

**ELECTRICAL SPECIFICATIONS** ( $T_A = 25^\circ\text{C}$  unless otherwise noted)

| Part Number | Nominal Voltage (V) | Breakdown Voltage $V_{BR}$ (V) |       | Test Current $I_T$ (mA) | Stand-Off Voltage $V_{WM}$ (V) | Maximum Reverse Leakage $I_D @ V_{WM}$ ( $\mu\text{A}$ ) | Maximum Peak Surge Current $I_{PP}$ (A) | Maximum Clamping Voltage $V_C @ I_{PPM}$ (V) | Maximum Temperature Coefficient of $V_{BR}$ ( $\%/^\circ\text{C}$ ) |
|-------------|---------------------|--------------------------------|-------|-------------------------|--------------------------------|----------------------------------------------------------|-----------------------------------------|----------------------------------------------|---------------------------------------------------------------------|
|             |                     | Min                            | Max   |                         |                                |                                                          |                                         |                                              |                                                                     |
| P6KE6.8     | 6.8                 | 6.12                           | 7.48  | 10                      | 5.50                           | 1000                                                     | 58.0                                    | 10.8                                         | 0.057                                                               |
| P6KE6.8A    | 6.8                 | 6.46                           | 7.14  | 10                      | 5.80                           | 1000                                                     | 60.0                                    | 10.5                                         | 0.057                                                               |
| P6KE6V8A    |                     |                                |       |                         |                                |                                                          |                                         |                                              |                                                                     |
| P6KE7.5     | 7.5                 | 6.75                           | 8.25  | 10                      | 6.05                           | 500                                                      | 53.0                                    | 11.7                                         | 0.061                                                               |
| P6KE7.5A    | 7.5                 | 7.13                           | 7.88  | 10                      | 6.40                           | 500                                                      | 55.0                                    | 11.3                                         | 0.061                                                               |
| P6KE7V5A    |                     |                                |       |                         |                                |                                                          |                                         |                                              |                                                                     |
| P6KE8.2     | 8.2                 | 7.38                           | 9.02  | 10                      | 6.63                           | 200                                                      | 50.0                                    | 12.5                                         | 0.065                                                               |
| P6KE8.2A    | 8.2                 | 7.79                           | 8.61  | 10                      | 7.02                           | 200                                                      | 52.0                                    | 12.1                                         | 0.065                                                               |
| P6KE8V2A    |                     |                                |       |                         |                                |                                                          |                                         |                                              |                                                                     |
| P6KE9.1     | 9.1                 | 8.19                           | 10.00 | 1                       | 7.37                           | 50                                                       | 45.0                                    | 13.8                                         | 0.068                                                               |
| P6KE9.1A    | 9.1                 | 8.65                           | 9.55  | 1                       | 7.78                           | 50                                                       | 47.0                                    | 13.4                                         | 0.068                                                               |
| P6KE9V1A    |                     |                                |       |                         |                                |                                                          |                                         |                                              |                                                                     |
| P6KE10      | 10                  | 9.00                           | 11.00 | 1                       | 8.10                           | 10                                                       | 42.0                                    | 15.0                                         | 0.073                                                               |
| P6KE10A     | 10                  | 9.50                           | 10.5  | 1                       | 8.55                           | 10                                                       | 43.0                                    | 14.5                                         | 0.073                                                               |
| P6KE11      | 11                  | 9.90                           | 12.1  | 1                       | 8.92                           | 1                                                        | 38.0                                    | 16.2                                         | 0.075                                                               |
| P6KE11A     | 11                  | 10.5                           | 11.6  | 1                       | 9.40                           | 1                                                        | 40.0                                    | 15.6                                         | 0.075                                                               |
| P6KE12      | 12                  | 10.8                           | 13.2  | 1                       | 9.72                           | 1                                                        | 36.0                                    | 17.3                                         | 0.078                                                               |
| P6KE12A     | 12                  | 11.4                           | 12.6  | 1                       | 10.2                           | 1                                                        | 37.0                                    | 16.7                                         | 0.078                                                               |
| P6KE13      | 13                  | 11.7                           | 14.3  | 1                       | 10.5                           | 1                                                        | 33.0                                    | 19.0                                         | 0.081                                                               |
| P6KE13A     | 13                  | 12.4                           | 13.7  | 1                       | 11.1                           | 1                                                        | 34.0                                    | 18.2                                         | 0.081                                                               |
| P6KE15      | 15                  | 13.5                           | 16.5  | 1                       | 12.1                           | 1                                                        | 28.0                                    | 22.0                                         | 0.084                                                               |
| P6KE15A     | 15                  | 14.3                           | 15.8  | 1                       | 12.8                           | 1                                                        | 29.0                                    | 21.2                                         | 0.084                                                               |
| P6KE16      | 16                  | 14.4                           | 17.6  | 1                       | 12.9                           | 1                                                        | 26.0                                    | 23.5                                         | 0.086                                                               |
| P6KE16A     | 16                  | 15.2                           | 16.8  | 1                       | 13.6                           | 1                                                        | 28.0                                    | 22.5                                         | 0.086                                                               |
| P6KE18      | 18                  | 16.2                           | 19.8  | 1                       | 14.5                           | 1                                                        | 23.0                                    | 26.5                                         | 0.088                                                               |
| P6KE18A     | 18                  | 17.1                           | 18.9  | 1                       | 15.3                           | 1                                                        | 25.0                                    | 25.2                                         | 0.088                                                               |
| P6KE20      | 20                  | 18.0                           | 22.0  | 1                       | 16.2                           | 1                                                        | 21.0                                    | 29.1                                         | 0.090                                                               |
| P6KE20A     | 20                  | 19.0                           | 21.0  | 1                       | 17.1                           | 1                                                        | 22.0                                    | 27.7                                         | 0.090                                                               |
| P6KE22      | 22                  | 19.8                           | 24.2  | 1                       | 17.8                           | 1                                                        | 19.0                                    | 31.9                                         | 0.092                                                               |
| P6KE22A     | 22                  | 20.9                           | 23.1  | 1                       | 18.8                           | 1                                                        | 20.0                                    | 30.6                                         | 0.092                                                               |
| P6KE24      | 24                  | 21.6                           | 26.4  | 1                       | 19.4                           | 1                                                        | 18.0                                    | 34.7                                         | 0.094                                                               |
| P6KE24A     | 24                  | 22.8                           | 25.2  | 1                       | 20.5                           | 1                                                        | 19.0                                    | 33.2                                         | 0.094                                                               |
| P6KE27      | 27                  | 24.3                           | 29.7  | 1                       | 21.8                           | 1                                                        | 16.0                                    | 39.1                                         | 0.096                                                               |
| P6KE27A     | 27                  | 25.7                           | 28.4  | 1                       | 23.1                           | 1                                                        | 16.8                                    | 37.5                                         | 0.096                                                               |
| P6KE30      | 30                  | 27.0                           | 33.0  | 1                       | 24.3                           | 1                                                        | 14.0                                    | 43.5                                         | 0.097                                                               |
| P6KE30A     | 30                  | 28.5                           | 31.5  | 1                       | 25.6                           | 1                                                        | 15.0                                    | 41.4                                         | 0.097                                                               |
| P6KE30A     | 30                  | 28.5                           | 31.5  | 1                       | 25.6                           | 1                                                        | 15.0                                    | 41.4                                         | 0.097                                                               |
| P6KE33      | 33                  | 29.7                           | 36.3  | 1                       | 26.8                           | 1                                                        | 13.0                                    | 47.7                                         | 0.098                                                               |
| P6KE33A     | 33                  | 31.4                           | 34.7  | 1                       | 28.2                           | 1                                                        | 13.8                                    | 45.7                                         | 0.098                                                               |
| P6KE36      | 36                  | 32.4                           | 39.6  | 1                       | 29.1                           | 1                                                        | 12.0                                    | 52.0                                         | 0.099                                                               |
| P6KE36A     | 36                  | 34.2                           | 37.8  | 1                       | 30.8                           | 1                                                        | 12.6                                    | 49.9                                         | 0.099                                                               |
| P6KE39      | 39                  | 35.1                           | 42.9  | 1                       | 31.6                           | 1                                                        | 11.1                                    | 56.4                                         | 0.100                                                               |
| P6KE39A     | 39                  | 37.1                           | 41.0  | 1                       | 33.3                           | 1                                                        | 11.6                                    | 53.9                                         | 0.100                                                               |
| P6KE43      | 43                  | 38.7                           | 47.3  | 1                       | 34.8                           | 1                                                        | 10.0                                    | 61.9                                         | 0.101                                                               |
| P6KE43A     | 43                  | 40.9                           | 45.2  | 1                       | 36.8                           | 1                                                        | 10.6                                    | 59.3                                         | 0.101                                                               |
| P6KE47      | 47                  | 42.3                           | 51.7  | 1                       | 38.1                           | 1                                                        | 9.2                                     | 67.8                                         | 0.101                                                               |
| P6KE47A     | 47                  | 44.7                           | 49.4  | 1                       | 40.2                           | 1                                                        | 9.7                                     | 64.8                                         | 0.101                                                               |
| P6KE51      | 51                  | 45.9                           | 56.1  | 1                       | 41.3                           | 1                                                        | 8.5                                     | 73.5                                         | 0.102                                                               |
| P6KE51A     | 51                  | 48.5                           | 53.6  | 1                       | 43.6                           | 1                                                        | 8.9                                     | 70.1                                         | 0.102                                                               |
| P6KE56      | 56                  | 50.4                           | 61.6  | 1                       | 45.4                           | 1                                                        | 7.8                                     | 80.5                                         | 0.103                                                               |
| P6KE56A     | 56                  | 53.2                           | 58.8  | 1                       | 47.8                           | 1                                                        | 8.1                                     | 77.0                                         | 0.103                                                               |
| P6KE62      | 62                  | 55.8                           | 68.2  | 1                       | 50.2                           | 1                                                        | 7.0                                     | 89.0                                         | 0.104                                                               |
| P6KE62A     | 62                  | 58.9                           | 65.1  | 1                       | 53.0                           | 1                                                        | 7.4                                     | 85.0                                         | 0.104                                                               |
| P6KE68      | 68                  | 61.2                           | 74.8  | 1                       | 55.1                           | 1                                                        | 6.4                                     | 98.0                                         | 0.104                                                               |

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|-------------|---------------------|--------------------------------|------|-------------------------|--------------------------------|----------------------------------------------------------|-----------------------------------------|----------------------------------------------|---------------------------------------------------------------------|
|             |                     | Min                            | Max  |                         |                                |                                                          |                                         |                                              |                                                                     |
| P6KE68A     | 68                  | 64.6                           | 71.4 | 1                       | 58.1                           | 1                                                        | 6.8                                     | 92.0                                         | 0.104                                                               |
| P6KE75      | 75                  | 67.5                           | 82.5 | 1                       | 60.7                           | 1                                                        | 5.8                                     | 108                                          | 0.105                                                               |
| P6KE75A     | 75                  | 71.3                           | 78.8 | 1                       | 64.1                           | 1                                                        | 6.1                                     | 103                                          | 0.105                                                               |
| P6KE82      | 82                  | 73.8                           | 90.2 | 1                       | 66.4                           | 1                                                        | 5.3                                     | 118                                          | 0.105                                                               |
| P6KE82A     | 82                  | 77.9                           | 86.1 | 1                       | 70.1                           | 1                                                        | 5.5                                     | 113                                          | 0.105                                                               |
| P6KE91      | 91                  | 81.9                           | 100  | 1                       | 73.7                           | 1                                                        | 4.8                                     | 131                                          | 0.106                                                               |
| P6KE91A     | 91                  | 86.5                           | 95.5 | 1                       | 77.8                           | 1                                                        | 5.0                                     | 125                                          | 0.106                                                               |
| P6KE100     | 100                 | 90                             | 110  | 1                       | 81.0                           | 1                                                        | 4.3                                     | 144                                          | 0.106                                                               |
| P6KE100A    | 100                 | 95                             | 105  | 1                       | 85.5                           | 1                                                        | 4.5                                     | 137                                          | 0.106                                                               |
| P6KE110     | 110                 | 99                             | 121  | 1                       | 89.2                           | 1                                                        | 3.9                                     | 158                                          | 0.107                                                               |
| P6KE110A    | 110                 | 105                            | 116  | 1                       | 94.0                           | 1                                                        | 4.1                                     | 152                                          | 0.107                                                               |
| P6KE120     | 120                 | 108                            | 132  | 1                       | 97.2                           | 1                                                        | 3.6                                     | 173                                          | 0.107                                                               |
| P6KE120A    | 120                 | 114                            | 126  | 1                       | 102                            | 1                                                        | 3.8                                     | 165                                          | 0.107                                                               |
| P6KE130     | 130                 | 117                            | 143  | 1                       | 105                            | 1                                                        | 3.3                                     | 187                                          | 0.107                                                               |
| P6KE130A    | 130                 | 124                            | 137  | 1                       | 111                            | 1                                                        | 3.5                                     | 179                                          | 0.107                                                               |
| P6KE150     | 150                 | 135                            | 165  | 1                       | 121                            | 1                                                        | 2.9                                     | 215                                          | 0.108                                                               |
| P6KE150A    | 150                 | 143                            | 158  | 1                       | 128                            | 1                                                        | 3.0                                     | 207                                          | 0.108                                                               |
| P6KE160     | 160                 | 144                            | 176  | 1                       | 130                            | 1                                                        | 2.7                                     | 230                                          | 0.108                                                               |
| P6KE160A    | 160                 | 152                            | 168  | 1                       | 136                            | 1                                                        | 2.8                                     | 219                                          | 0.108                                                               |
| P6KE170     | 170                 | 153                            | 187  | 1                       | 138                            | 1                                                        | 2.5                                     | 244                                          | 0.108                                                               |
| P6KE170A    | 170                 | 162                            | 179  | 1                       | 145                            | 1                                                        | 2.6                                     | 234                                          | 0.108                                                               |
| P6KE180     | 180                 | 162                            | 198  | 1                       | 146                            | 1                                                        | 2.4                                     | 258                                          | 0.108                                                               |
| P6KE180A    | 180                 | 171                            | 189  | 1                       | 154                            | 1                                                        | 2.5                                     | 246                                          | 0.108                                                               |
| P6KE200     | 200                 | 180                            | 220  | 1                       | 162                            | 1                                                        | 2.1                                     | 287                                          | 0.108                                                               |
| P6KE200A    | 200                 | 190                            | 210  | 1                       | 171                            | 1                                                        | 2.2                                     | 274                                          | 0.108                                                               |
| P6KE220     | 220                 | 198                            | 242  | 1                       | 175                            | 1                                                        | 1.8                                     | 344                                          | 0.108                                                               |
| P6KE220A    | 220                 | 209                            | 231  | 1                       | 185                            | 1                                                        | 1.9                                     | 328                                          | 0.108                                                               |
| P6KE250     | 250                 | 225                            | 275  | 1                       | 202                            | 1                                                        | 1.7                                     | 360                                          | 0.110                                                               |
| P6KE250A    | 250                 | 237                            | 263  | 1                       | 214                            | 1                                                        | 1.8                                     | 344                                          | 0.110                                                               |
| P6KE300     | 300                 | 270                            | 330  | 1                       | 243                            | 1                                                        | 1.4                                     | 430                                          | 0.110                                                               |
| P6KE300A    | 300                 | 285                            | 315  | 1                       | 256                            | 1                                                        | 1.5                                     | 414                                          | 0.110                                                               |
| P6KE350     | 350                 | 315                            | 385  | 1                       | 284                            | 1                                                        | 1.2                                     | 504                                          | 0.110                                                               |
| P6KE350A    | 350                 | 332                            | 368  | 1                       | 300                            | 1                                                        | 1.3                                     | 482                                          | 0.110                                                               |
| P6KE400     | 400                 | 360                            | 440  | 1                       | 324                            | 1                                                        | 1.0                                     | 574                                          | 0.110                                                               |
| P6KE400A    | 400                 | 380                            | 420  | 1                       | 342                            | 1                                                        | 1.1                                     | 548                                          | 0.110                                                               |
| P6KE440     | 440                 | 396                            | 484  | 1                       | 356                            | 1                                                        | 1.0                                     | 631                                          | 0.110                                                               |
| P6KE440A    | 440                 | 418                            | 462  | 1                       | 376                            | 1                                                        | 1.04                                    | 602                                          | 0.110                                                               |

**Notes:**

1.  $V_{BR}$  measure after  $I_T$  applied for 300 $\mu\text{s}$ ,  $I_T$  = square wave pulse or equivalent.
2. Surge current waveform per Fig.3 and derate per Fig.2
3. For bipolar types having  $V_{WM}$  of 10 volts and under, the  $I_D$  limit is doubled.
4. All terms and symbols are consistent with ANSI/IEEE C62.35

**ORDERING INFORMATION**

| <b>ORDERING CODE<sup>(1)(2)</sup></b> | <b>PACKAGE</b>   | <b>PACKING</b>      |
|---------------------------------------|------------------|---------------------|
| P6KE <sub>x</sub>                     | DO-204AC (DO-15) | 3,500 / Tape & Reel |
| P6KE <sub>x</sub> A0G                 | DO-204AC (DO-15) | 1,500 / Ammo box    |
| P6KE <sub>x</sub> H                   | DO-204AC (DO-15) | 3,500 / Tape & Reel |
| P6KE <sub>x</sub> HA0G                | DO-204AC (DO-15) | 1,500 / Ammo box    |

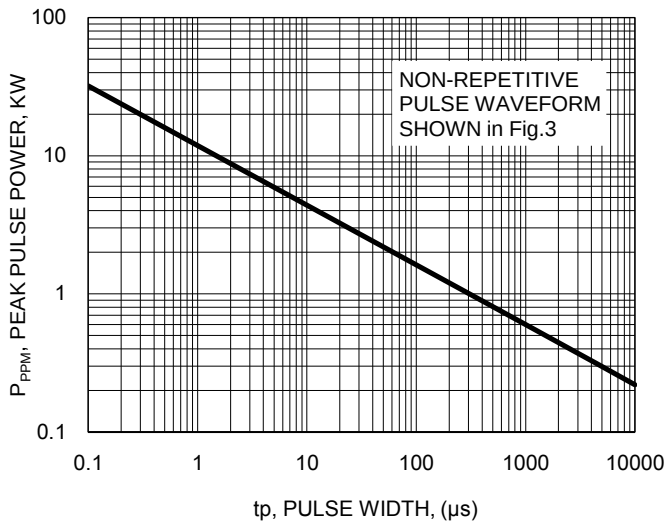
**Notes:**

1. "x" defines voltage from 6.8V(P6KE6.8) to 440V(P6KE440)
2. "H" means AEC-Q101 qualified (excluding P6KE6V8A - P6KE9V1A product)

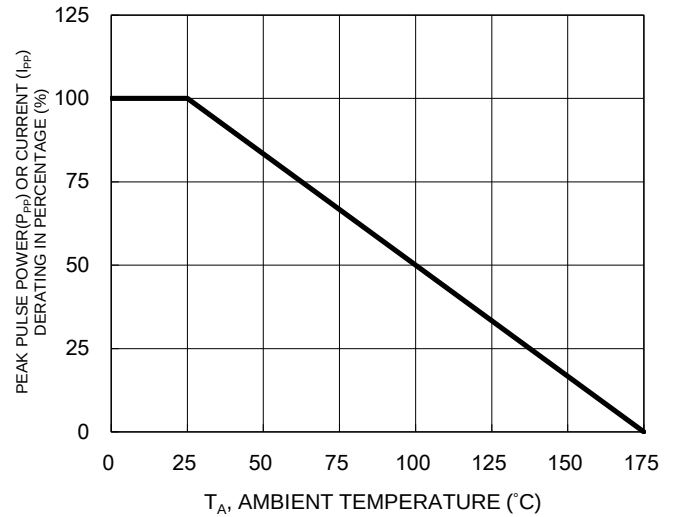
## CHARACTERISTICS CURVES

( $T_A = 25^\circ\text{C}$  unless otherwise noted)

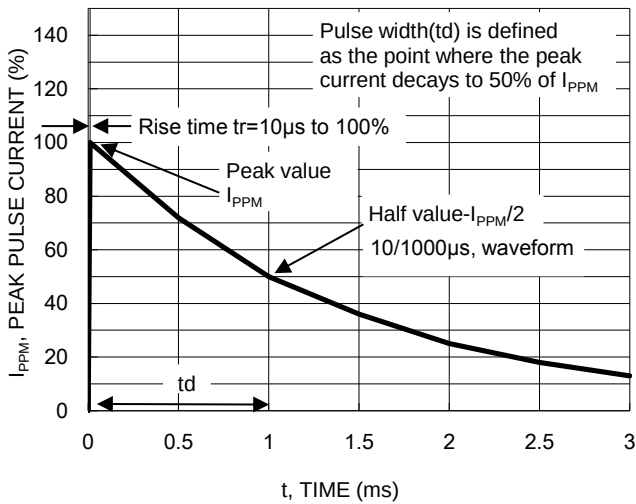
**Fig.1 Peak Pulse Power Rating Curve**



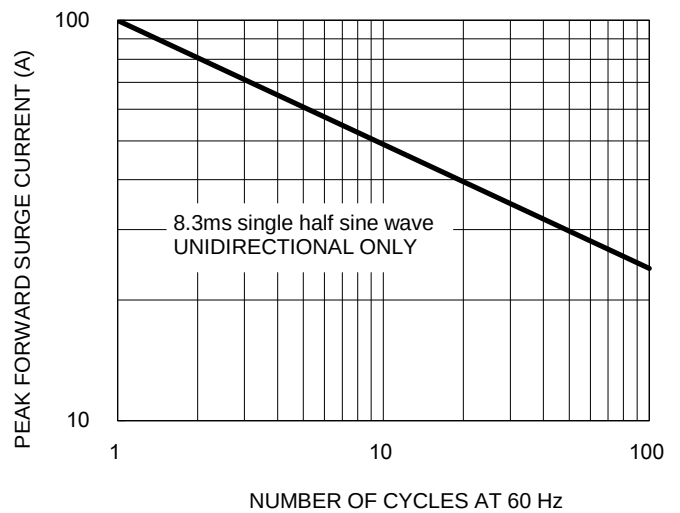
**Fig.2 Pulse Derating Curve**



**Fig.3 Clamping Power Pulse Waveform**



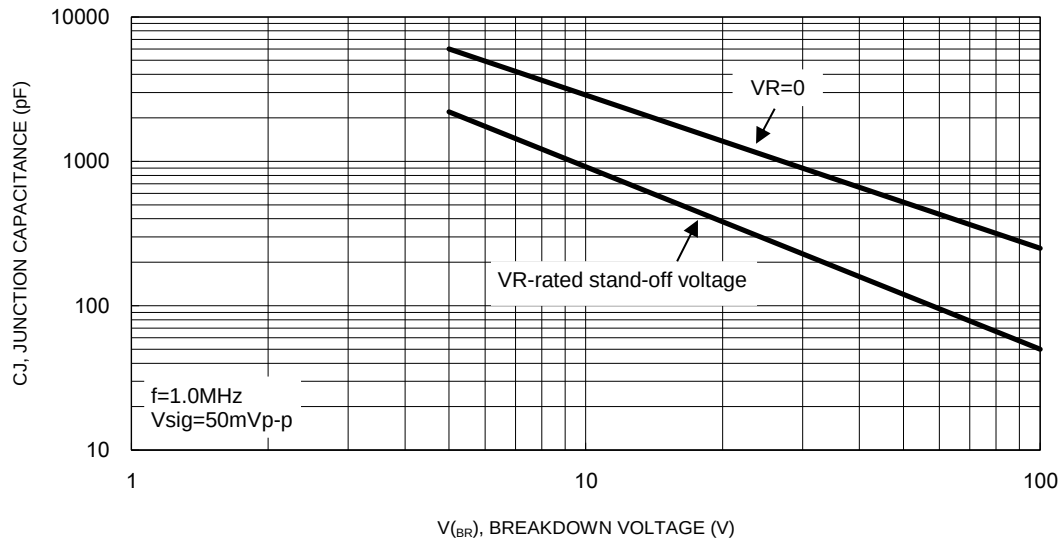
**Fig.4 Maximum Non-Repetitive Forward Surge Current**



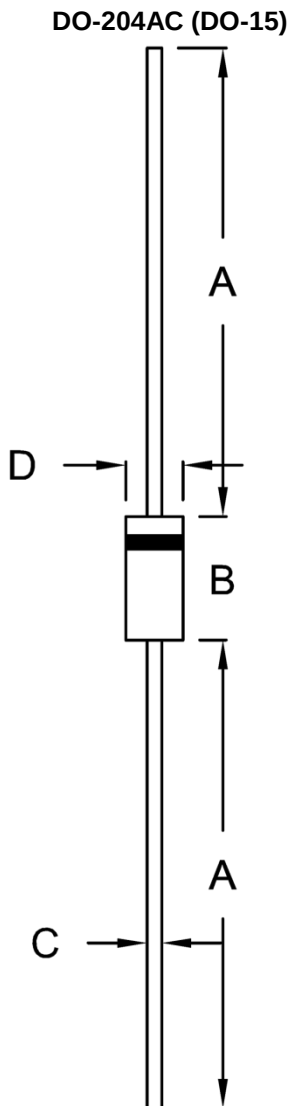
## CHARACTERISTICS CURVES

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**Fig.5 Typical Junction Capacitance**



## PACKAGE OUTLINE DIMENSIONS



| DIM. | Unit (mm) |      | Unit (inch) |       |
|------|-----------|------|-------------|-------|
|      | Min.      | Max. | Min.        | Max.  |
| A    | 25.40     | -    | 1.000       | -     |
| B    | 5.80      | 7.60 | 0.228       | 0.299 |
| C    | 0.70      | 0.90 | 0.028       | 0.035 |
| D    | 2.60      | 3.60 | 0.102       | 0.142 |

## MARKING DIAGRAM

Cathode band for uni-directional products only



P/N = Marking Code  
G = Green Compound  
YWW = Date Code  
F = Factory Code

## Notice

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