

## ELECTRICAL CHARACTERISTICS ( Rating at 25 °C ambient temperature unless otherwise specified.)

| Type No. | Breakdown Voltage @ It<br>( Note 1 ) |      | Working Peak<br>Reverse<br>Voltage | Maximum<br>Reverse Leakage<br>@ VRWM | Maximum<br>Reverse<br>Current | Maximum<br>Clamping<br>Voltage @ IRSM | Maximum<br>Temperature<br>Co-efficient<br>of VBR |          |
|----------|--------------------------------------|------|------------------------------------|--------------------------------------|-------------------------------|---------------------------------------|--------------------------------------------------|----------|
|          | VBR (V)                              |      |                                    |                                      |                               |                                       |                                                  | It       |
|          | Min.                                 | Max. | (mA)                               | (V)                                  | (μA)                          | (A)                                   | (V)                                              | (% / °C) |
| P6KE6.8  | 6.12                                 | 7.48 | 10                                 | 5.50                                 | 1000                          | 55.5                                  | 10.8                                             | 0.057    |
| P6KE6.8A | 6.45                                 | 7.14 | 10                                 | 5.80                                 | 1000                          | 57.0                                  | 10.5                                             | 0.057    |
| P6KE7.5  | 6.75                                 | 8.25 | 10                                 | 6.05                                 | 500                           | 51.0                                  | 11.7                                             | 0.061    |
| P6KE7.5A | 7.13                                 | 7.88 | 10                                 | 6.40                                 | 500                           | 53.0                                  | 11.3                                             | 0.061    |
| P6KE8.2  | 7.38                                 | 9.02 | 10                                 | 6.63                                 | 200                           | 48.0                                  | 12.5                                             | 0.065    |
| P6KE8.2A | 7.79                                 | 8.61 | 10                                 | 7.02                                 | 200                           | 50.0                                  | 12.1                                             | 0.065    |
| P6KE8.5  | 7.65                                 | 9.35 | 10                                 | 6.89                                 | 200                           | 46.0                                  | 13.0                                             | 0.067    |
| P6KE8.5A | 8.08                                 | 8.93 | 10                                 | 7.27                                 | 200                           | 47.0                                  | 12.7                                             | 0.067    |
| P6KE9.1  | 8.19                                 | 10.0 | 1.0                                | 7.37                                 | 150                           | 44.0                                  | 13.8                                             | 0.068    |
| P6KE9.1A | 8.65                                 | 9.55 | 1.0                                | 7.78                                 | 150                           | 45.0                                  | 13.4                                             | 0.068    |
| P6KE10   | 9.00                                 | 11.0 | 1.0                                | 8.10                                 | 150                           | 40.0                                  | 15.0                                             | 0.073    |
| P6KE10A  | 9.50                                 | 10.5 | 1.0                                | 8.55                                 | 150                           | 41.0                                  | 14.5                                             | 0.073    |
| P6KE11   | 9.90                                 | 12.1 | 1.0                                | 8.92                                 | 150                           | 37.0                                  | 16.2                                             | 0.075    |
| P6KE11A  | 10.5                                 | 11.6 | 1.0                                | 9.40                                 | 150                           | 38.0                                  | 15.6                                             | 0.075    |
| P6KE12   | 10.8                                 | 13.2 | 1.0                                | 9.72                                 | 5.0                           | 35.0                                  | 17.3                                             | 0.078    |
| P6KE12A  | 11.4                                 | 12.6 | 1.0                                | 10.2                                 | 5.0                           | 36.0                                  | 16.7                                             | 0.078    |
| P6KE13   | 11.7                                 | 14.3 | 1.0                                | 10.5                                 | 5.0                           | 32.0                                  | 19.0                                             | 0.081    |
| P6KE13A  | 12.4                                 | 13.7 | 1.0                                | 11.1                                 | 5.0                           | 33.0                                  | 18.2                                             | 0.081    |
| P6KE15   | 13.5                                 | 16.5 | 1.0                                | 12.1                                 | 5.0                           | 27.0                                  | 22.0                                             | 0.084    |
| P6KE15A  | 14.3                                 | 15.8 | 1.0                                | 12.8                                 | 5.0                           | 28.0                                  | 21.2                                             | 0.084    |
| P6KE16   | 14.4                                 | 17.6 | 1.0                                | 12.9                                 | 5.0                           | 26.0                                  | 23.5                                             | 0.086    |
| P6KE16A  | 15.2                                 | 16.8 | 1.0                                | 13.6                                 | 5.0                           | 27.0                                  | 22.5                                             | 0.086    |
| P6KE18   | 16.2                                 | 19.8 | 1.0                                | 14.5                                 | 5.0                           | 23.0                                  | 26.5                                             | 0.088    |
| P6KE18A  | 17.1                                 | 18.9 | 1.0                                | 15.3                                 | 5.0                           | 24.0                                  | 25.2                                             | 0.088    |
| P6KE20   | 18.0                                 | 22.0 | 1.0                                | 16.2                                 | 5.0                           | 21.0                                  | 29.1                                             | 0.090    |
| P6KE20A  | 19.0                                 | 21.0 | 1.0                                | 17.1                                 | 5.0                           | 22.0                                  | 27.7                                             | 0.090    |
| P6KE22   | 19.8                                 | 24.2 | 1.0                                | 17.8                                 | 5.0                           | 19.0                                  | 31.9                                             | 0.092    |
| P6KE22A  | 20.9                                 | 23.1 | 1.0                                | 18.8                                 | 5.0                           | 20.0                                  | 30.6                                             | 0.092    |
| P6KE24   | 21.6                                 | 26.4 | 1.0                                | 19.4                                 | 5.0                           | 17.0                                  | 34.7                                             | 0.094    |
| P6KE24A  | 22.8                                 | 25.2 | 1.0                                | 20.5                                 | 5.0                           | 18.0                                  | 33.2                                             | 0.094    |
| P6KE27   | 24.3                                 | 29.7 | 1.0                                | 21.8                                 | 5.0                           | 15.0                                  | 39.1                                             | 0.096    |
| P6KE27A  | 25.7                                 | 28.4 | 1.0                                | 23.1                                 | 5.0                           | 16.0                                  | 37.5                                             | 0.096    |
| P6KE28   | 25.2                                 | 30.8 | 1.0                                | 22.7                                 | 5.0                           | 15.0                                  | 40                                               | 0.096    |
| P6KE28A  | 26.6                                 | 29.4 | 1.0                                | 23.9                                 | 5.0                           | 15.5                                  | 38.7                                             | 0.096    |
| P6KE30   | 27.0                                 | 33.0 | 1.0                                | 24.3                                 | 5.0                           | 14.0                                  | 43.5                                             | 0.097    |
| P6KE30A  | 28.5                                 | 31.5 | 1.0                                | 25.6                                 | 5.0                           | 14.4                                  | 41.4                                             | 0.097    |
| P6KE33   | 29.7                                 | 36.3 | 1.0                                | 26.8                                 | 5.0                           | 12.6                                  | 47.7                                             | 0.098    |
| P6KE33A  | 31.4                                 | 34.7 | 1.0                                | 28.2                                 | 5.0                           | 13.2                                  | 45.7                                             | 0.098    |
| P6KE36   | 32.4                                 | 39.6 | 1.0                                | 29.1                                 | 5.0                           | 11.6                                  | 52.0                                             | 0.099    |
| P6KE36A  | 34.2                                 | 37.8 | 1.0                                | 30.8                                 | 5.0                           | 12.0                                  | 49.9                                             | 0.099    |
| P6KE39   | 35.1                                 | 42.9 | 1.0                                | 31.6                                 | 5.0                           | 10.6                                  | 56.4                                             | 0.100    |
| P6KE39A  | 37.1                                 | 41.0 | 1.0                                | 33.3                                 | 5.0                           | 11.2                                  | 53.9                                             | 0.100    |
| P6KE43   | 38.7                                 | 47.3 | 1.0                                | 34.8                                 | 5.0                           | 9.6                                   | 61.9                                             | 0.101    |
| P6KE43A  | 40.9                                 | 45.2 | 1.0                                | 36.8                                 | 5.0                           | 10.1                                  | 59.3                                             | 0.101    |
| P6KE47   | 42.3                                 | 51.7 | 1.0                                | 38.1                                 | 5.0                           | 8.9                                   | 67.8                                             | 0.101    |
| P6KE47A  | 44.7                                 | 49.4 | 1.0                                | 40.2                                 | 5.0                           | 9.3                                   | 64.8                                             | 0.101    |
| P6KE51   | 45.9                                 | 56.1 | 1.0                                | 41.3                                 | 5.0                           | 8.2                                   | 73.5                                             | 0.102    |
| P6KE51A  | 48.5                                 | 53.6 | 1.0                                | 43.6                                 | 5.0                           | 8.6                                   | 70.1                                             | 0.102    |
| P6KE56   | 50.4                                 | 61.6 | 1.0                                | 45.4                                 | 5.0                           | 7.4                                   | 80.5                                             | 0.103    |
| P6KE56A  | 53.2                                 | 58.8 | 1.0                                | 47.8                                 | 5.0                           | 7.8                                   | 77.0                                             | 0.103    |
| P6KE62   | 55.8                                 | 68.2 | 1.0                                | 50.2                                 | 5.0                           | 6.8                                   | 89.0                                             | 0.104    |
| P6KE62A  | 58.9                                 | 65.1 | 1.0                                | 53.0                                 | 5.0                           | 7.1                                   | 85.0                                             | 0.104    |
| P6KE68   | 61.2                                 | 74.8 | 1.0                                | 55.1                                 | 5.0                           | 6.1                                   | 98.0                                             | 0.104    |
| P6KE68A  | 64.6                                 | 71.4 | 1.0                                | 58.1                                 | 5.0                           | 6.5                                   | 92.0                                             | 0.104    |

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| Type No. | Breakdown Voltage @ It<br>( Note 1 ) |       | Working Peak<br>Reverse<br>Voltage | Maximum<br>Reverse Leakage<br>@ VRWM | Maximum<br>Reverse<br>Current | Maximum<br>Clamping<br>Voltage @ IRSM | Maximum<br>Temperature<br>Co-efficient<br>of VBR |          |
|----------|--------------------------------------|-------|------------------------------------|--------------------------------------|-------------------------------|---------------------------------------|--------------------------------------------------|----------|
|          | VBR (V)                              |       |                                    |                                      |                               |                                       |                                                  | It       |
|          | Min.                                 | Max.  | (mA)                               | (V)                                  | (μA)                          | (A)                                   | (V)                                              | (% / °C) |
| P6KE75   | 67.5                                 | 82.5  | 1.0                                | 60.7                                 | 5.0                           | 5.5                                   | 108                                              | 0.105    |
| P6KE75A  | 71.3                                 | 78.8  | 1.0                                | 64.1                                 | 5.0                           | 5.8                                   | 103                                              | 0.105    |
| P6KE82   | 73.8                                 | 90.2  | 1.0                                | 66.4                                 | 5.0                           | 5.1                                   | 118                                              | 0.105    |
| P6KE82A  | 77.9                                 | 86.1  | 1.0                                | 70.1                                 | 5.0                           | 5.3                                   | 113                                              | 0.105    |
| P6KE91   | 81.9                                 | 100.0 | 1.0                                | 73.7                                 | 5.0                           | 4.5                                   | 131                                              | 0.106    |
| P6KE91A  | 86.5                                 | 95.5  | 1.0                                | 77.8                                 | 5.0                           | 4.8                                   | 125                                              | 0.106    |
| P6KE100  | 90.0                                 | 110.0 | 1.0                                | 81.0                                 | 5.0                           | 4.2                                   | 144                                              | 0.106    |
| P6KE100A | 95.0                                 | 105.0 | 1.0                                | 85.5                                 | 5.0                           | 4.4                                   | 137                                              | 0.106    |
| P6KE110  | 99.0                                 | 121.0 | 1.0                                | 89.2                                 | 5.0                           | 3.8                                   | 158                                              | 0.107    |
| P6KE110A | 105.0                                | 116.0 | 1.0                                | 94.0                                 | 5.0                           | 4.0                                   | 152                                              | 0.107    |
| P6KE120  | 108.0                                | 132.0 | 1.0                                | 97.2                                 | 5.0                           | 3.5                                   | 173                                              | 0.107    |
| P6KE120A | 114.0                                | 126.0 | 1.0                                | 102                                  | 5.0                           | 3.6                                   | 165                                              | 0.107    |
| P6KE130  | 117.0                                | 143.0 | 1.0                                | 106                                  | 5.0                           | 3.2                                   | 187                                              | 0.107    |
| P6KE130A | 124.0                                | 137.0 | 1.0                                | 111                                  | 5.0                           | 3.3                                   | 179                                              | 0.107    |
| P6KE150  | 135.0                                | 165.0 | 1.0                                | 121                                  | 5.0                           | 2.8                                   | 215                                              | 0.108    |
| P6KE150A | 143.0                                | 158.0 | 1.0                                | 128                                  | 5.0                           | 2.9                                   | 207                                              | 0.108    |
| P6KE160  | 144.0                                | 176.0 | 1.0                                | 130                                  | 5.0                           | 2.6                                   | 230                                              | 0.108    |
| P6KE160A | 152.0                                | 168.0 | 1.0                                | 136                                  | 5.0                           | 2.7                                   | 219                                              | 0.108    |
| P6KE170  | 153.0                                | 187.0 | 1.0                                | 138                                  | 5.0                           | 2.5                                   | 244                                              | 0.108    |
| P6KE170A | 162.0                                | 179.0 | 1.0                                | 145                                  | 5.0                           | 2.6                                   | 234                                              | 0.108    |
| P6KE180  | 162.0                                | 198.0 | 1.0                                | 146                                  | 5.0                           | 2.3                                   | 258                                              | 0.108    |
| P6KE180A | 171.0                                | 189.0 | 1.0                                | 154                                  | 5.0                           | 2.4                                   | 246                                              | 0.108    |
| P6KE200  | 180.0                                | 220.0 | 1.0                                | 162                                  | 5.0                           | 2.1                                   | 287                                              | 0.108    |
| P6KE200A | 190.0                                | 210.0 | 1.0                                | 171                                  | 5.0                           | 2.2                                   | 274                                              | 0.108    |
| P6KE220  | 198.0                                | 242.0 | 1.0                                | 175                                  | 5.0                           | 1.75                                  | 344                                              | 0.108    |
| P6KE220A | 209.0                                | 231.0 | 1.0                                | 185                                  | 5.0                           | 1.83                                  | 328                                              | 0.108    |
| P6KE250  | 225.0                                | 275.0 | 1.0                                | 202                                  | 5.0                           | 1.67                                  | 360                                              | 0.110    |
| P6KE250A | 237.0                                | 263.0 | 1.0                                | 214                                  | 5.0                           | 1.75                                  | 344                                              | 0.110    |
| P6KE300  | 270.0                                | 330.0 | 1.0                                | 243                                  | 5.0                           | 1.40                                  | 430                                              | 0.110    |
| P6KE300A | 285.0                                | 315.0 | 1.0                                | 256                                  | 5.0                           | 1.45                                  | 414                                              | 0.110    |
| P6KE320  | 288.0                                | 352.0 | 1.0                                | 259                                  | 5.0                           | 1.31                                  | 460                                              | 0.110    |
| P6KE320A | 303.0                                | 337.0 | 1.0                                | 272                                  | 5.0                           | 1.35                                  | 445                                              | 0.110    |
| P6KE350  | 315.0                                | 385.0 | 1.0                                | 284                                  | 5.0                           | 1.20                                  | 504                                              | 0.110    |
| P6KE350A | 332.0                                | 368.0 | 1.0                                | 300                                  | 5.0                           | 1.25                                  | 482                                              | 0.110    |
| P6KE400  | 360.0                                | 440.0 | 1.0                                | 324                                  | 5.0                           | 1.05                                  | 574                                              | 0.110    |
| P6KE400A | 380.0                                | 420.0 | 1.0                                | 342                                  | 5.0                           | 1.10                                  | 548                                              | 0.110    |
| P6KE440  | 396.0                                | 484.0 | 1.0                                | 356                                  | 5.0                           | 0.95                                  | 631                                              | 0.110    |
| P6KE440A | 418.0                                | 462.0 | 1.0                                | 376                                  | 5.0                           | 1.00                                  | 602                                              | 0.110    |
| P6KE480  | 432.0                                | 528.0 | 1.0                                | 389                                  | 5.0                           | 0.88                                  | 686                                              | 0.110    |
| P6KE480A | 456.0                                | 504.0 | 1.0                                | 408                                  | 5.0                           | 0.90                                  | 658                                              | 0.110    |
| P6KE510  | 459.0                                | 561.0 | 1.0                                | 413                                  | 5.0                           | 0.82                                  | 729                                              | 0.110    |
| P6KE510A | 485.0                                | 535.0 | 1.0                                | 434                                  | 5.0                           | 0.86                                  | 698                                              | 0.110    |
| P6KE530  | 477.0                                | 583.0 | 1.0                                | 457                                  | 5.0                           | 0.76                                  | 798                                              | 0.110    |
| P6KE530A | 503.5                                | 556.5 | 1.0                                | 477                                  | 5.0                           | 0.80                                  | 725                                              | 0.110    |
| P6KE540  | 486.0                                | 594.0 | 1.0                                | 437                                  | 5.0                           | 0.78                                  | 772                                              | 0.110    |
| P6KE540A | 513.0                                | 567.0 | 1.0                                | 459                                  | 5.0                           | 0.81                                  | 740                                              | 0.110    |
| P6KE550  | 495.0                                | 605.0 | 1.0                                | 470                                  | 5.0                           | 0.76                                  | 836                                              | 0.110    |
| P6KE550A | 522.5                                | 577.5 | 1.0                                | 495                                  | 5.0                           | 0.80                                  | 760                                              | 0.110    |
| P6KE600  | 540.0                                | 660.0 | 1.0                                | 490                                  | 5.0                           | 0.71                                  | 911                                              | 0.110    |
| P6KE600A | 570.0                                | 630.0 | 1.0                                | 512                                  | 5.0                           | 0.75                                  | 828                                              | 0.110    |

Notes : ( 1 ) VBR measured after It applied for 300  $\mu$ s., It = square wave pulse or equivalent.

( 2 ) VF = 3.5 Vmax., IF = 50 Amps. ( 6.8 Volts thru 91 Volts ); VF = 5.0 Vmax., IF = 50 Amps. ( 100 Volts thru 440 Volts )  
add VF = 6.5 Vmax. IF = 50 Amps ( 480 Volts thru 600 Volts). PW = 8.3 ms, duty cycle = 4 pulses per minute maximum.

( 3 ) For Bipolar types moving VR of 10 Volts and under, the IR limit is doubled.

( 4 ) "6KE" will be omitted in marking on the diode.

## RATING AND CHARACTERISTIC CURVES ( P6KE SERIES )

FIG.1 - PULSE DERATING CURVE

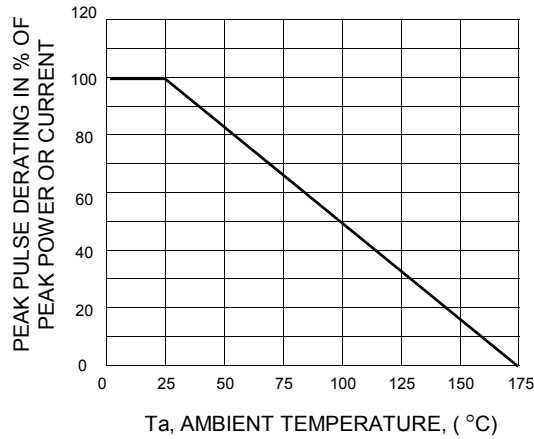


FIG.2 - MAXIMUM NON-REPETITIVE SURGE CURRENT (Unidirectional only)

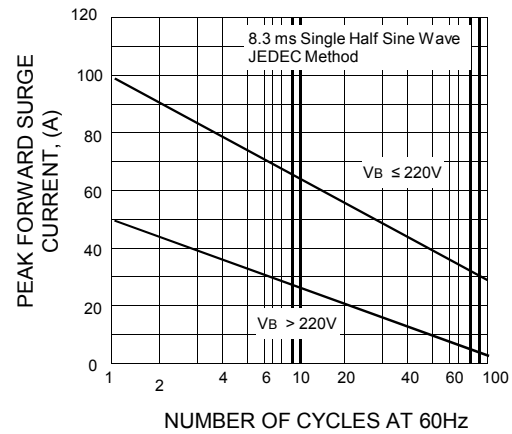


FIG.3 - STEADY STATE POWER DERATING

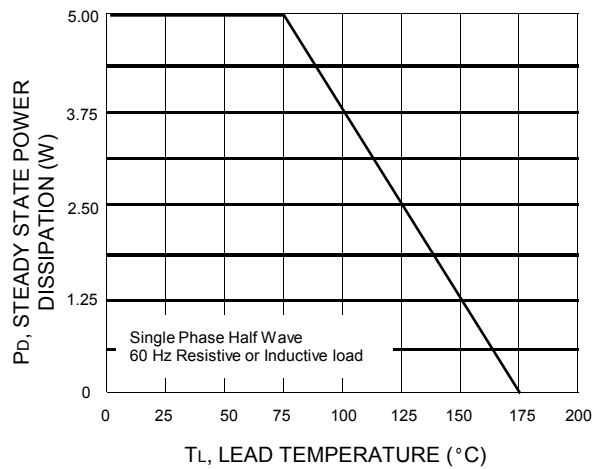


FIG.4 - PULSE RATING CURVE

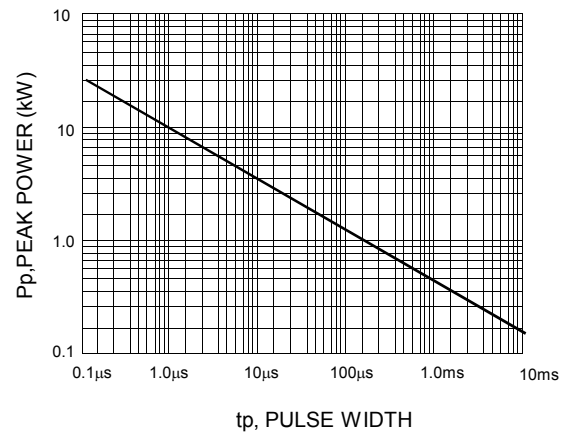


FIG.5 - PULSE WAVEFORM

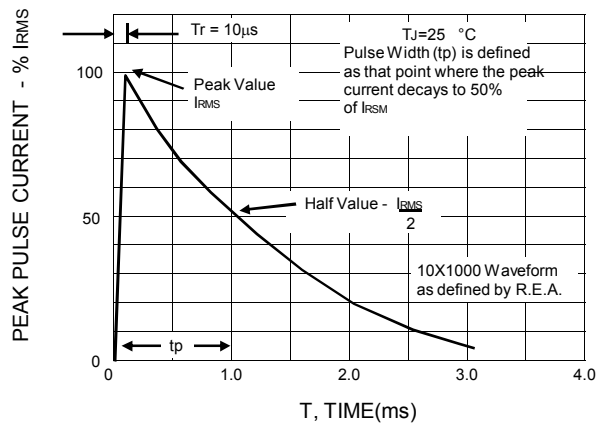


FIG. 6 - TYPICAL JUNCTION CAPACITANCE UNI-DIRECTIONAL

