



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 VWM
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 TL=75 °C
3/8" Lead Length
tclamping (0 Volts to BV Min.):
Unidirectional < 1x10^-12 Seconds; Bidirectional < 5x10^-9 Seconds.
Operating and Storage Temperature: -55°C to +175°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



Table with 6 columns: DIM, INCHES (MIN, MAX), MM (MIN, MAX), and NOTE. Rows include dimensions A, B, C, and D.

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)

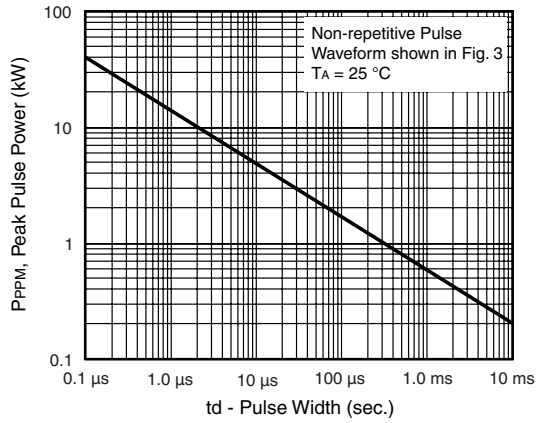


Figure 1. Peak Pulse Power Rating Curve

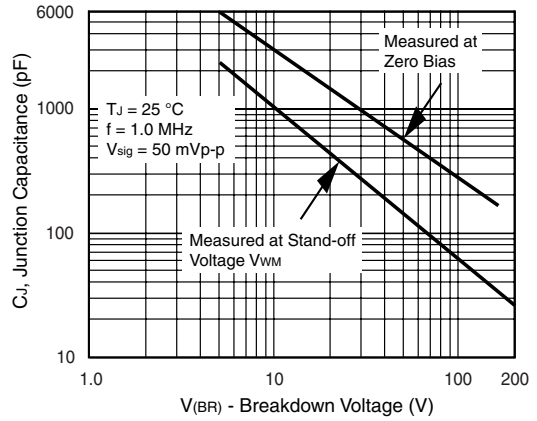


Figure 4. Typical Junction Capacitance Uni-Directional



Figure 2. Pulse Power or Current versus Initial Junction Temperature

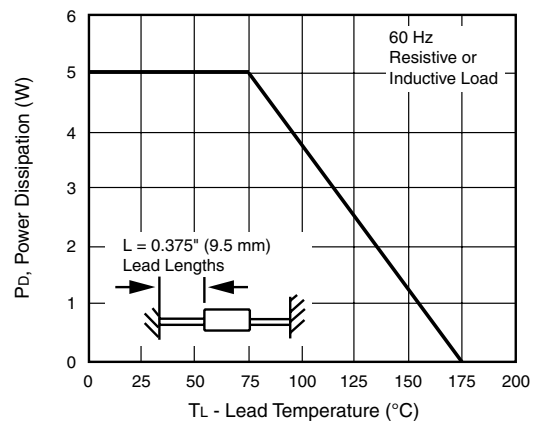


Figure 5. Power Derating Curve



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 |
|--------------------|--|-----|------|--------------------------|--|---|--|---|--|
|                    | (VOLTS)                                  |     |      |                          |  |   |  |   |  |
|                    | MIN                                      | NOM | MAX  | mADC                     | V  | ( $\mu A$ )                                     | V  | A   | % / °C   |
| 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%.



TM

Micro Commercial Components

### 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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- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
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- Помощь Конструкторского Отдела и консультации квалифицированных инженеров;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Поставка электронных компонентов под контролем ВП;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- При необходимости вся продукция военного и аэрокосмического назначения проходит испытания и сертификацию в лаборатории (по согласованию с заказчиком);
- Поставка специализированных компонентов военного и аэрокосмического уровня качества (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Actel, Aeroflex, Peregrine, VPT, Syfer, Eurofarad, Texas Instruments, MS Kennedy, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

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## JONHON

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(Применяются в военной, авиационной, аэрокосмической, морской, железнодорожной, горно- и нефтедобывающей отраслях промышленности)

«FORSTAR» (основан в 1998 г.)

ВЧ соединители, коаксиальные кабели, кабельные сборки и микроволновые компоненты:

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