------------------|
| | | | Min(V) | Max(V) | It(mA) | | | | |
| (UNI) | (BI) | VR(V) | Min(V) | Max(V) | It(mA) | IR(μA) | Vc(V) | Ipp(A) | mV/°C |
| P6KE62 | P6KE62C | 50.2 | 55.8 | 68.2 | 1 | 5 | 89.0 | 6.80 | 0.104 |
| P6KE62A | P6KE62CA | 53.0 | 58.9 | 65.1 | 1 | 5 | 85.0 | 7.10 | 0.104 |
| P6KE68 | P6KE68C | 55.1 | 61.2 | 74.8 | 1 | 5 | 98.0 | 6.10 | 0.104 |
| P6KE68A | P6KE68CA | 58.1 | 64.6 | 71.4 | 1 | 5 | 92.0 | 6.50 | 0.104 |
| P6KE75 | P6KE75C | 60.7 | 67.5 | 82.5 | 1 | 5 | 108.0 | 5.50 | 0.105 |
| P6KE75A | P6KE75CA | 64.7 | 71.3 | 78.8 | 1 | 5 | 103.0 | 5.80 | 0.105 |
| P6KE82 | P6KE82C | 66.4 | 73.8 | 90.2 | 1 | 5 | 118.0 | 5.10 | 0.105 |
| P6KE82A | P6KE82CA | 70.1 | 77.9 | 86.1 | 1 | 5 | 113.0 | 5.30 | 0.105 |
| P6KE91 | P6KE91C | 73.7 | 81.9 | 100.0 | 1 | 5 | 131.0 | 4.50 | 0.106 |
| P6KE91A | P6KE91CA | 77.8 | 86.5 | 95.5 | 1 | 5 | 125.0 | 4.80 | 0.106 |
| P6KE100 | P6KE100C | 81.0 | 90.0 | 110.0 | 1 | 5 | 144.0 | 4.20 | 0.106 |
| P6KE100A | P6KE100CA | 85.5 | 95.0 | 105.0 | 1 | 5 | 137.0 | 4.40 | 0.106 |
| P6KE110 | P6KE110C | 89.2 | 99.0 | 121.0 | 1 | 5 | 158.0 | 3.80 | 0.107 |
| P6KE110A | P6KE110CA | 94.0 | 105.0 | 116.0 | 1 | 5 | 152.0 | 4.00 | 0.107 |
| P6KE120 | P6KE120C | 97.2 | 108.0 | 132.0 | 1 | 5 | 173.0 | 3.50 | 0.107 |
| P6KE120A | P6KE120CA | 102.0 | 114.0 | 126.0 | 1 | 5 | 165.0 | 3.60 | 0.107 |
| P6KE130 | P6KE130C | 105.0 | 117.0 | 143.0 | 1 | 5 | 187.0 | 3.20 | 0.107 |
| P6KE130A | P6KE130CA | 111.0 | 124.0 | 137.0 | 1 | 5 | 179.0 | 3.30 | 0.107 |
| P6KE150 | P6KE150C | 121.0 | 135.0 | 165.0 | 1 | 5 | 215.0 | 2.80 | 0.108 |
| P6KE150A | P6KE150CA | 128.0 | 143.0 | 158.0 | 1 | 5 | 207.0 | 2.90 | 0.108 |
| P6KE160 | P6KE160C | 130.0 | 144.0 | 176.0 | 1 | 5 | 230.0 | 2.60 | 0.108 |
| P6KE160A | P6KE160CA | 136.0 | 152.0 | 168.0 | 1 | 5 | 219.0 | 2.70 | 0.108 |
| P6KE170 | P6KE170C | 138.0 | 153.0 | 187.0 | 1 | 5 | 244.0 | 2.50 | 0.108 |
| P6KE170A | P6KE170CA | 145.0 | 162.0 | 179.0 | 1 | 5 | 234.0 | 2.60 | 0.108 |
| P6KE180 | P6KE180C | 146.0 | 162.0 | 198.0 | 1 | 5 | 258.0 | 2.30 | 0.108 |
| P6KE180A | P6KE180CA | 154.0 | 171.0 | 189.0 | 1 | 5 | 246.0 | 2.40 | 0.108 |
| P6KE200 | P6KE200C | 162.0 | 180.0 | 220.0 | 1 | 5 | 287.0 | 2.10 | 0.108 |
| P6KE200A | P6KE200CA | 171.0 | 190.0 | 210.0 | 1 | 5 | 274.0 | 2.20 | 0.108 |
| P6KE220 | P6KE220C | 175.0 | 198.0 | 242.0 | 1 | 5 | 344.0 | 1.75 | 0.108 |
| P6KE220A | P6KE220CA | 185.0 | 209.0 | 231.0 | 1 | 5 | 328.0 | 1.83 | 0.108 |
| P6KE250 | P6KE250C | 202.0 | 225.0 | 275.0 | 1 | 5 | 360.0 | 1.67 | 0.110 |
| P6KE250A | P6KE250CA | 214.0 | 237.0 | 263.0 | 1 | 5 | 344.4 | 1.75 | 0.110 |
| P6KE300 | P6KE300C | 243.0 | 270.0 | 330.0 | 1 | 5 | 430.0 | 1.40 | 0.110 |
| P6KE300A | P6KE300CA | 256.0 | 285.0 | 315.0 | 1 | 5 | 414.0 | 1.45 | 0.110 |
| P6KE350 | P6KE350C | 284.0 | 315.0 | 385.0 | 1 | 5 | 504.0 | 1.20 | 0.110 |
| P6KE350A | P6KE350CA | 300.0 | 332.0 | 368.0 | 1 | 5 | 482.0 | 1.25 | 0.110 |
| P6KE400 | P6KE400C | 324.0 | 360.0 | 440.0 | 1 | 5 | 574.0 | 1.05 | 0.110 |
| P6KE400A | P6KE400CA | 342.0 | 380.0 | 420.0 | 1 | 5 | 548.0 | 1.10 | 0.110 |

NOTES: Suffix 'C' denotes bidirectional device . Suffix 'A' denotes 5% tolerance device .no suffix denotes 10% tolerance device .

1. For bidirectional devices having VR of 10volts and under ,the IR limit is doubled .