

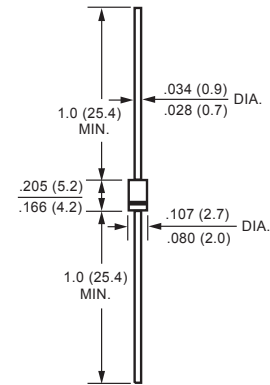
**GPP TRANSIENT VOLTAGE SUPPRESSOR  
400 WATT PEAK POWER 1.0 WATT STEADY STATE**

**FEATURES**

- \* Plastic package has underwriters laboratory
- \* Glass passivated chip construction
- \* 400 watt surge capability at 1ms
- \* Excellent clamping capability
- \* Low zener impedance
- \* Fast response time

**MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS**

Ratings at 25 °C ambient temperature unless otherwise specified.  
Single phase, half wave, 60 Hz, resistive or inductive load,  
For capacitive load, derate current by 20%.



Dimensions in inches and (millimeters)

**DEVICES FOR BIPOLAR APPLICATIONS**

For Bidirectional use C or CA suffix for types P4KE6.8 thru P4KE440

Electrical characteristics apply in both direction

MAXIMUM RATINGS (At TA = 25°C unless otherwise noted)

| RATINGS   | SYMBOL   | VALUE        | UNITS |
|---|----------|--------------|-------|
| Peak Power Dissipation at TA = 25°C, TP = 1mS ( Note 1 )  | PPPM     | Minimum 400  | Watts |
| Steady State Power Dissipation at TL = 75°C lead lengths, .375" ( 9.5 mm ) ( Note 2 )                         | PM(AV)   | 1.0          | Watts |
| Peak Forward Surge Current, 8.3ms single half sine wave-superimposed on rated load( JEDEC METHOD ) ( Note 2 ) | IFSM     | 40           | Amps  |
| Maximum Instantaneous Forward Current at 25A for unidirectional only ( Note 3 )                               | VF       | 3.5/6.5      | Volts |
| Operating and Storage Temperature Range   | TJ, TSTG | -55 to + 150 | °C    |

- NOTES : 1. Non-repetitive current pulse, per Fig.3 and derated above TA = 25°C per Fig.2.  
2. Mounted on 1.6 X 1.6" ( 40 X 40mm ) per Fig. 5  
3. VF = 3.5V max. for devices of V(BR) ≤ 220V and VF = 6.5 Volts max. for devices of V(BR) > 220V.  
4. "Fully ROHS compliant", "100% Sn plating (Pb-free)".

# RATING AND CHARACTERISTIC CURVES ( P4KE6.8 THRU P4KE440CA )

FIG. 1 - PEAK PULSE POWER RATING CURVE

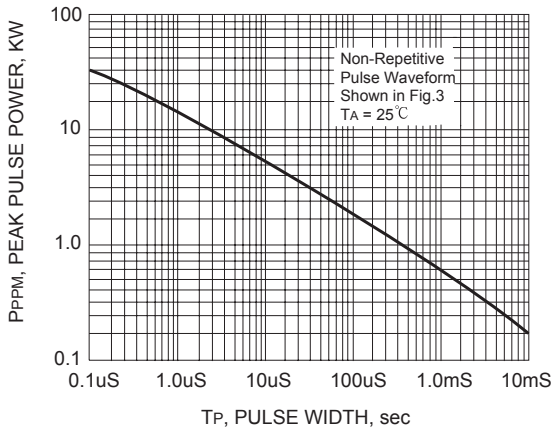


FIG. 2 - PULSE DERATING CURVE

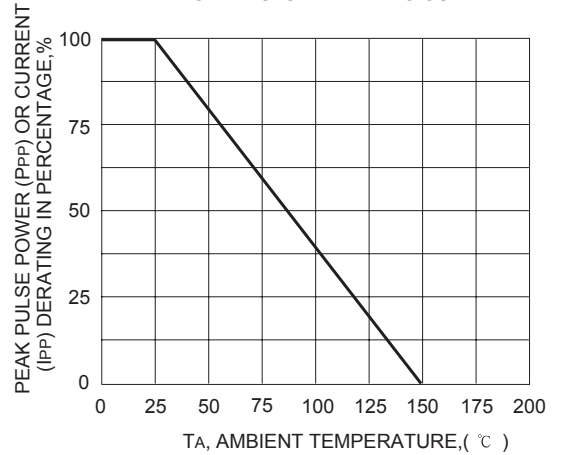


FIG. 3 - PULSE WAVEFORM

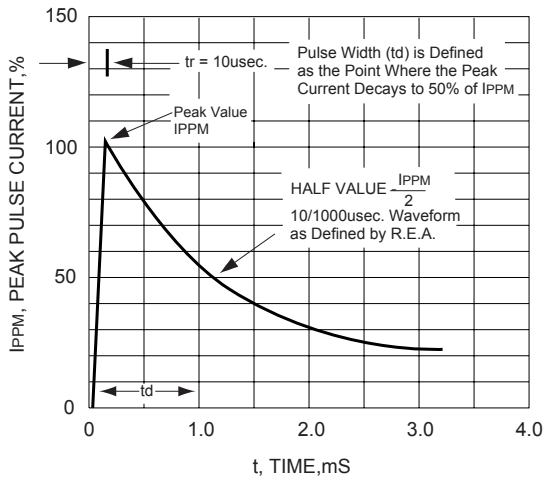
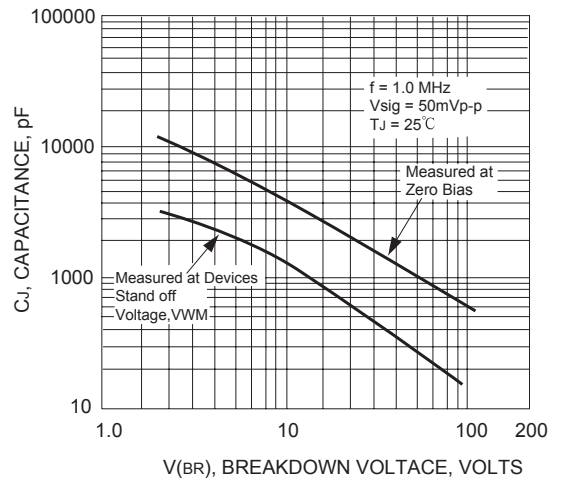


FIG. 4 - TYPICAL JUNCTION CAPACITANCE



# RATING AND CHARACTERISTIC CURVES( P4KE6.8 THRU P4KE440CA)

FIG. 5 - STEADY STATE POWER DERATING CURVE

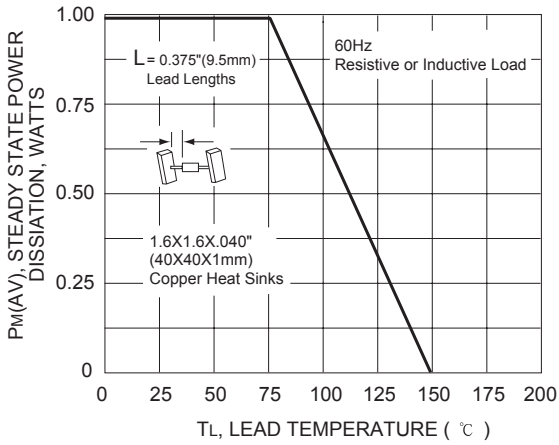


FIG. 6 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT UNIDIRECTIONAL

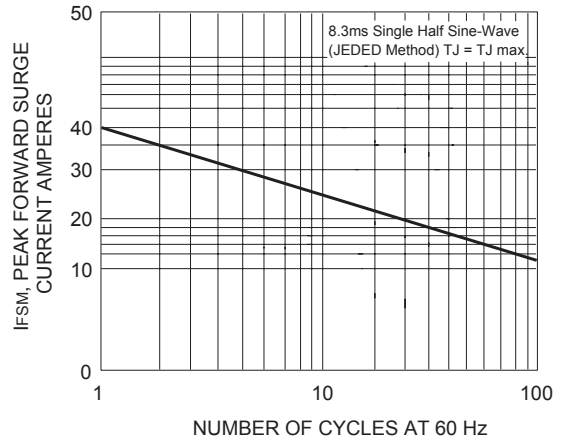
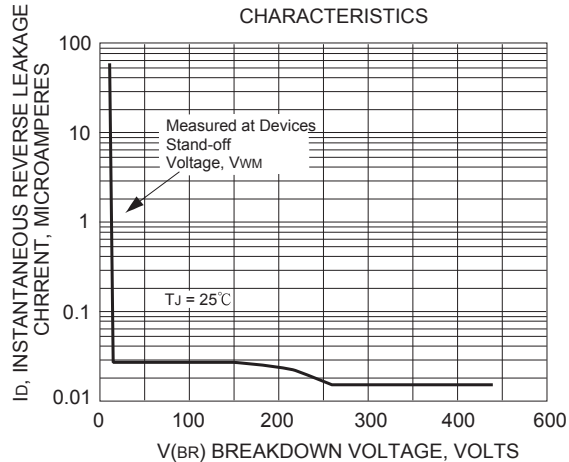


FIG. 7 - TYPICAL REVERSE LEAKAGE CHARACTERISTICS



# TRANSIENT VOLTAGE SUPPRESSORS

## 400W SERIES TVS DIODES / DO-41 ( CASE 7 ) 400W

| TYPE     | Breakdown Voltage |      |              | Reverse Stand off Voltage $V_{WM}$ (Volts) | Maximum Reverse Leakage at $V_{WM}$ $I_D$ ( $\mu$ A) | Maximum Peak Pulse Current $I_{PPM}$ (Amps) | Maximum Clamping Voltage at $I_{PPM}$ $V_C$ (Volts) |
|----------|-------------------|------|--------------|--|--|---|---|
|          | $V_{BR}$ (Volts)  |      | @ $I_T$ (mA) |  |  |   |   |
|          | MIN.              | MAX. |              |  |  |   |   |
| P4KE6.8  | 6.12              | 7.48 | 10           | 5.50                                       | 1000   | 37  | 10.8  |
| P4KE6.8A | 6.45              | 7.14 | 10           | 5.80                                       | 1000   | 38.1  | 10.5  |
| P4KE7.5  | 6.75              | 8.25 | 10           | 6.05                                       | 500  | 34.2  | 11.7  |
| P4KE7.5A | 7.13              | 7.88 | 10           | 6.40                                       | 500  | 35.4  | 11.3  |
| P4KE8.2  | 7.38              | 9.02 | 10           | 6.63                                       | 200  | 32  | 12.5  |
| P4KE8.2A | 7.79              | 8.61 | 10           | 7.02                                       | 200  | 33.1  | 12.1  |
| P4KE9.1  | 8.19              | 10.0 | 1.0          | 7.37                                       | 50   | 29  | 13.8  |
| P4KE9.1A | 8.65              | 9.55 | 1.0          | 7.78                                       | 50   | 29.9  | 13.4  |
| P4KE10   | 9.00              | 11.0 | 1.0          | 8.10                                       | 10   | 26.7  | 15.0  |
| P4KE10A  | 9.50              | 10.5 | 1.0          | 8.55                                       | 10   | 27.6  | 14.5  |
| P4KE11   | 9.90              | 12.1 | 1.0          | 8.92                                       | 5.0  | 24.7  | 16.2  |
| P4KE11A  | 10.5              | 11.6 | 1.0          | 9.40                                       | 5.0  | 25.6  | 15.6  |
| P4KE12   | 10.8              | 13.2 | 1.0          | 9.72                                       | 5.0  | 23.1  | 17.3  |
| P4KE12A  | 11.4              | 12.6 | 1.0          | 10.2                                       | 5.0  | 24  | 16.7  |
| P4KE13   | 11.7              | 14.3 | 1.0          | 10.5                                       | 5.0  | 21.1  | 19.0  |
| P4KE13A  | 12.4              | 13.7 | 1.0          | 11.1                                       | 5.0  | 22  | 18.2  |
| P4KE15   | 13.5              | 16.5 | 1.0          | 12.1                                       | 5.0  | 18.2  | 22.0  |
| P4KE15A  | 14.3              | 15.8 | 1.0          | 12.8                                       | 5.0  | 18.9  | 21.2  |
| P4KE16   | 14.4              | 17.6 | 1.0          | 12.9                                       | 5.0  | 17  | 23.5  |
| P4KE16A  | 15.2              | 16.8 | 1.0          | 13.6                                       | 5.0  | 17.8  | 22.5  |
| P4KE18   | 16.2              | 19.8 | 1.0          | 14.5                                       | 5.0  | 15.1  | 26.5  |
| P4KE18A  | 17.1              | 18.9 | 1.0          | 15.3                                       | 5.0  | 15.9  | 25.2  |
| P4KE20   | 18.0              | 22.0 | 1.0          | 16.2                                       | 5.0  | 13.7  | 29.1  |
| P4KE20A  | 19.0              | 21.0 | 1.0          | 17.1                                       | 5.0  | 14.4  | 27.7  |
| P4KE22   | 19.8              | 24.2 | 1.0          | 17.8                                       | 5.0  | 12.5  | 31.9  |
| P4KE22A  | 20.9              | 23.1 | 1.0          | 18.8                                       | 5.0  | 13.1  | 30.6  |
| P4KE24   | 21.6              | 26.4 | 1.0          | 19.4                                       | 5.0  | 11.5  | 34.7  |
| P4KE24A  | 22.8              | 25.2 | 1.0          | 20.5                                       | 5.0  | 12  | 33.2  |
| P4KE27   | 24.3              | 29.7 | 1.0          | 21.8                                       | 5.0  | 10.2  | 39.1  |
| P4KE27A  | 25.7              | 28.4 | 1.0          | 23.1                                       | 5.0  | 10.7  | 37.5  |
| P4KE30   | 27.0              | 33.0 | 1.0          | 24.3                                       | 5.0  | 9.2   | 43.5  |
| P4KE30A  | 28.5              | 31.5 | 1.0          | 25.6                                       | 5.0  | 9.7   | 41.4  |
| P4KE33   | 29.7              | 36.3 | 1.0          | 26.8                                       | 5.0  | 8.4   | 47.7  |
| P4KE33A  | 31.4              | 34.7 | 1.0          | 28.2                                       | 5.0  | 8.8   | 45.7  |
| P4KE36   | 32.4              | 39.6 | 1.0          | 29.1                                       | 5.0  | 7.7   | 52.0  |
| P4KE36A  | 34.2              | 37.8 | 1.0          | 30.8                                       | 5.0  | 8.0   | 49.9  |
| P4KE39   | 35.1              | 42.9 | 1.0          | 31.6                                       | 5.0  | 7.1   | 56.4  |
| P4KE39A  | 37.1              | 41.0 | 1.0          | 33.3                                       | 5.0  | 7.4   | 53.9  |
| P4KE43   | 38.7              | 47.3 | 1.0          | 34.8                                       | 5.0  | 6.5   | 61.9  |
| P4KE43A  | 40.9              | 45.2 | 1.0          | 36.8                                       | 5.0  | 6.7   | 59.3  |
| P4KE47   | 42.3              | 51.7 | 1.0          | 38.1                                       | 5.0  | 5.9   | 67.8  |
| P4KE47A  | 44.7              | 49.4 | 1.0          | 40.2                                       | 5.0  | 6.2   | 64.8  |
| P4KE51   | 45.9              | 56.1 | 1.0          | 41.3                                       | 5.0  | 5.4   | 73.5  |
| P4KE51A  | 48.5              | 53.6 | 1.0          | 43.6                                       | 5.0  | 5.7   | 70.1  |
| P4KE56   | 50.4              | 61.6 | 1.0          | 45.4                                       | 5.0  | 5.0   | 80.5  |
| P4KE56A  | 53.2              | 58.8 | 1.0          | 47.8                                       | 5.0  | 5.2   | 77.0  |

# TRANSIENT VOLTAGE SUPPRESSORS

## 400W SERIES TVS DIODES / DO-41 ( CASE 7 ) 400W

| TYPE     | Breakdown Voltage          |      | @I <sub>T</sub><br>(mA) | Reverse Stand off Voltage<br>V <sub>WM</sub><br>(Volts) | Maximum Reverse Leakage at V <sub>WM</sub><br>I <sub>D</sub> (uA) | Maximum Peak Pulse Current<br>I <sub>PPM</sub><br>(Amps) | Maximum Clamping Voltage at I <sub>PPM</sub><br>V <sub>C</sub> (Volts) |
|----------|----------------------------|------|-------------------------|---|---|--|--|
|          | V <sub>BR</sub><br>(Volts) |      |                         |   |   |  |  |
|          | MIN.                       | MAX. |                         |   |   |  |  |
| P4KE62   | 55.8                       | 68.2 | 1.0                     | 50.2  | 5.0   | 4.5  | 89.0   |
| P4KE62A  | 58.9                       | 65.1 | 1.0                     | 53.0  | 5.0   | 4.7  | 85.0   |
| P4KE68   | 61.2                       | 74.8 | 1.0                     | 55.1  | 5.0   | 4.1  | 98.0   |
| P4KE68A  | 64.6                       | 71.4 | 1.0                     | 58.1  | 5.0   | 4.3  | 92.0   |
| P4KE75   | 67.5                       | 82.5 | 1.0                     | 60.7  | 5.0   | 3.7  | 108  |
| P4KE75A  | 71.3                       | 78.8 | 1.0                     | 64.1  | 5.0   | 3.9  | 103  |
| P4KE82   | 73.8                       | 90.2 | 1.0                     | 66.4  | 5.0   | 3.4  | 118  |
| P4KE82A  | 77.9                       | 86.1 | 1.0                     | 70.1  | 5.0   | 3.5  | 113  |
| P4KE91   | 81.9                       | 100  | 1.0                     | 73.7  | 5.0   | 3.1  | 131  |
| P4KE91A  | 86.5                       | 95.5 | 1.0                     | 77.8  | 5.0   | 3.2  | 125  |
| P4KE100  | 90.0                       | 110  | 1.0                     | 81.0  | 5.0   | 2.8  | 144  |
| P4KE100A | 95.0                       | 105  | 1.0                     | 85.5  | 5.0   | 2.9  | 137  |
| P4KE110  | 99.0                       | 121  | 1.0                     | 89.2  | 5.0   | 2.5  | 158  |
| P4KE110A | 105                        | 116  | 1.0                     | 94.0  | 5.0   | 2.6  | 152  |
| P4KE120  | 108                        | 132  | 1.0                     | 97.2  | 5.0   | 2.3  | 173  |
| P4KE120A | 114                        | 126  | 1.0                     | 102   | 5.0   | 2.4  | 165  |
| P4KE130  | 117                        | 143  | 1.0                     | 105   | 5.0   | 2.1  | 187  |
| P4KE130A | 124                        | 137  | 1.0                     | 111   | 5.0   | 2.2  | 179  |
| P4KE150  | 135                        | 165  | 1.0                     | 121   | 5.0   | 1.9  | 215  |
| P4KE150A | 143                        | 158  | 1.0                     | 128   | 5.0   | 1.9  | 207  |
| P4KE160  | 144                        | 176  | 1.0                     | 130   | 5.0   | 1.7  | 230  |
| P4KE160A | 152                        | 168  | 1.0                     | 136   | 5.0   | 1.8  | 219  |
| P4KE170  | 153                        | 187  | 1.0                     | 138   | 5.0   | 1.6  | 244  |
| P4KE170A | 162                        | 179  | 1.0                     | 145   | 5.0   | 1.7  | 234  |
| P4KE180  | 162                        | 198  | 1.0                     | 146   | 5.0   | 1.6  | 258  |
| P4KE180A | 171                        | 189  | 1.0                     | 154   | 5.0   | 1.6  | 246  |
| P4KE200  | 180                        | 220  | 1.0                     | 162   | 5.0   | 1.4  | 287  |
| P4KE200A | 190                        | 210  | 1.0                     | 171   | 5.0   | 1.5  | 274  |
| P4KE220  | 198                        | 242  | 1.0                     | 175   | 5.0   | 1.2  | 344  |
| P4KE220A | 209                        | 231  | 1.0                     | 185   | 5.0   | 1.2  | 328  |
| P4KE250  | 225                        | 275  | 1.0                     | 202   | 5.0   | 1.1  | 360  |
| P4KE250A | 237                        | 263  | 1.0                     | 214   | 5.0   | 1.2  | 344  |
| P4KE300  | 270                        | 330  | 1.0                     | 243   | 5.0   | 0.93   | 430  |
| P4KE300A | 285                        | 315  | 1.0                     | 256   | 5.0   | 1.00   | 414  |
| P4KE350  | 315                        | 385  | 1.0                     | 284   | 5.0   | 0.79   | 504  |
| P4KE350A | 333                        | 368  | 1.0                     | 300   | 5.0   | 0.83   | 482  |
| P4KE400  | 360                        | 440  | 1.0                     | 324   | 5.0   | 0.70   | 574  |
| P4KE400A | 380                        | 420  | 1.0                     | 342   | 5.0   | 0.73   | 548  |
| P4KE440  | 396                        | 484  | 1.0                     | 356   | 5.0   | 0.63   | 631  |
| P4KE440A | 418                        | 462  | 1.0                     | 376   | 5.0   | 0.66   | 602  |

- Notes :
1. V<sub>BR</sub> measured after I<sub>T</sub> applied for 300ms. I<sub>T</sub> = square pulse or equivalent.
  2. For bidirectional use C or CA suffixs for all types (ex. P4KE6.8C,P4KE440CA) electrical characteristics apply in both directions.
  3. For bidirectional types having V<sub>WM</sub> of 10 volts and less, the I<sub>D</sub> limit is doubled.

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- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

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