

**GLASS PASSIVATED  
UNIDIRECTIONAL AND BIDIRECTIONAL  
TRANSIENT VOLTAGE SUPPRESSORS**

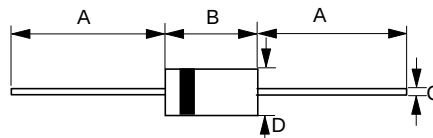
REVERSE VOLTAGE - **6.8 to 400** Volts  
POWER DISSIPATION - **600** WATTS

**FEATURES**

- Glass passivated chip
- Low leakage
- Uni and Bidirectional unit
- Excellent clamping capability
- The plastic material has U/L 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

**DO-15**


| DO-15                        |                    |                    |
|------------------------------|--------------------|--------------------|
| Dim.                         | Min.               | Max.               |
| A                            | 25.4               | -                  |
| B                            | 5.80               | 7.60               |
| C                            | 0.71 $\varnothing$ | 0.86 $\varnothing$ |
| D                            | 2.60 $\varnothing$ | 3.60 $\varnothing$ |
| All Dimensions in millimeter |                    |                    |

**MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS**

Ratings 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                                                                                            | SYMBOLS | VALUE       | UNIT  |
|------------------------------------------------------------------------------------------------------------|---------|-------------|-------|
| PEAK POWER DISSIPATION AT TA = 25°C, TP = 1ms (Note 1)                                                     | PPK     | Minimum 600 | WATTS |
| Peak Forward Surge Current 8.3ms single half sine-wave super imposed on rated load (Note 2) (JEDEC METHOD) | IFSM    | 100         | AMPS. |
| Steady State Power Dissipation at TL = 75°C lead lengths 0.375" (9.5mm) , see fig. 4                       | PM(AV)  | 5.0         | WATTS |
| Maximum Instantaneous forward voltage at 50A for unidirectional devices only (Note 2)                      | VF      | SEE NOTE 3  | Volts |
| Operating Temperature Range                                                                                | TJ      | -55 to +150 | °C    |
| Storage Temperature Range                                                                                  | TSTG    | -55 to +175 | °C    |

NOTES : 1. Non-repetitive current pulse, per fig. 5 and derated above TA= 25°C per fig. 1

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

3. VF= 3.5V on P6KE6.8 thru P6KE200A devices and VF= 5.0V on P6KE220 thru P6KE400A devices.

REV. 2, 01-Dec-2000, KDID02

FIG.1 - PULSE DERATING CURVE

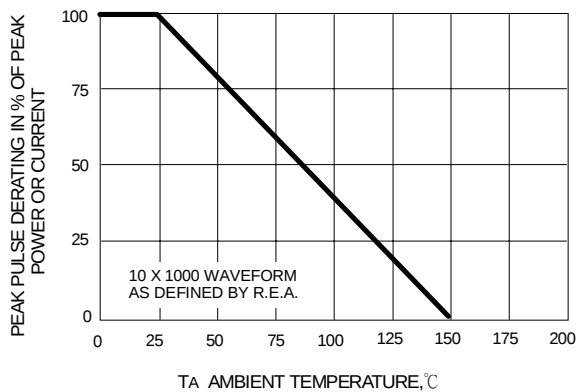


FIG.2 - TYPICAL JUNCTION CAPACITANCE

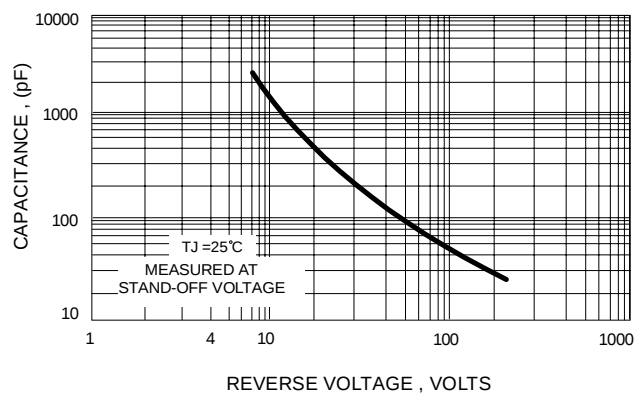


FIG.3 - PULSE RATING CURVE

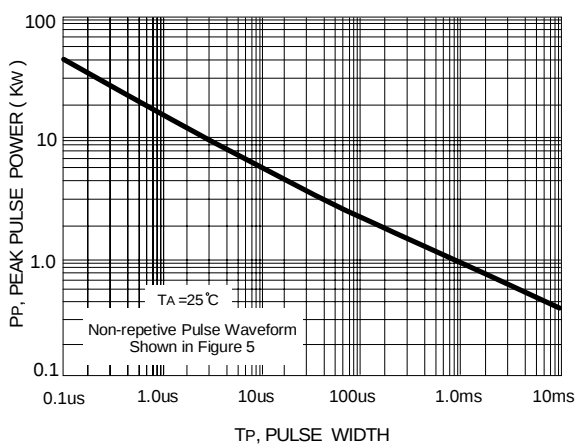


FIG.4 - STEADY STATE POWER DERATING CURVE

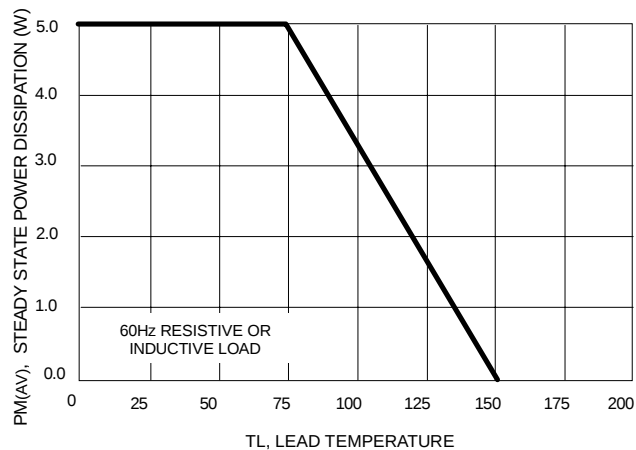
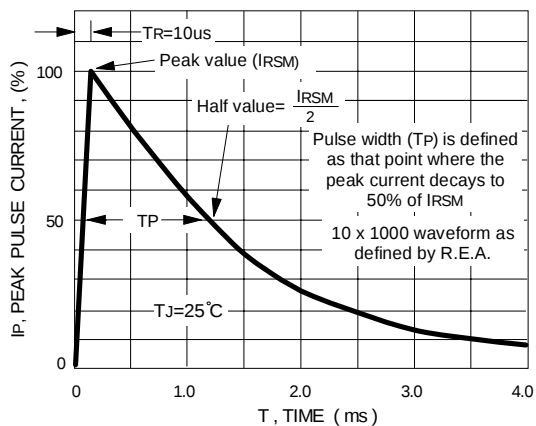


FIG.5 - PULSE WAVEFORM



| 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 |
|-------------|-------------|--------------------------|--------------------------------|---------|---------|--------------------------|----------------------------|-------------------------|------------------------------------|
| (UNI)       | (BI)        | VR (V)                   | Min (V)                        | Max (V) | It (mA) | IR (uA)                  | Vc (V)                     | Ipp (A)                 | %/°C                               |
| P6KE6.8     | P6KE6.8C    | 5.50                     | 6.12                           | 7.48    | 10      | 1000                     | 10.8                       | 56                      | 0.057                              |
| P6KE6.8A    | P6KE6.8CA   | 5.80                     | 6.45                           | 7.14    | 10      | 1000                     | 10.5                       | 57                      | 0.057                              |
| P6KE7.5     | P6KE7.5C    | 6.05                     | 6.75                           | 8.25    | 10      | 500                      | 11.7                       | 51                      | 0.061                              |
| P6KE7.5A    | P6KE7.5CA   | 6.40                     | 7.13                           | 7.88    | 10      | 500                      | 11.3                       | 53                      | 0.061                              |
| P6KE8.2     | P6KE8.2C    | 6.63                     | 7.38                           | 9.02    | 10      | 200                      | 12.5                       | 48                      | 0.065                              |
| P6KE8.2A    | P6KE8.2CA   | 7.02                     | 7.79                           | 8.61    | 10      | 200                      | 12.1                       | 50                      | 0.065                              |
| P6KE9.1     | P6KE9.1C    | 7.37                     | 8.19                           | 10.00   | 1       | 50                       | 13.8                       | 44                      | 0.068                              |
| P6KE9.1A    | P6KE9.1CA   | 7.78                     | 8.65                           | 9.55    | 1       | 50                       | 13.4                       | 45                      | 0.068                              |
| P6KE10      | P6KE10C     | 8.10                     | 9.00                           | 11.00   | 1       | 10                       | 15.0                       | 40                      | 0.073                              |
| P6KE10A     | P6KE10CA    | 8.55                     | 9.50                           | 10.50   | 1       | 10                       | 14.5                       | 41                      | 0.073                              |
| P6KE11      | P6KE11C     | 8.92                     | 9.90                           | 12.10   | 1       | 5                        | 16.2                       | 37                      | 0.075                              |
| P6KE11A     | P6KE11CA    | 9.40                     | 10.50                          | 11.60   | 1       | 5                        | 15.6                       | 38                      | 0.075                              |
| P6KE12      | P6KE12C     | 9.72                     | 10.80                          | 13.20   | 1       | 5                        | 17.3                       | 35                      | 0.078                              |
| P6KE12A     | P6KE12CA    | 10.20                    | 11.40                          | 12.60   | 1       | 5                        | 16.7                       | 36                      | 0.078                              |
| P6KE13      | P6KE13C     | 10.5                     | 11.7                           | 14.3    | 1       | 5                        | 19.0                       | 32                      | 0.081                              |
| P6KE13A     | P6KE13CA    | 11.1                     | 12.4                           | 13.7    | 1       | 5                        | 18.2                       | 33                      | 0.081                              |
| P6KE15      | P6KE15C     | 12.1                     | 13.5                           | 16.5    | 1       | 5                        | 22.0                       | 27                      | 0.084                              |
| P6KE15A     | P6KE15CA    | 12.8                     | 14.3                           | 15.8    | 1       | 5                        | 21.2                       | 28                      | 0.084                              |
| P6KE16      | P6KE16C     | 12.9                     | 14.4                           | 17.6    | 1       | 5                        | 23.5                       | 26                      | 0.086                              |
| P6KE16A     | P6KE16CA    | 13.6                     | 15.2                           | 16.8    | 1       | 5                        | 22.5                       | 27                      | 0.086                              |
| P6KE18      | P6KE18C     | 14.5                     | 16.2                           | 19.8    | 1       | 5                        | 26.5                       | 23                      | 0.088                              |
| P6KE18A     | P6KE18CA    | 15.3                     | 17.1                           | 18.9    | 1       | 5                        | 25.2                       | 24                      | 0.088                              |
| P6KE20      | P6KE20C     | 16.2                     | 18.0                           | 22.0    | 1       | 5                        | 29.1                       | 21                      | 0.090                              |
| P6KE20A     | P6KE20CA    | 17.1                     | 19.0                           | 21.0    | 1       | 5                        | 27.7                       | 22                      | 0.090                              |
| P6KE22      | P6KE22C     | 17.8                     | 19.8                           | 24.2    | 1       | 5                        | 31.9                       | 19                      | 0.092                              |
| P6KE22A     | P6KE22CA    | 18.8                     | 20.9                           | 23.1    | 1       | 5                        | 30.6                       | 20                      | 0.092                              |
| P6KE24      | P6KE24C     | 19.4                     | 21.6                           | 26.4    | 1       | 5                        | 34.7                       | 17                      | 0.094                              |
| P6KE24A     | P6KE24CA    | 20.5                     | 22.8                           | 25.2    | 1       | 5                        | 33.2                       | 18                      | 0.094                              |
| P6KE27      | P6KE27C     | 21.8                     | 24.3                           | 29.7    | 1       | 5                        | 39.1                       | 15                      | 0.096                              |
| P6KE27A     | P6KE27CA    | 23.1                     | 25.7                           | 28.4    | 1       | 5                        | 37.5                       | 16                      | 0.096                              |
| P6KE30      | P6KE30C     | 24.3                     | 27.0                           | 33.0    | 1       | 5                        | 43.5                       | 14                      | 0.097                              |
| P6KE30A     | P6KE30CA    | 25.6                     | 28.5                           | 31.5    | 1       | 5                        | 41.4                       | 14.4                    | 0.097                              |
| P6KE33      | P6KE33C     | 26.8                     | 29.7                           | 36.3    | 1       | 5                        | 47.7                       | 12.6                    | 0.098                              |
| P6KE33A     | P6KE33CA    | 28.2                     | 31.4                           | 34.7    | 1       | 5                        | 45.7                       | 13.2                    | 0.098                              |
| P6KE36      | P6KE36C     | 29.1                     | 32.4                           | 39.6    | 1       | 5                        | 52.0                       | 11.6                    | 0.099                              |
| P6KE36A     | P6KE36CA    | 30.8                     | 34.2                           | 37.8    | 1       | 5                        | 49.9                       | 12                      | 0.099                              |
| P6KE39      | P6KE39C     | 31.6                     | 35.1                           | 42.9    | 1       | 5                        | 56.4                       | 10.5                    | 0.100                              |
| P6KE39A     | P6KE39CA    | 33.3                     | 37.1                           | 41.0    | 1       | 5                        | 53.9                       | 11.2                    | 0.100                              |
| P6KE43      | P6KE43C     | 34.8                     | 38.7                           | 47.3    | 1       | 5                        | 61.9                       | 9.6                     | 0.101                              |
| P6KE43A     | P6KE43CA    | 36.8                     | 40.9                           | 45.2    | 1       | 5                        | 59.3                       | 10.1                    | 0.101                              |
| P6KE47      | P6KE47C     | 38.1                     | 42.3                           | 51.7    | 1       | 5                        | 67.8                       | 8.9                     | 0.101                              |
| P6KE47A     | P6KE47CA    | 40.2                     | 44.7                           | 49.4    | 1       | 5                        | 64.8                       | 9.3                     | 0.101                              |
| P6KE51      | P6KE51C     | 41.3                     | 45.9                           | 56.1    | 1       | 5                        | 73.5                       | 8.2                     | 0.102                              |
| P6KE51A     | P6KE51CA    | 43.6                     | 48.5                           | 53.6    | 1       | 5                        | 70.1                       | 8.6                     | 0.102                              |
| P6KE56      | P6KE56C     | 45.4                     | 50.4                           | 61.6    | 1       | 5                        | 80.5                       | 7.4                     | 0.103                              |
| P6KE56A     | P6KE56CA    | 47.8                     | 53.2                           | 58.8    | 1       | 5                        | 77.0                       | 7.8                     | 0.103                              |

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|-------------|-------------|--------------------------|--------------------------------|--------|--------|--------------------------|----------------------------|-------------------------|------------------------------------|
| (UNI)       | (BI)        | VR(V)                    | Min(V)                         | Max(V) | It(mA) | IR(uA)                   | Vc(V)                      | Ipp(A)                  | %/°C                               |
| P6KE62      | P6KE62C     | 50.2                     | 55.8                           | 68.2   | 1      | 5                        | 89.0                       | 6.8                     | 0.104                              |
| P6KE62A     | P6KE62CA    | 53.0                     | 58.9                           | 65.1   | 1      | 5                        | 85.0                       | 7.1                     | 0.104                              |
| P6KE68      | P6KE68C     | 55.1                     | 61.2                           | 74.8   | 1      | 5                        | 98.0                       | 6.1                     | 0.104                              |
| P6KE68A     | P6KE68CA    | 58.1                     | 64.6                           | 71.4   | 1      | 5                        | 92.0                       | 6.5                     | 0.104                              |
| P6KE75      | P6KE75C     | 60.7                     | 67.5                           | 82.5   | 1      | 5                        | 108.0                      | 5.5                     | 0.105                              |
| P6KE75A     | P6KE75CA    | 64.7                     | 71.3                           | 78.8   | 1      | 5                        | 103.0                      | 5.8                     | 0.105                              |
| P6KE82      | P6KE82C     | 66.4                     | 73.8                           | 90.2   | 1      | 5                        | 118.0                      | 5.1                     | 0.105                              |
| P6KE82A     | P6KE82CA    | 70.1                     | 77.9                           | 86.1   | 1      | 5                        | 113.0                      | 5.3                     | 0.105                              |
| P6KE91      | P6KE91C     | 73.7                     | 81.9                           | 100.0  | 1      | 5                        | 131.0                      | 4.5                     | 0.106                              |
| P6KE91A     | P6KE91CA    | 77.8                     | 86.5                           | 95.5   | 1      | 5                        | 125.0                      | 4.8                     | 0.106                              |
| P6KE100     | P6KE100C    | 81.0                     | 90.0                           | 110.0  | 1      | 5                        | 144.0                      | 4.2                     | 0.106                              |
| P6KE100A    | P6KE100CA   | 85.5                     | 95.0                           | 105.0  | 1      | 5                        | 137.0                      | 4.4                     | 0.106                              |
| P6KE110     | P6KE110C    | 89.2                     | 99.0                           | 121.0  | 1      | 5                        | 158.0                      | 3.8                     | 0.107                              |
| P6KE110A    | P6KE110CA   | 94.0                     | 105.0                          | 116.0  | 1      | 5                        | 152.0                      | 4.0                     | 0.107                              |
| P6KE120     | P6KE120C    | 97.2                     | 108.0                          | 132.0  | 1      | 5                        | 173.0                      | 3.5                     | 0.107                              |
| P6KE120A    | P6KE120CA   | 102.0                    | 114.0                          | 126.0  | 1      | 5                        | 165.0                      | 3.6                     | 0.107                              |
| P6KE130     | P6KE130C    | 105.0                    | 117.0                          | 143.0  | 1      | 5                        | 187.0                      | 3.2                     | 0.107                              |
| P6KE130A    | P6KE130CA   | 111.0                    | 124.0                          | 137.0  | 1      | 5                        | 179.0                      | 3.3                     | 0.107                              |
| P6KE150     | P6KE150C    | 121.0                    | 135.0                          | 165.0  | 1      | 5                        | 215.0                      | 2.8                     | 0.108                              |
| P6KE150A    | P6KE150CA   | 128.0                    | 143.0                          | 158.0  | 1      | 5                        | 207.0                      | 2.9                     | 0.108                              |
| P6KE160     | P6KE160C    | 130.0                    | 144.0                          | 176.0  | 1      | 5                        | 230.0                      | 2.6                     | 0.108                              |
| P6KE160A    | P6KE160CA   | 136.0                    | 152.0                          | 168.0  | 1      | 5                        | 219.0                      | 2.7                     | 0.108                              |
| P6KE170     | P6KE170C    | 138.0                    | 153.0                          | 187.0  | 1      | 5                        | 244.0                      | 2.5                     | 0.108                              |
| P6KE170A    | P6KE170CA   | 145.0                    | 162.0                          | 179.0  | 1      | 5                        | 234.0                      | 2.6                     | 0.108                              |
| P6KE180     | P6KE180C    | 146.0                    | 162.0                          | 198.0  | 1      | 5                        | 258.0                      | 2.3                     | 0.108                              |
| P6KE180A    | P6KE180CA   | 154.0                    | 171.0                          | 189.0  | 1      | 5                        | 246.0                      | 2.4                     | 0.108                              |
| P6KE200     | P6KE200C    | 162.0                    | 180.0                          | 220.0  | 1      | 5                        | 287.0                      | 2.1                     | 0.108                              |
| P6KE200A    | P6KE200CA   | 171.0                    | 190.0                          | 210.0  | 1      | 5                        | 274.0                      | 2.2                     | 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                        | 344.0                      | 1.75                    | 0.110                              |
| P6KE300     | P6KE300C    | 243.0                    | 270.0                          | 330.0  | 1      | 5                        | 430.0                      | 1.4                     | 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                      | 1.2                     | 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                      | 1.1                     | 0.110                              |

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

1. For bidirectional devices having VR of 10 volts and under, the IR limit is doubled .
2. For unidirectional devices P6KE6.8 to P6KE200A, VFmax = 3.5V at IF=50A 300us square wave pulse.  
For unidirectional devices P6KE220 to P6KE400A, VFmax = 5.0V at IF=50A 300us square wave pulse.