

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

| Type Number | Breakdown Voltage @ It<br>( Note 1 ) |      |      | Working Peak<br>Reverse<br>Voltage<br>V <sub>RWM</sub><br>(V) | Maximum<br>Reverse Leakage<br>@ V <sub>RWM</sub><br>I <sub>R</sub><br>(μA) | Maximum<br>Reverse<br>Current<br>I <sub>RSM</sub><br>(A) | Maximum<br>Clamping<br>Voltage @ I <sub>RSM</sub><br>V <sub>RSM</sub><br>(V) | Maximum<br>Temperature<br>Co-efficient<br>of V <sub>BR</sub><br>(% / °C) |
|-------------|--------------------------------------|------|------|---------------------------------------------------------------|----------------------------------------------------------------------------|----------------------------------------------------------|------------------------------------------------------------------------------|--------------------------------------------------------------------------|
|             | V <sub>BR</sub> (V)                  |      | It   |                                                               |                                                                            |                                                          |                                                                              |                                                                          |
|             | Min.                                 | Max. | (mA) |                                                               |                                                                            |                                                          |                                                                              |                                                                          |
| 1.5KE6.8    | 6.12                                 | 7.48 | 10   | 5.50                                                          | 1000                                                                       | 139                                                      | 10.8                                                                         | 0.057                                                                    |
| 1.5KE6.8A   | 6.45                                 | 7.14 | 10   | 5.80                                                          | 1000                                                                       | 143                                                      | 10.5                                                                         | 0.057                                                                    |
| 1.5KE7.5    | 6.75                                 | 8.25 | 10   | 6.05                                                          | 500                                                                        | 128                                                      | 11.7                                                                         | 0.061                                                                    |
| 1.5KE7.5A   | 7.13                                 | 7.88 | 10   | 6.40                                                          | 500                                                                        | 132                                                      | 11.3                                                                         | 0.061                                                                    |
| 1.5KE8.2    | 7.38                                 | 9.02 | 10   | 6.63                                                          | 200                                                                        | 120                                                      | 12.5                                                                         | 0.065                                                                    |
| 1.5KE8.2A   | 7.79                                 | 8.61 | 10   | 7.02                                                          | 200                                                                        | 124                                                      | 12.1                                                                         | 0.065                                                                    |
| 1.5KE9.1    | 8.19                                 | 10.0 | 1.0  | 7.37                                                          | 50                                                                         | 109                                                      | 13.8                                                                         | 0.068                                                                    |
| 1.5KE9.1A   | 8.65                                 | 9.55 | 1.0  | 7.78                                                          | 50                                                                         | 112                                                      | 13.4                                                                         | 0.068                                                                    |
| 1.5KE10     | 9.00                                 | 11.0 | 1.0  | 8.10                                                          | 10                                                                         | 100                                                      | 15.0                                                                         | 0.073                                                                    |
| 1.5KE10A    | 9.50                                 | 10.5 | 1.0  | 8.55                                                          | 10                                                                         | 103                                                      | 14.5                                                                         | 0.073                                                                    |
| 1.5KE11     | 9.90                                 | 12.1 | 1.0  | 8.92                                                          | 5.0                                                                        | 93.0                                                     | 16.2                                                                         | 0.075                                                                    |
| 1.5KE11A    | 10.5                                 | 11.6 | 1.0  | 9.40                                                          | 5.0                                                                        | 96.0                                                     | 15.6                                                                         | 0.075                                                                    |
| 1.5KE12     | 10.8                                 | 13.2 | 1.0  | 9.72                                                          | 5.0                                                                        | 87.0                                                     | 17.3                                                                         | 0.078                                                                    |
| 1.5KE12A    | 11.4                                 | 12.6 | 1.0  | 10.2                                                          | 5.0                                                                        | 90.0                                                     | 16.7                                                                         | 0.078                                                                    |
| 1.5KE13     | 11.7                                 | 14.3 | 1.0  | 10.5                                                          | 5.0                                                                        | 79.0                                                     | 19.0                                                                         | 0.081                                                                    |
| 1.5KE13A    | 12.4                                 | 13.7 | 1.0  | 11.1                                                          | 5.0                                                                        | 82.0                                                     | 18.2                                                                         | 0.081                                                                    |
| 1.5KE15     | 13.5                                 | 16.5 | 1.0  | 12.1                                                          | 1.0                                                                        | 68.0                                                     | 22.0                                                                         | 0.084                                                                    |
| 1.5KE15A    | 14.3                                 | 15.8 | 1.0  | 12.8                                                          | 1.0                                                                        | 71.0                                                     | 21.2                                                                         | 0.084                                                                    |
| 1.5KE16     | 14.4                                 | 17.6 | 1.0  | 12.9                                                          | 1.0                                                                        | 64.0                                                     | 23.5                                                                         | 0.086                                                                    |
| 1.5KE16A    | 15.2                                 | 16.8 | 1.0  | 13.6                                                          | 1.0                                                                        | 67.0                                                     | 22.5                                                                         | 0.086                                                                    |
| 1.5KE18     | 16.2                                 | 19.8 | 1.0  | 14.5                                                          | 1.0                                                                        | 56.5                                                     | 26.5                                                                         | 0.088                                                                    |
| 1.5KE18A    | 17.1                                 | 18.9 | 1.0  | 15.3                                                          | 1.0                                                                        | 59.5                                                     | 25.2                                                                         | 0.088                                                                    |
| 1.5KE20     | 18.0                                 | 22.0 | 1.0  | 16.2                                                          | 1.0                                                                        | 51.5                                                     | 29.1                                                                         | 0.090                                                                    |
| 1.5KE20A    | 19.0                                 | 21.0 | 1.0  | 17.1                                                          | 1.0                                                                        | 54.0                                                     | 27.7                                                                         | 0.090                                                                    |
| 1.5KE22     | 19.8                                 | 24.2 | 1.0  | 17.8                                                          | 1.0                                                                        | 47.0                                                     | 31.9                                                                         | 0.092                                                                    |
| 1.5KE22A    | 20.9                                 | 23.1 | 1.0  | 18.8                                                          | 1.0                                                                        | 49.0                                                     | 30.6                                                                         | 0.092                                                                    |
| 1.5KE24     | 21.6                                 | 26.4 | 1.0  | 19.4                                                          | 1.0                                                                        | 43.0                                                     | 34.7                                                                         | 0.094                                                                    |
| 1.5KE24A    | 22.8                                 | 25.2 | 1.0  | 20.5                                                          | 1.0                                                                        | 45.0                                                     | 33.2                                                                         | 0.094                                                                    |
| 1.5KE27     | 24.3                                 | 29.7 | 1.0  | 21.8                                                          | 1.0                                                                        | 38.5                                                     | 39.1                                                                         | 0.096                                                                    |
| 1.5KE27A    | 25.7                                 | 28.4 | 1.0  | 23.1                                                          | 1.0                                                                        | 40.0                                                     | 37.5                                                                         | 0.096                                                                    |
| 1.5KE30     | 27.0                                 | 33.0 | 1.0  | 24.3                                                          | 1.0                                                                        | 34.5                                                     | 43.5                                                                         | 0.097                                                                    |
| 1.5KE30A    | 28.5                                 | 31.5 | 1.0  | 25.6                                                          | 1.0                                                                        | 36.0                                                     | 41.4                                                                         | 0.097                                                                    |
| 1.5KE33     | 29.7                                 | 36.3 | 1.0  | 26.8                                                          | 1.0                                                                        | 31.5                                                     | 47.7                                                                         | 0.098                                                                    |
| 1.5KE33A    | 31.4                                 | 34.7 | 1.0  | 28.2                                                          | 1.0                                                                        | 33.0                                                     | 45.7                                                                         | 0.098                                                                    |
| 1.5KE36     | 32.4                                 | 39.6 | 1.0  | 29.1                                                          | 1.0                                                                        | 29.0                                                     | 52.0                                                                         | 0.099                                                                    |
| 1.5KE36A    | 34.2                                 | 37.8 | 1.0  | 30.8                                                          | 1.0                                                                        | 30.0                                                     | 49.9                                                                         | 0.099                                                                    |
| 1.5KE39     | 35.1                                 | 42.9 | 1.0  | 31.6                                                          | 1.0                                                                        | 26.5                                                     | 56.4                                                                         | 0.100                                                                    |
| 1.5KE39A    | 37.1                                 | 41.0 | 1.0  | 33.3                                                          | 1.0                                                                        | 28.0                                                     | 53.9                                                                         | 0.100                                                                    |
| 1.5KE43     | 38.7                                 | 47.3 | 1.0  | 34.8                                                          | 1.0                                                                        | 24.0                                                     | 61.9                                                                         | 0.101                                                                    |
| 1.5KE43A    | 40.9                                 | 45.2 | 1.0  | 36.8                                                          | 1.0                                                                        | 25.3                                                     | 59.3                                                                         | 0.101                                                                    |
| 1.5KE47     | 42.3                                 | 51.7 | 1.0  | 38.1                                                          | 1.0                                                                        | 22.2                                                     | 67.8                                                                         | 0.101                                                                    |
| 1.5KE47A    | 44.7                                 | 49.4 | 1.0  | 40.2                                                          | 1.0                                                                        | 23.2                                                     | 64.8                                                                         | 0.101                                                                    |
| 1.5KE51     | 45.9                                 | 56.1 | 1.0  | 41.3                                                          | 1.0                                                                        | 20.4                                                     | 73.5                                                                         | 0.102                                                                    |
| 1.5KE51A    | 48.5                                 | 53.6 | 1.0  | 43.6                                                          | 1.0                                                                        | 21.4                                                     | 70.1                                                                         | 0.102                                                                    |
| 1.5KE56     | 50.4                                 | 61.6 | 1.0  | 45.4                                                          | 1.0                                                                        | 18.6                                                     | 80.5                                                                         | 0.103                                                                    |
| 1.5KE56A    | 53.2                                 | 58.8 | 1.0  | 47.8                                                          | 1.0                                                                        | 19.5                                                     | 77.0                                                                         | 0.103                                                                    |

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

| Type Number | Breakdown Voltage @ It<br>( Note 1 ) |      |      | Working Peak<br>Reverse<br>Voltage | Maximum<br>Reverse Leakage<br>@ V <sub>RWM</sub> | Maximum<br>Reverse<br>Current | Maximum<br>Clamping<br>Voltage @ I <sub>RSM</sub> | Maximum<br>Temperature<br>Co-efficient<br>of V <sub>BR</sub> |
|-------------|--------------------------------------|------|------|------------------------------------|--------------------------------------------------|-------------------------------|---------------------------------------------------|--------------------------------------------------------------|
|             | V <sub>BR</sub> (V)                  |      | It   |                                    |                                                  |                               |                                                   |                                                              |
|             | Min.                                 | Max. | (mA) | (V)                                | (μA)                                             | (A)                           | (V)                                               | (% / °C)                                                     |
| 1.5KE62     | 55.8                                 | 68.2 | 1.0  | 50.2                               | 1.0                                              | 16.9                          | 89.0                                              | 0.104                                                        |
| 1.5KE62A    | 58.9                                 | 65.1 | 1.0  | 53.0                               | 1.0                                              | 17.7                          | 85.0                                              | 0.104                                                        |
| 1.5KE68     | 61.2                                 | 74.8 | 1.0  | 55.1                               | 1.0                                              | 15.3                          | 98.0                                              | 0.104                                                        |
| 1.5KE68A    | 64.6                                 | 71.4 | 1.0  | 58.1                               | 1.0                                              | 16.3                          | 92.0                                              | 0.104                                                        |
| 1.5KE75     | 67.5                                 | 82.5 | 1.0  | 60.7                               | 1.0                                              | 13.9                          | 108                                               | 0.105                                                        |
| 1.5KE75A    | 71.3                                 | 78.8 | 1.0  | 64.1                               | 1.0                                              | 14.6                          | 103                                               | 0.105                                                        |
| 1.5KE82     | 73.8                                 | 90.2 | 1.0  | 66.4                               | 1.0                                              | 12.7                          | 118                                               | 0.105                                                        |
| 1.5KE82A    | 77.9                                 | 86.1 | 1.0  | 70.1                               | 1.0                                              | 13.3                          | 113                                               | 0.105                                                        |
| 1.5KE91     | 81.9                                 | 100  | 1.0  | 73.7                               | 1.0                                              | 11.4                          | 131                                               | 0.106                                                        |
| 1.5KE91A    | 86.5                                 | 95.5 | 1.0  | 77.8                               | 1.0                                              | 12.0                          | 125                                               | 0.106                                                        |
| 1.5KE100    | 90.0                                 | 110  | 1.0  | 81.0                               | 1.0                                              | 10.4                          | 144                                               | 0.106                                                        |
| 1.5KE100A   | 95.0                                 | 105  | 1.0  | 85.5                               | 1.0                                              | 11.0                          | 137                                               | 0.106                                                        |
| 1.5KE110    | 99.0                                 | 121  | 1.0  | 89.2                               | 1.0                                              | 9.5                           | 158                                               | 0.107                                                        |
| 1.5KE110A   | 105                                  | 116  | 1.0  | 94.0                               | 1.0                                              | 9.9                           | 152                                               | 0.107                                                        |
| 1.5KE120    | 108                                  | 132  | 1.0  | 97.2                               | 1.0                                              | 8.7                           | 173                                               | 0.107                                                        |
| 1.5KE120A   | 114                                  | 126  | 1.0  | 102                                | 1.0                                              | 9.1                           | 165                                               | 0.107                                                        |
| 1.5KE130    | 117                                  | 143  | 1.0  | 105                                | 1.0                                              | 8.0                           | 187                                               | 0.107                                                        |
| 1.5KE130A   | 124                                  | 137  | 1.0  | 111                                | 1.0                                              | 8.4                           | 179                                               | 0.107                                                        |
| 1.5KE150    | 135                                  | 165  | 1.0  | 121                                | 1.0                                              | 7.0                           | 215                                               | 0.108                                                        |
| 1.5KE150A   | 143                                  | 158  | 1.0  | 128                                | 1.0                                              | 7.2                           | 207                                               | 0.108                                                        |
| 1.5KE160    | 144                                  | 176  | 1.0  | 130                                | 1.0                                              | 6.5                           | 230                                               | 0.108                                                        |
| 1.5KE160A   | 152                                  | 168  | 1.0  | 136                                | 1.0                                              | 6.8                           | 219                                               | 0.108                                                        |
| 1.5KE170    | 153                                  | 187  | 1.0  | 138                                | 1.0                                              | 6.2                           | 244                                               | 0.108                                                        |
| 1.5KE170A   | 162                                  | 179  | 1.0  | 145                                | 1.0                                              | 6.4                           | 234                                               | 0.108                                                        |
| 1.5KE180    | 162                                  | 198  | 1.0  | 146                                | 1.0                                              | 5.8                           | 258                                               | 0.108                                                        |
| 1.5KE180A   | 171                                  | 189  | 1.0  | 154                                | 1.0                                              | 6.1                           | 246                                               | 0.108                                                        |
| 1.5KE200    | 180                                  | 220  | 1.0  | 162                                | 1.0                                              | 5.2                           | 287                                               | 0.108                                                        |
| 1.5KE200A   | 190                                  | 210  | 1.0  | 171                                | 1.0                                              | 5.5                           | 274                                               | 0.108                                                        |
| 1.5KE220    | 198                                  | 242  | 1.0  | 175                                | 1.0                                              | 4.3                           | 344                                               | 0.108                                                        |
| 1.5KE220A   | 209                                  | 231  | 1.0  | 185                                | 1.0                                              | 4.6                           | 328                                               | 0.108                                                        |
| 1.5KE250    | 225                                  | 275  | 1.0  | 202                                | 1.0                                              | 4.2                           | 360                                               | 0.110                                                        |
| 1.5KE250A   | 237                                  | 263  | 1.0  | 214                                | 1.0                                              | 4.4                           | 344                                               | 0.110                                                        |
| 1.5KE300    | 270                                  | 330  | 1.0  | 243                                | 1.0                                              | 3.5                           | 430                                               | 0.110                                                        |
| 1.5KE300A   | 285                                  | 315  | 1.0  | 256                                | 1.0                                              | 3.6                           | 414                                               | 0.110                                                        |
| 1.5KE350    | 315                                  | 385  | 1.0  | 284                                | 1.0                                              | 3.0                           | 504                                               | 0.110                                                        |
| 1.5KE350A   | 332                                  | 368  | 1.0  | 300                                | 1.0                                              | 3.1                           | 482                                               | 0.110                                                        |
| 1.5KE400    | 360                                  | 440  | 1.0  | 324                                | 1.0                                              | 2.6                           | 574                                               | 0.110                                                        |
| 1.5KE400A   | 380                                  | 420  | 1.0  | 342                                | 1.0                                              | 2.7                           | 548                                               | 0.110                                                        |
| 1.5KE440    | 396                                  | 484  | 1.0  | 356                                | 1.0                                              | 2.4                           | 631                                               | 0.110                                                        |
| 1.5KE440A   | 418                                  | 462  | 1.0  | 376                                | 1.0                                              | 2.5                           | 602                                               | 0.110                                                        |

### Notes:

- (1)  $V_{BR}$  measured after  $I_t$  applied for 300  $\mu$ s.,  $I_t$  = square wave pulse or equivalent.
- (2)  $V_F = 3.5 V_{max.}$ ,  $I_F = 100$  Amps. ( 6.8 Volts thru 91 Volts )  
 $V_F = 5.0 V_{max.}$ ,  $I_F = 100$  Amps. ( 100 Volts thru 440 Volts ) per 1/2 square or equivalent sine wave.  
PW = 8.3 ms, duty cycle = 4 pulses per minute maximum.
- (3) "1.5" will be omitted in marking on the diode.

## RATING AND CHARACTERISTIC CURVES ( 1.5KE SERIES )

FIG.1 - PULSE DERATING CURVE

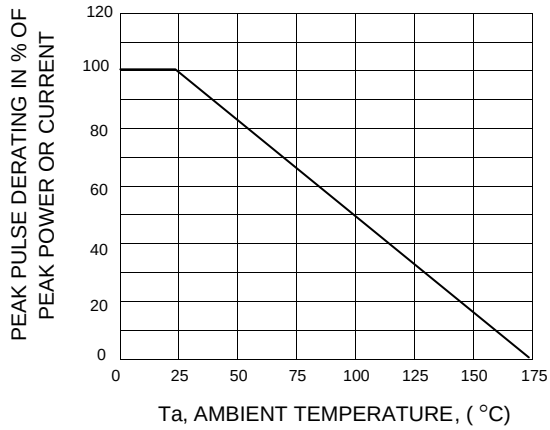


FIG.2 - MAXIMUM NON-REPETITIVE SURGE CURRENT

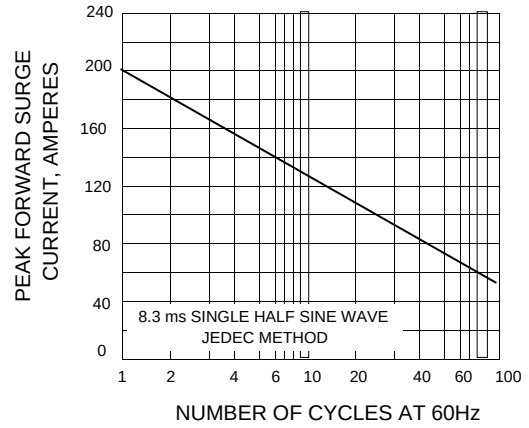


FIG.3 - STEADY STATE POWER DERATING

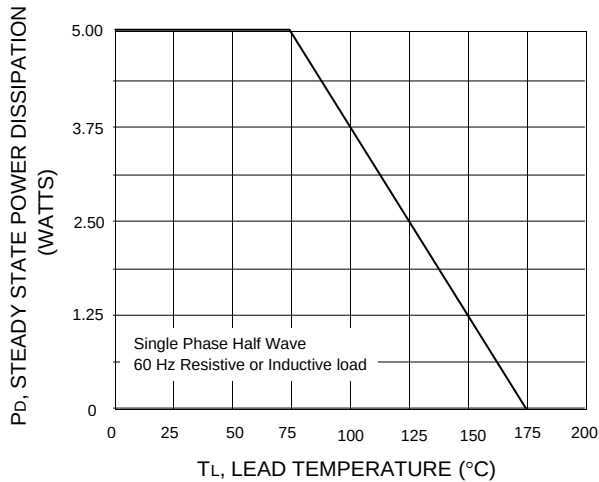


FIG.4 - PULSE RATING CURVE

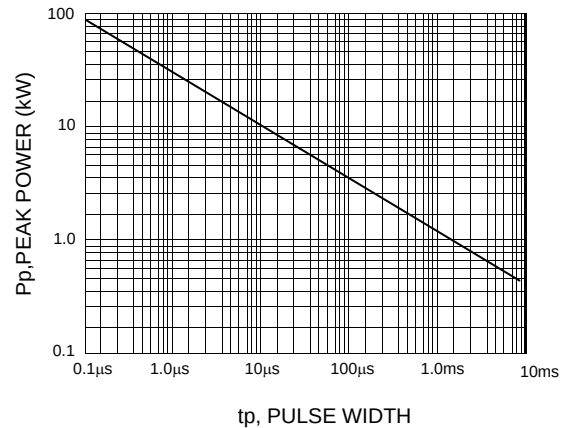


FIG.5 - PULSE WAVEFORM

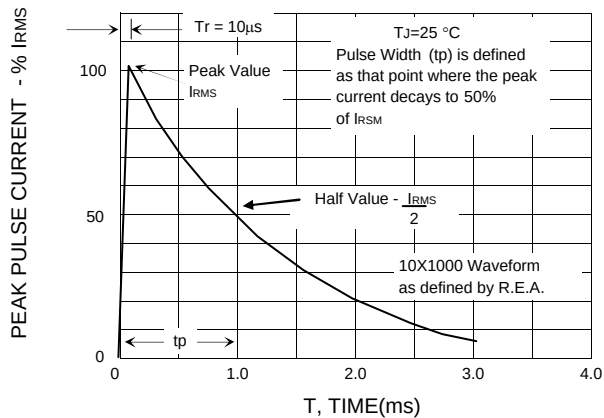


FIG. 6 - TYPICAL JUNCTION CAPACITANCE

