



Micro Commercial Components



Micro Commercial Components  
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# P6KE6.8 THRU P6KE540(C)A

## 600WATTS TRANSIENT VOLTAGE SUPPRESSOR 6.8 TO 540 VOLTS

### Features

- Economical series
- Available in both unidirectional and bidirectional construction and suffix "C" designates bidirectional type
- Lead Free Finish/Rohs Compliant (Note1) ("P" Suffix designates Compliant. See ordering information)
- 600 watts peak pulse power dissipation and 5.8~459V  $V_{WM}$
- UL Recognized File # E222849

- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- **POLARITY:** Banded denotes cathode. Bidirectional not marked.
- **WEIGHT:** 0.4 Gram(Appx.).
- **MOUNTING POSITION:** Any.

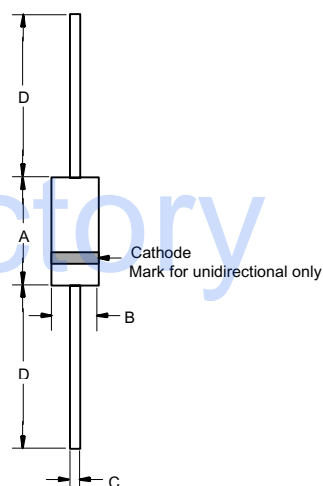
### Maximum Ratings

Peak Pulse Power Dissipation at 25°C: 600Watts  
 Steady State Power Dissipation: 5 Watts at  $T_L=75^\circ C$   
 3/8" Lead Length  
 $t_{clamping}$  (0 Volts to BV Min.):  
 Unidirectional  $<1 \times 10^{-12}$  Seconds; Bidirectional  $<5 \times 10^{-9}$  Seconds.  
 Operating and Storage Temperature:  $-55^\circ C$  to  $+175^\circ C$

### APPLICATION

Use in sensitive electronics protection against voltage transients induced by inductive load switching and lighting on ICs, MOSFET, signal lines of sensor units for consumer, computer, industrial, automotive and telecommunication.

### DO-15



| DIM | DIMENSIONS |      |       |      | NOTE |
|-----|------------|------|-------|------|------|
|     | INCHES     |      | MM    |      |      |
| A   | .230       | .300 | 5.80  | 7.60 |      |
| B   | .104       | .140 | 2.60  | 3.60 |      |
| C   | .028       | .034 | .70   | .90  |      |
| D   | 1.000      | ---  | 25.40 | ---  |      |

Note: 1. High Temperature Solder Exemptions Applied, see EU Directive Annex 7.

## RATINGS AND CHARACTERISTICS CURVES

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

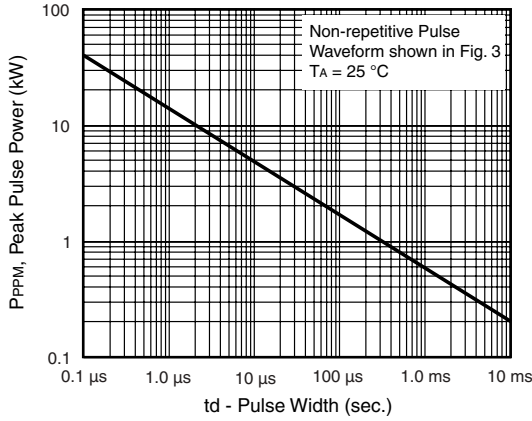


Figure 1. Peak Pulse Power Rating Curve

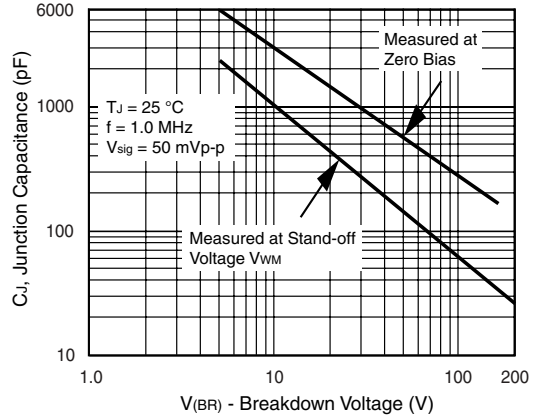


Figure 4. Typical Junction Capacitance Uni-Directional

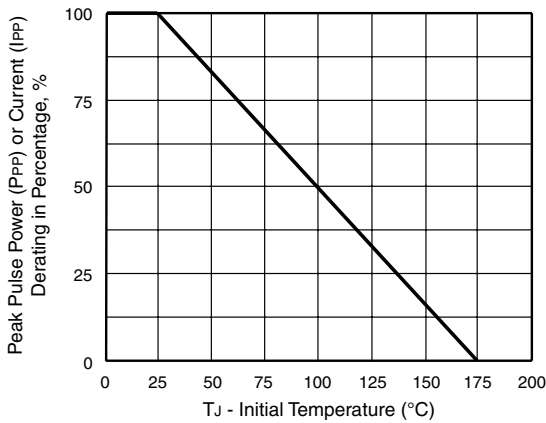


Figure 2. Pulse Power or Current versus Initial Junction Temperature

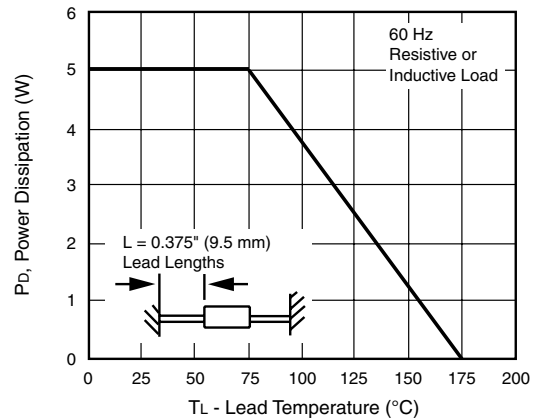


Figure 5. Power Derating Curve

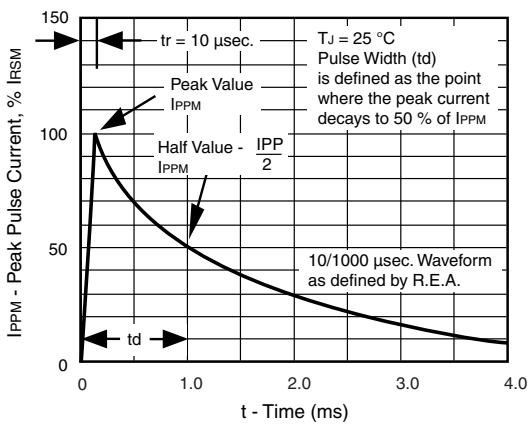


Figure 3. Pulse Waveform

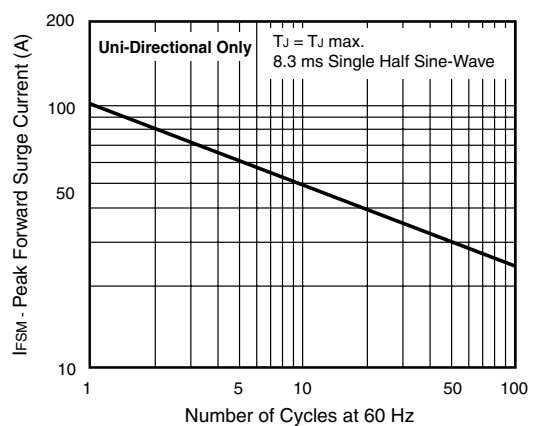


Figure 6. Maximum Non-Repetitive Forward Surge Current

# P6KE6.8 thru P6KE540A



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| MCC<br>PART NUMBER | BREAKDOWN<br>VOLTAGE<br>$V_{(BR)} @ I_T$ |     |      | TEST<br>CURRENT<br>$I_T$ | RATED<br>STANDOFF<br>VOLTAGE<br>$V_{WM}$ | MAXIMUM<br>REVERSE<br>LEAKAGE<br>$I_D @ V_{WM}$ | MAXIMUM<br>CLAMPING<br>VOLTAGE<br>$V_C @ I_{PP}$ | MAXIMUM<br>PEAK<br>PULSE<br>CURRENT<br>$I_{PP}$ | MAX. TEMP<br>COEFFICIENT OF<br>$V_{BR}$<br>$V_{(BR)} (TA)$<br>-55°C TO 100°C |
|--------------------|--|-----|------|--------------------------|--|---|--|---|--|
|                    | MIN                                      | NOM | MAX  |                          |  |   |  |   |  |
| P6KE6.8            | 6.12                                     | 6.8 | 7.48 | 10                       | 5.5                                      | 1000  | 10.8   | 56  | .057   |
| P6KE6.8A           | 6.45                                     | 6.8 | 7.14 | 10                       | 5.8                                      | 1000  | 10.5   | 57  | .057   |
| P6KE7.5            | 6.75                                     | 7.5 | 8.25 | 10                       | 6.05                                     | 500   | 11.7   | 51  | .061   |
| P6KE7.5A           | 7.13                                     | 7.5 | 7.88 | 10                       | 6.4                                      | 500   | 11.3   | 53  | .061   |
| P6KE8.2            | 7.38                                     | 8.2 | 9.02 | 10                       | 6.63                                     | 200   | 12.5   | 48  | .065   |
| P6KE8.2A           | 7.79                                     | 8.2 | 8.61 | 10                       | 7.02                                     | 200   | 12.1   | 50  | .065   |
| P6KE9.1            | 8.19                                     | 9.1 | 10   | 1                        | 7.37                                     | 50  | 13.8   | 44  | .068   |
| P6KE9.1A           | 8.65                                     | 9.1 | 9.55 | 1                        | 7.78                                     | 50  | 13.4   | 45  | .068   |
| P6KE10             | 9.0                                      | 10  | 11   | 1                        | 8.1                                      | 10  | 15   | 40  | .073   |
| P6KE10A            | 9.5                                      | 10  | 10.5 | 1                        | 8.55                                     | 10  | 14.5   | 41  | .073   |
| P6KE11             | 9.9                                      | 11  | 12.1 | 1                        | 8.92                                     | 5   | 16.2   | 37  | .075   |
| P6KE11A            | 10.5                                     | 11  | 11.6 | 1                        | 9.4                                      | 5   | 15.6   | 38  | .075   |
| P6KE12             | 10.8                                     | 12  | 13.2 | 1                        | 9.72                                     | 5   | 17.3   | 35  | .078   |
| P6KE12A            | 11.4                                     | 12  | 12.6 | 1                        | 10.2                                     | 5   | 16.7   | 36  | .078   |
| P6KE13             | 11.7                                     | 13  | 14.3 | 1                        | 10.5                                     | 5   | 19   | 32  | .081   |
| P6KE13A            | 12.4                                     | 13  | 13.7 | 1                        | 11.1                                     | 5   | 18.2   | 33  | .081   |
| P6KE15             | 13.5                                     | 15  | 16.5 | 1                        | 12.1                                     | 5   | 22   | 27  | .084   |
| P6KE15A            | 14.3                                     | 15  | 15.8 | 1                        | 12.8                                     | 5   | 21.2   | 28  | .084   |
| P6KE16             | 14.4                                     | 16  | 17.6 | 1                        | 12.9                                     | 5   | 23.5   | 26  | .086   |
| P6KE16A            | 15.2                                     | 16  | 16.8 | 1                        | 13.6                                     | 5   | 22.5   | 27  | .086   |
| P6KE18             | 16.2                                     | 18  | 19.8 | 1                        | 14.5                                     | 5   | 26.5   | 23  | .088   |
| P6KE18A            | 17.1                                     | 18  | 18.9 | 1                        | 15.3                                     | 5   | 25.2   | 24  | .088   |
| P6KE20             | 18                                       | 20  | 22   | 1                        | 16.2                                     | 5   | 29.1   | 21  | .090   |
| P6KE20A            | 19                                       | 20  | 21   | 1                        | 17.1                                     | 5   | 27.7   | 22  | .090   |
| P6KE22             | 19.8                                     | 22  | 24.2 | 1                        | 17.8                                     | 5   | 31.9   | 19  | .092   |
| P6KE22A            | 20.9                                     | 22  | 23.1 | 1                        | 18.8                                     | 5   | 30.6   | 20  | .092   |
| P6KE24             | 21.6                                     | 24  | 26.4 | 1                        | 19.4                                     | 5   | 34.7   | 17  | .094   |
| P6KE24A            | 22.8                                     | 24  | 25.2 | 1                        | 20.5                                     | 5   | 33.2   | 18  | .094   |
| P6KE27             | 24.3                                     | 27  | 29.7 | 1                        | 21.8                                     | 5   | 39.1   | 15  | .096   |
| P6KE27A            | 25.7                                     | 27  | 28.4 | 1                        | 23.1                                     | 5   | 37.5   | 16  | .096   |
| P6KE30             | 27                                       | 30  | 33   | 1                        | 24.3                                     | 5   | 43.5   | 14  | .097   |
| P6KE30A            | 28.5                                     | 30  | 31.5 | 1                        | 25.6                                     | 5   | 41.4   | 14.4  | .097   |
| P6KE33             | 29.7                                     | 33  | 36.3 | 1                        | 26.8                                     | 5   | 47.7   | 12.6  | .098   |
| P6KE33A            | 31.4                                     | 33  | 34.7 | 1                        | 28.2                                     | 5   | 45.7   | 13.2  | .098   |
| P6KE36             | 32.4                                     | 36  | 39.6 | 1                        | 29.1                                     | 5   | 52   | 11.6  | .099   |
| P6KE36A            | 34.2                                     | 36  | 37.8 | 1                        | 30.8                                     | 5   | 49.9   | 12  | .099   |
| P6KE39             | 35.1                                     | 39  | 42.9 | 1                        | 31.6                                     | 5   | 56.4   | 10.6  | .100   |
| P6KE39A            | 37.1                                     | 39  | 41   | 1                        | 33.3                                     | 5   | 53.9   | 11.2  | .100   |
| P6KE43             | 38.7                                     | 43  | 47.3 | 1                        | 34.8                                     | 5   | 61.9   | 9.6   | .101   |
| P6KE43A            | 40.9                                     | 43  | 45.2 | 1                        | 36.8                                     | 5   | 59.3   | 10.1  | .101   |
| P6KE47             | 42.3                                     | 47  | 51.7 | 1                        | 38.1                                     | 5   | 67.8   | 8.9   | .101   |
| P6KE47A            | 44.7                                     | 47  | 49.4 | 1                        | 40.2                                     | 5   | 64.8   | 9.3   | .101   |
| P6KE51             | 45.9                                     | 51  | 56.1 | 1                        | 41.3                                     | 5   | 73.5   | 8.2   | .102   |
| P6KE51A            | 48.5                                     | 51  | 53.6 | 1                        | 43.6                                     | 5   | 70.1   | 8.6   | .102   |
| P6KE56             | 50.4                                     | 56  | 61.6 | 1                        | 45.4                                     | 5   | 80.5   | 7.4   | .103   |
| P6KE56A            | 53.2                                     | 56  | 58.8 | 1                        | 47.8                                     | 5   | 77   | 7.8   | .103   |
| P6KE62             | 55.8                                     | 62  | 68.2 | 1                        | 50.2                                     | 5   | 89   | 6.8   | .104   |
| P6KE62A            | 58.9                                     | 62  | 65.1 | 1                        | 53                                       | 5   | 85   | 7.1   | .104   |
| P6KE68             | 61.2                                     | 68  | 74.8 | 1                        | 55.1                                     | 5   | 98   | 6.1   | .104   |
| P6KE68A            | 64.6                                     | 68  | 71.4 | 1                        | 58.1                                     | 5   | 92   | 6.5   | .104   |

# P6KE6.8 thru P6KE540A



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| MCC<br>PART NUMBER | BREAKDOWN<br>VOLTAGE<br>$V_{(BR)} @ I_T$<br>(VOLTS) |     |      | TEST<br>CURRENT<br>$I_T$<br>mADC | RATED<br>STANDOFF<br>VOLTAGE<br>$V_{WM}$<br>V | MAXIMUM<br>REVERSE<br>LEAKAGE<br>$I_D @ V_{WM}$<br>( $\mu$ A) | MAXIMUM<br>CLAMPING<br>VOLTAGE<br>$V_C @ I_{PP}$<br>V | MAXIMUM<br>PEAK<br>PULSE<br>CURRENT<br>$I_{PP}$<br>A | MAX. TEMP<br>COEFFICIENT OF<br>$V_{BR}$<br>$V_{(BR)} (TA)$<br>-55°C TO 100°C<br>% / °C |
|--------------------|---|-----|------|----------------------------------|---|---|---|--|--|
|                    | MIN   | NOM | MAX  |                                  |   |   |   |  |  |
| P6KE75             | 67.5  | 75  | 82.5 | 1                                | 60.7  | 5   | 108   | 5.5  | .105   |
| P6KE75A            | 71.3  | 75  | 78.8 | 1                                | 64.1  | 5   | 103   | 5.8  | .105   |
| P6KE82             | 73.8  | 82  | 90.2 | 1                                | 66.4  | 5   | 118   | 5.1  | .105   |
| P6KE82A            | 77.9  | 82  | 86.1 | 1                                | 70.1  | 5   | 113   | 5.3  | .105   |
| P6KE91             | 81.9  | 91  | 100  | 1                                | 73.7  | 5   | 131   | 4.5  | .106   |
| P6KE91A            | 86.5  | 91  | 95.5 | 1                                | 77.8  | 5   | 125   | 4.8  | .106   |
| P6KE100            | 90  | 100 | 110  | 1                                | 81  | 5   | 144   | 4.2  | .106   |
| P6KE100A           | 95  | 100 | 105  | 1                                | 85.5  | 5   | 137   | 4.4  | .106   |
| P6KE110            | 99  | 110 | 121  | 1                                | 89.2  | 5   | 158   | 3.8  | .107   |
| P6KE110A           | 105   | 110 | 116  | 1                                | 94  | 5   | 152   | 4.0  | .107   |
| P6KE120            | 108   | 120 | 132  | 1                                | 97.2  | 5   | 173   | 3.5  | .107   |
| P6KE120A           | 114   | 120 | 126  | 1                                | 102   | 5   | 165   | 3.6  | .107   |
| P6KE130            | 117   | 130 | 143  | 1                                | 105   | 5   | 187   | 3.2  | .108   |
| P6KE130A           | 124   | 130 | 137  | 1                                | 111   | 5   | 179   | 3.3  | .108   |
| P6KE150            | 135   | 150 | 165  | 1                                | 121   | 5   | 215   | 2.8  | .108   |
| P6KE150A           | 143   | 150 | 158  | 1                                | 128   | 5   | 207   | 2.9  | .108   |
| P6KE160            | 144   | 160 | 176  | 1                                | 130   | 5   | 230   | 2.6  | .108   |
| P6KE160A           | 152   | 160 | 168  | 1                                | 136   | 5   | 219   | 2.7  | .108   |
| P6KE170            | 153   | 170 | 187  | 1                                | 138   | 5   | 244   | 2.5  | .108   |
| P6KE170A           | 161   | 170 | 179  | 1                                | 145   | 5   | 234   | 2.6  | .108   |
| P6KE180            | 162   | 180 | 198  | 1                                | 146   | 5   | 258   | 2.3  | .108   |
| P6KE180A           | 171   | 180 | 189  | 1                                | 154   | 5   | 246   | 2.4  | .108   |
| P6KE200            | 180   | 200 | 220  | 1                                | 162   | 5   | 287   | 2.1  | .108   |
| P6KE200A           | 190   | 200 | 210  | 1                                | 171   | 5   | 274   | 2.2  | .108   |
| P6KE220            | 198   | 220 | 242  | 1                                | 175   | 5   | 344   | 1.8  | .108   |
| P6KE220A           | 209   | 220 | 231  | 1                                | 185   | 5   | 328   | 1.9  | .108   |
| P6KE250            | 225   | 250 | 275  | 1                                | 202   | 5   | 360   | 1.7  | .110   |
| P6KE250A           | 237   | 250 | 263  | 1                                | 214   | 5   | 344   | 1.8  | .110   |
| P6KE300            | 270   | 300 | 330  | 1                                | 243   | 5   | 430   | 1.4  | .110   |
| P6KE300A           | 285   | 300 | 315  | 1                                | 256   | 5   | 414   | 1.5  | .110   |
| P6KE350            | 315   | 350 | 385  | 1                                | 284   | 5   | 504   | 1.2  | .110   |
| P6KE350A           | 332   | 350 | 368  | 1                                | 300   | 5   | 482   | 1.3  | .110   |
| P6KE400            | 360   | 400 | 440  | 1                                | 324   | 5   | 574   | 1.05   | .110   |
| P6KE400A           | 380   | 400 | 420  | 1                                | 342   | 5   | 548   | 1.1  | .110   |
| P6KE440            | 396   | 440 | 484  | 1                                | 356   | 5   | 631   | 0.99   | .110   |
| P6KE440A           | 418   | 440 | 462  | 1                                | 376   | 5   | 600   | 1.04   | .110   |
| P6KE480            | 432   | 480 | 528  | 1                                | 389   | 5   | 686   | 0.88   | .110   |
| P6KE480A           | 456   | 480 | 504  | 1                                | 408   | 5   | 658   | 0.91   | .110   |
| P6KE510            | 459   | 510 | 561  | 1                                | 413   | 5   | 729   | 0.82   | .110   |
| P6KE510A           | 485   | 510 | 535  | 1                                | 434   | 5   | 698   | 0.86   | .110   |
| P6KE540            | 486   | 510 | 594  | 1                                | 437   | 5   | 772   | 0.78   | .110   |
| P6KE540A           | 513   | 510 | 567  | 1                                | 459   | 5   | 740   | 0.81   | .110   |

Notes: For bidirectional types having  $V_{wm}$  of 10 Volts and less, the  $I_R$  limit is double.  
For parts without A, the  $V_{BR}$  is +/- 10%.



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### Ordering Information :

| Device         | Packing                      |
|----------------|------------------------------|
| Part Number-TP | Tape&Reel: 4Kpcs/Reel        |
| Part Number-AP | Ammo Packing: 3Kpcs/Ammo Box |
| Part Number-BP | Bulk: 25Kpcs/Carton          |

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