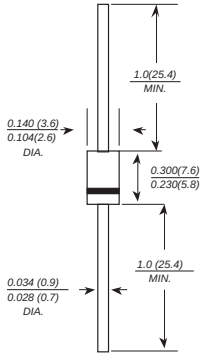
# P6KE250 THRU P6KE440CA

## GLASS PASSIVAED JUNCTION TRANSIENT VOLTAGE SUPPRESSOR

Breakdown Voltage:6.8-440 Volts Peak Pulse Power:600 Watts

**DO-15**




*Dimensions in inches and (millimeters)*

## FEATURE

- 600w peak pulse power capability
- Excellent clamping capability
- Low incremental surge resistance
- Fast response time:typically less than 1.0ps from 0v to $V_{BR}$ for unidirectional and 5.0ns ror bidirectional types.
- High temperature soldering guaranteed: 265℃/10S/9.5mm lead length at 5 lbs tension

## MECHANICAL DATA

**Case:** JEDEC DO-15 molded plastic body over passivated junction
**Terminals**: Plated axial leads, solderable per MIL-STD 750, method 2026
**Polarity**: Color band denotes cathode except for bidirectional types
**Mounting Position**: Any
**Weight**: 0.014 ounce,0.40 grams

## DEVICES FOR BIDIRECTIONAL APPLICATIONS

For bidirectional use suffix C or CA for types P6KE6.8 thru P6KE440 (e.g. P6KE6.8CA,P6KE440CA)
Electrical characteristics apply in both directions.

## MAXIMUM RATINGS AND CHARACTERISTICS

Ratings at 25℃ ambient temperature unless otherwise specified.

| | *SYMBOLS* | *VALUE* | *UNITS* |
|---|---|---|---|
| Peak power dissipation (Note 1) | Pppm | Minimum 600 | Watts |
| Peak pulse reverse current (Note 1, Fig.3) | Ippm | See Table 1 | Amps |
| Steady state power dissapation (Note 2) | $P_{M(AV)}$ | 5.0 | Watts |
| Peak forward surge current (Note 3) | $I_{FSM}$ | 100 | Amps |
| Maximum instantaneous forward voltage at 50A for unidirectional only (Note 4) | $V_F$ | 3.5/5.0 | Volts |
| Operating junction and storage temperature range | $T_{STG}$,$T_J$ | -55 to + 175 | °C |

**Notes:**

**1.**10/1000ms waveform non-repetitive current pulse,per Fig.3 and derated above Ta=25℃ per Fig.2
**2.**$T_L$=75℃,lead lengths 9.5mm,Mounted on copper pad atea of (40x40mm)Fig.5
**3.**Measured on 8.3ms single half sine-wave or equivalent square wave,duty cycle=4 pulses per minute maximum.
**4.**VF=3.5V max.for devices of $V_{(BR)}$≤200V,and VF=5.0V max.for devices of $V_{(BR)}$>200V

## ELECTRICAL CHARACTERISTICS (at TA=25 C unless otherwise noted)

| Device Type | Breakdown Voltage $V_{(BR)}$ (Volts)(NOTES 1) | | Test Current $I_T$(mA) | Stand-off Voltage $V_{WM}$ (Volts) | Maximum Reverse Leakage atVWM $I_{D(NOTE3)}$(mA) | Maximum Peak Puls Reverse Current $I_{PPM(NOTE2)}$ (Amps) | Maximum Clamping Voltage at $I_{PPM}$ Vc(Volts) | Maximum Temperature Coefficient of $V_{(BR)}$ (%/°C) |
|---|---|---|---|---|---|---|---|---|
| | MIN | MAX | | | | | | |
| P6KE250 | 225 | 275 | 1.0 | 202 | 5.0 | 1.7 | 360 | 0.110 |
| P6KE250A | 237 | 263 | 1.0 | 214 | 5.0 | 1.7 | 344 | 0.110 |
| P6KE300 | 270 | 330 | 1.0 | 243 | 5.0 | 1.4 | 430 | 0.110 |
| P6KE300A | 285 | 315 | 1.0 | 256 | 5.0 | 1.4 | 414 | 0.110 |
| P6KE350 | 315 | 385 | 1.0 | 284 | 5.0 | 1.2 | 504 | 0.110 |
| P6KE350A | 332 | 368 | 1.0 | 300 | 5.0 | 1.2 | 482 | 0.110 |
| P6KE400 | 360 | 440 | 1.0 | 324 | 5.0 | 1.0 | 574 | 0.110 |
| P6KE400A | 380 | 420 | 1.0 | 342 | 5.0 | 1.1 | 548 | 0.110 |
| P6KE440 | 396 | 484 | 1.0 | 356 | 5.0 | 0.95 | 631 | 0.110 |
| P6KE440A | 418 | 462 | 1.0 | 376 | 5.0 | 1.0 | 602 | 0.110 |

**NOTES:**

1. $V_{(BR)}$measured after $I_T$ applied for 300ms,$I_T$=square wave pulse or equivalent
2. Surge current waveform per Fig.3 and derated per Fig.2
3. For bidirectional types having $V_{WM}$ of 10 volts and less,the $I_D$ linit is doubled
4. All items and symbols are consistent with ANSI/IEEE C62.35

## RATINGS AND CHARACTERISTIC CURVES P6KE250THUR P6KE440CA

FIG. 1-PEAK PULSE POWER RATING CURVE

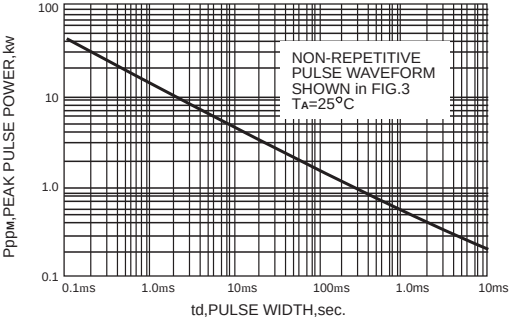



FIG. 2-PULSE DERATING CURVE

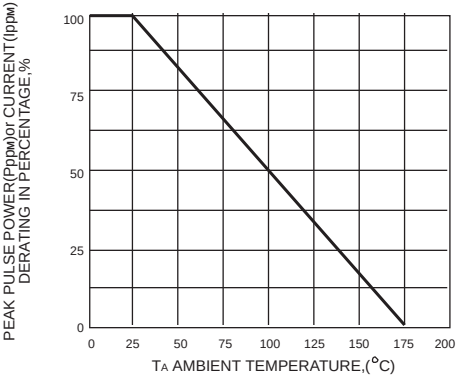



FIG.3-PULSE WAVEFORM

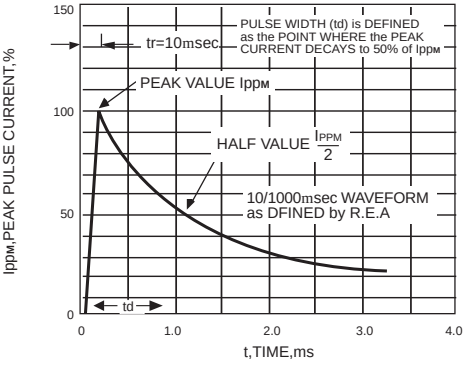



FIG. 4-TYPICAL JUNCTIONAL CAPACITANCE UNIDIRECTIONAL

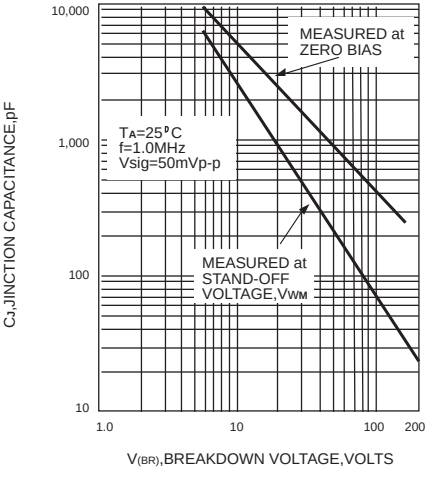



FIG.5-STEADY STATE POWER DERATING CURVE

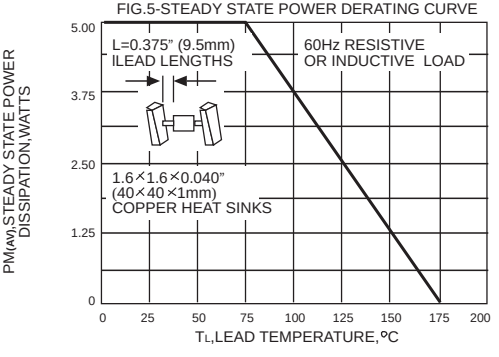
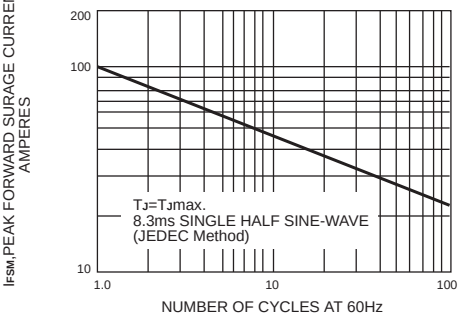



FIG.6-MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT UNIDIRECTIONAL ONLY



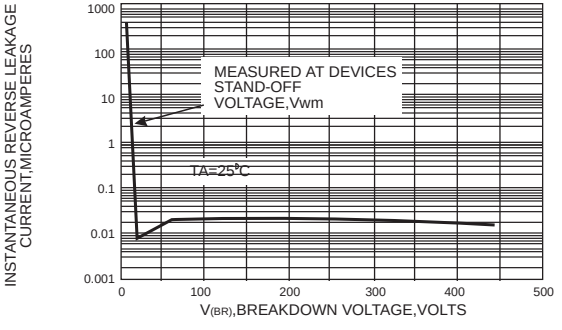


FIG.7-TYPICAL REVERSE LEAKAGE CHARCTERISTICS