

## FEATURES

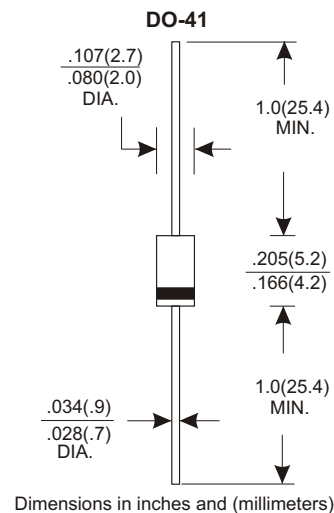
- \* 400 Watts Surge Capability at 1ms
- \* Excellent clamping capability
- \* Low zener impedance
- \* Fast response time: Typically less than 1.0ps from 0 volt to BV min.
- \* Typical  $I_R$  less than 1 A above 10V
- \* High temperature soldering guaranteed: 260°C / 10 seconds / .375"(9.5mm) lead length, 5lbs.(2.3kg) tension

## MECHANICAL DATA

- \* Case: Molded plastic
- \* Epoxy: UL 94V-0 rate flame retardant
- \* Lead: Axial leads, solderable per MIL-STD-202, method 208 guaranteed
- \* Polarity: Color band denotes cathode end
- \* Mounting position: Any
- \* Weight: 0.34 grams

## VOLTAGE RANGE

6.8 to 440 Volts  
400 Watts Peak Power  
1.0 Watts Steady State



## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

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

| RATINGS  | SYMBOL         | VALUE       | UNITS |
|--|----------------|-------------|-------|
| Peak Power Dissipation at $T_A=25^\circ\text{C}$ , $T_P=1\text{ms}$ (NOTE 1)                                 | $P_{PK}$       | Minimum 400 | Watts |
| Steady State Power Dissipation at $T_L=75^\circ\text{C}$<br>Lead Length .375"(9.5mm) (NOTE 2)                | $P_D$          | 1.0         | Watts |
| Peak Forward Surge Current at 8.3ms Single Half Sine-Wave superimposed on rated load (JEDEC method) (NOTE 3) | $I_{FSM}$      | 40          | Amps  |
| Operating and Storage Temperature Range  | $T_J, T_{STG}$ | -55 to +175 | °C    |

### NOTES:

1. Non-repetitive current pulse per Fig. 3 and derated above  $T_A=25^\circ\text{C}$  per Fig. 2.
2. Mounted on Copper Pad area of 1.6" X 1.6" (40mm X 40mm) per Fig.5.
3. 8.3ms single half sine-wave, duty cycle = 4 pulses per minute maximum.

## DEVICES FOR BIPOLAR APPLICATIONS

1. For Bidirectional use C or CA Suffix for types P4KE6.8 thru P4KE440.
2. Electrical characteristics apply in both directions.

## RATING AND CHARACTERISTIC CURVES (P4KE SERIES)

FIG.1-PEAK PULSE POWER DERATING CURVE

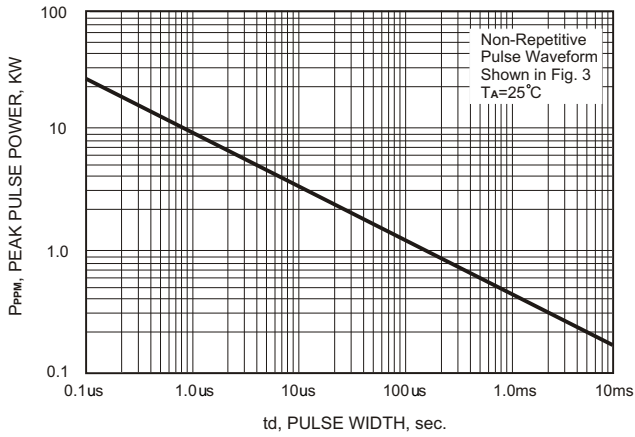


FIG.2-PULSE DERATING CURVE

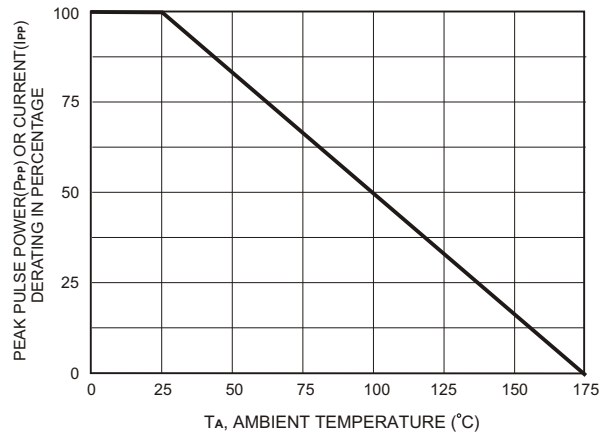


FIG.3-PULSE WAVE FORM

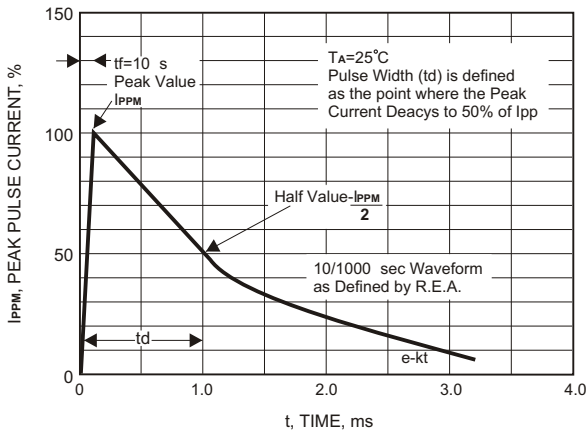


FIG.4-TYPICAL JUNCTION CAPACITANCE

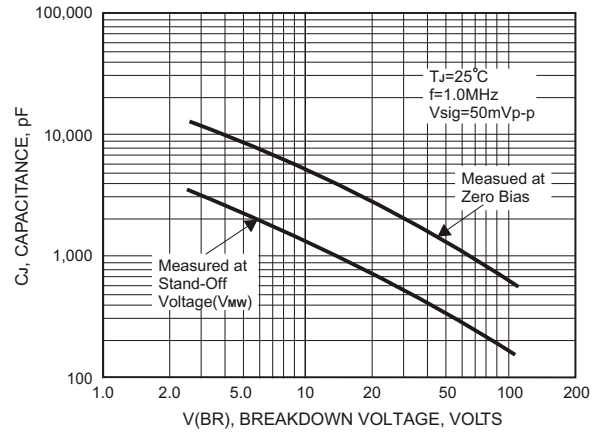


FIG.5-STEADY STATE POWER DERATING CURVE

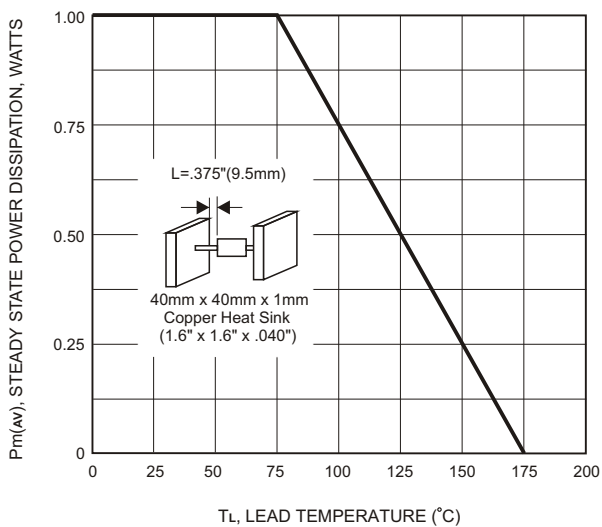
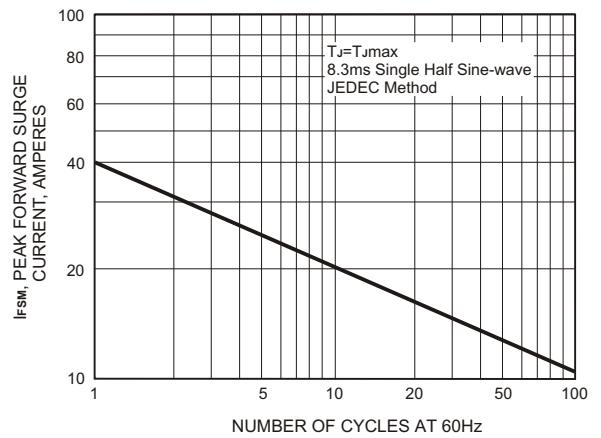


FIG.6-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT, UNIDIRECTIONAL



## 400 Watt Axial Lead TVS

| UNI DIRECTIONAL PART NUMBER | REVERSE STAND-OFF VOLTAGE VRWM (V) | BREAKDOWN VOLTAGE VBR (V) MIN. @IT | BREAKDOWN VOLTAGE VRB (V) MAX. @IT | TEST CURRENT IT (mA) | MAXIMUM CLAMPING VOLTAGE @Ipp Vc (V) | PEAK PULSE CURRENT Ipp (A) | REVERSE LEAKAGE @ VRWM IR( A) |
|-----------------------------|------------------------------------|------------------------------------|------------------------------------|----------------------|--------------------------------------|----------------------------|-------------------------------|
| P4KE6.8(C)A                 | 5.80                               | 6.45                               | 7.14                               | 10                   | 10.5                                 | 40.0                       | 1000                          |
| P4KE7.5(C)A                 | 6.40                               | 7.13                               | 7.88                               | 10                   | 11.3                                 | 37.0                       | 500                           |
| P4KE8.2(C)A                 | 7.02                               | 7.79                               | 8.61                               | 10                   | 12.1                                 | 35.0                       | 200                           |
| P4KE9.1(C)A                 | 7.78                               | 8.65                               | 9.50                               | 1                    | 13.4                                 | 31.0                       | 50                            |
| P4KE10(C)A                  | 8.55                               | 9.50                               | 10.50                              | 1                    | 14.5                                 | 29.0                       | 10                            |
| P4KE11(C)A                  | 9.40                               | 10.50                              | 11.60                              | 1                    | 15.6                                 | 27.0                       | 5                             |
| P4KE12(C)A                  | 10.20                              | 11.40                              | 12.60                              | 1                    | 16.7                                 | 25.0                       | 5                             |
| P4KE13(C)A                  | 11.10                              | 12.40                              | 13.70                              | 1                    | 18.2                                 | 23.0                       | 5                             |
| P4KE15(C)A                  | 12.80                              | 14.30                              | 15.80                              | 1                    | 21.2                                 | 20.0                       | 5                             |
| P4KE16(C)A                  | 13.60                              | 15.20                              | 16.80                              | 1                    | 22.5                                 | 19.0                       | 5                             |
| P4KE18(C)A                  | 15.30                              | 17.10                              | 18.90                              | 1                    | 25.2                                 | 17.0                       | 5                             |
| P4KE20(C)A                  | 17.10                              | 19.00                              | 21.00                              | 1                    | 27.7                                 | 15.0                       | 5                             |
| P4KE22(C)A                  | 18.80                              | 20.90                              | 23.10                              | 1                    | 30.6                                 | 14.0                       | 5                             |
| P4KE24(C)A                  | 20.50                              | 22.80                              | 25.20                              | 1                    | 33.2                                 | 13.0                       | 5                             |
| P4KE27(C)A                  | 23.10                              | 25.70                              | 28.40                              | 1                    | 37.5                                 | 11.0                       | 5                             |
| P4KE30(C)A                  | 25.60                              | 28.50                              | 31.50                              | 1                    | 41.4                                 | 10.0                       | 5                             |
| P4KE33(C)A                  | 28.20                              | 31.40                              | 34.70                              | 1                    | 45.7                                 | 9.0                        | 5                             |
| P4KE36(C)A                  | 30.80                              | 34.20                              | 37.80                              | 1                    | 49.9                                 | 8.4                        | 5                             |
| P4KE39(C)A                  | 33.30                              | 37.10                              | 41.00                              | 1                    | 53.9                                 | 7.8                        | 5                             |
| P4KE43(C)A                  | 36.80                              | 40.90                              | 45.20                              | 1                    | 59.3                                 | 7.1                        | 5                             |
| P4KE47(C)A                  | 40.20                              | 44.70                              | 49.40                              | 1                    | 64.8                                 | 6.4                        | 5                             |
| P4KE51(C)A                  | 43.60                              | 48.50                              | 53.60                              | 1                    | 70.1                                 | 6.0                        | 5                             |
| P4KE56(C)A                  | 47.80                              | 53.20                              | 58.80                              | 1                    | 77.0                                 | 5.5                        | 5                             |
| P4KE62(C)A                  | 53.00                              | 58.90                              | 65.10                              | 1                    | 85.0                                 | 5.0                        | 5                             |
| P4KE68(C)A                  | 58.10                              | 64.60                              | 71.40                              | 1                    | 92.0                                 | 4.6                        | 5                             |
| P4KE75(C)A                  | 64.10                              | 71.30                              | 78.80                              | 1                    | 103.0                                | 4.1                        | 5                             |

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|-----------------------------|------------------------------------|------------------------------------|------------------------------------|----------------------|--------------------------------------|----------------------------|-------------------------------|
| P4KE82(C)A                  | 70.10                              | 77.90                              | 86.10                              | 1                    | 113.0                                | 3.7                        | 5                             |
| P4KE91(C)A                  | 77.80                              | 86.50                              | 95.50                              | 1                    | 125.0                                | 3.4                        | 5                             |
| P4KE100(C)A                 | 85.50                              | 95.00                              | 105.00                             | 1                    | 137.0                                | 3.1                        | 5                             |
| P4KE110(C)A                 | 94.00                              | 105.00                             | 116.00                             | 1                    | 152.0                                | 2.8                        | 5                             |
| P4KE120(C)A                 | 102.00                             | 114.00                             | 126.00                             | 1                    | 165.0                                | 2.5                        | 5                             |
| P4KE130(C)A                 | 111.00                             | 124.00                             | 137.00                             | 1                    | 179.0                                | 2.3                        | 5                             |
| P4KE150(C)A                 | 128.00                             | 143.00                             | 158.00                             | 1                    | 207.0                                | 2.0                        | 5                             |
| P4KE160(C)A                 | 136.00                             | 152.00                             | 168.00                             | 1                    | 219.0                                | 1.9                        | 5                             |
| P4KE170(C)A                 | 145.00                             | 162.00                             | 179.00                             | 1                    | 234.0                                | 1.8                        | 5                             |
| P4KE180(C)A                 | 154.00                             | 171.00                             | 189.00                             | 1                    | 246.0                                | 1.7                        | 5                             |
| P4KE200(C)A                 | 171.00                             | 190.00                             | 210.00                             | 1                    | 274.0                                | 1.5                        | 5                             |
| P4KE220(C)A                 | 185.00                             | 209.00                             | 231.00                             | 1                    | 328.0                                | 1.3                        | 5                             |
| P4KE250(C)A                 | 214.00                             | 237.00                             | 263.00                             | 1                    | 344.0                                | 1.2                        | 5                             |
| P4KE300(C)A                 | 256.00                             | 285.00                             | 315.00                             | 1                    | 414.0                                | 1.0                        | 5                             |
| P4KE350(C)A                 | 300.00                             | 332.00                             | 368.00                             | 1                    | 482.0                                | 0.8                        | 5                             |
| P4KE400(C)A                 | 342.00                             | 380.00                             | 420.00                             | 1                    | 548.0                                | 0.7                        | 5                             |
| P4KE440(C)A                 | 376.00                             | 418.00                             | 462.00                             | 1                    | 600.0                                | 0.6                        | 5                             |