P6KE200B

600 Watt Peak Power Transient Voltage Suppressors

Unidirectional*

The P6KE200B is designed to protect voltage sensitive components from high voltage, high energy transients. They have excellent clamping capability, high surge capability, low zener impedance and fast response time. These devices are ON Semiconductor's exclusive, cost-effective, highly reliable Surmetic™ axial leaded package and is ideally-suited for use in communication systems, numerical controls, process controls, medical equipment, business machines, power supplies and many other industrial/consumer applications.

Specification Features:

- Working Peak Reverse Voltage Range – 171 V
- Peak Power – 600 Watts @ 1.0 ms
- ESD Rating of Class 3 (>16 KV) per Human Body Model
- Maximum Clamp Voltage @ Peak Pulse Current
- Low Leakage < 5.0 μA above 171 V
- Maximum Temperature Coefficient Specified
- UL 497B for Isolated Loop Circuit Protection
- Response Time is typically < 1.0 ns

Mechanical Characteristics:

CASE: Void-free, Transfer-molded, Thermosetting plastic
FINISH: All external surfaces are corrosion resistant and leads are readily solderable
MAXIMUM LEAD TEMPERATURE FOR SOLDERING:
230°C, 1/16″ from the case for 10 seconds
POLARITY: Cathode indicated by polarity band
MOUNTING POSITION: Any

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Peak Power Dissipation (Note 1) @ $T_L \le 25°C$	P_{PK}	600	Watts
Steady State Power Dissipation @ $T_L \le 75°C$, Lead Length = 3/8″	P_D	5.0	Watts
Derated above $T_L = 75°C$		50	mW/°C
Thermal Resistance, Junction–to–Lead	$R_{\theta JL}$	15	°C/W
Forward Surge Current (Note 2) @ $T_A = 25°C$	I_{FSM}	100	Amps
Operating and Storage Temperature Range	T_J, T_{stg}	– 55 to +150	°C

1. Nonrepetitive current pulse per Figure 3 and derated above $T_A = 25°C$ per Figure 2.
2. 1/2 sine wave (or equivalent square wave), PW = 8.3 ms, duty cycle = 4 pulses per minute maximum.

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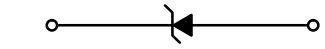

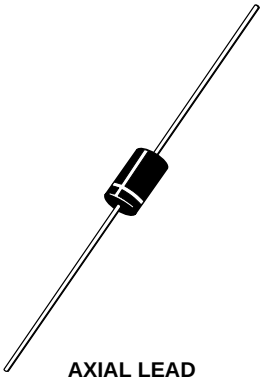

AXIAL LEAD
CASE 59–09
PLASTIC

L = Assembly Location
P6KE200B = Device Code
YY = Year
WW = Work Week

ORDERING INFORMATION

Device	Package	Shipping
P6KE200B	Axial Lead	1000 Units/Box
P6KE200BRL	Axial Lead	5000 Tape & Reel

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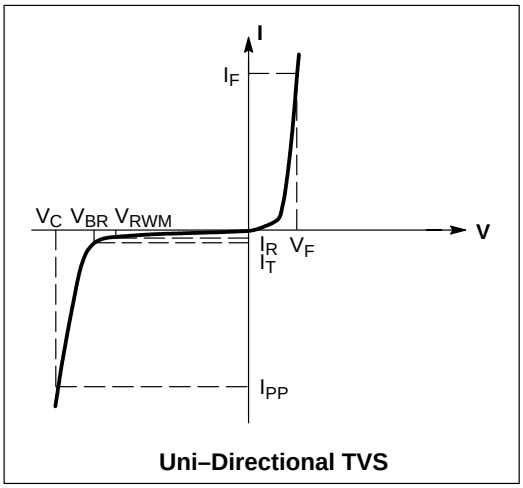
ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted, V_F = 3.5 V Max. @ I_F (Note 6) = 50 A)

Symbol	Parameter
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
V_{RWM}	Working Peak Reverse Voltage
I_R	Maximum Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
ΘV_{BR}	Maximum Temperature Coefficient of V_{BR}
I_F	Forward Current
V_F	Forward Voltage @ I_F



Uni–Directional TVS

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted, V_F = 3.5 V Max. @ I_F (Note 6) = 50 A)

Device	Device Marking	V_{RWM} (Note 3)	I_R @ V_{RWM}	Breakdown Voltage				V_C @ I_{PP} (Note 5)		ΘV_{BR}
				V_{BR} (Note 4) (Volts)			@ I_T	V_C	I_{PP}	
		Volts	μA	Min	Nom	Max	mA	Volts	A	%/°C
P6KE200B	P6KE200B	171	5	190	200	210	1	274	2.2	0.108

3. A transient suppressor is normally selected according to the maximum working peak reverse voltage (V_{RWM}), which should be equal to or greater than the dc or continuous peak operating voltage level.
4. V_{BR} measured at pulse test current I_T at an ambient temperature of 25°C.
5. Surge current waveform per Figure 3 and derate per Figures 1 and 2.
6. 1/2 sine wave (or equivalent square wave), PW = 8.3 ms, duty cycle = 4 pulses per minute maximum.

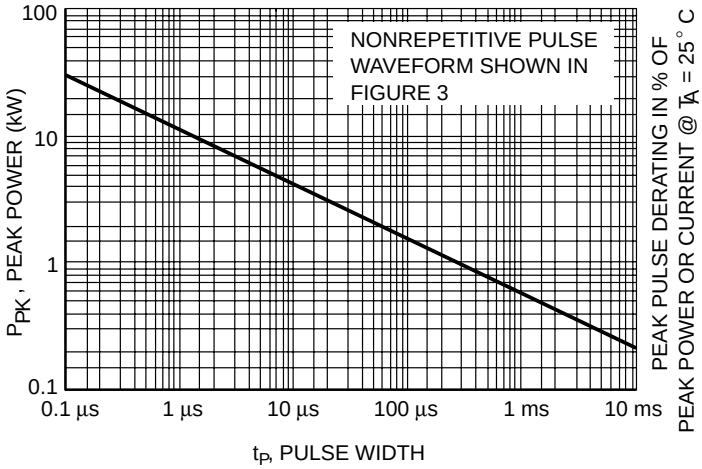


Figure 1. Pulse Rating Curve

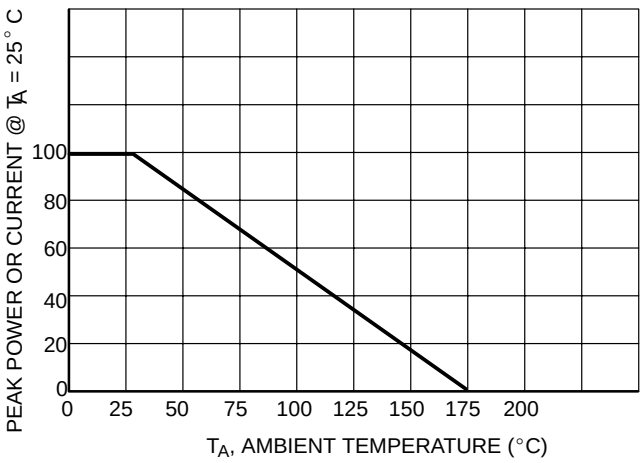


Figure 2. Pulse Derating Curve

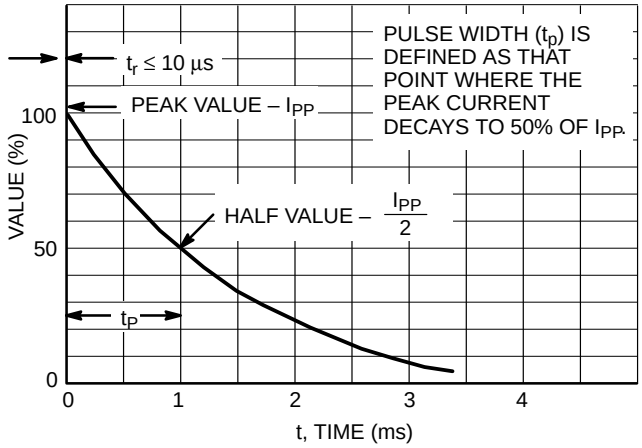


Figure 3. Pulse Waveform

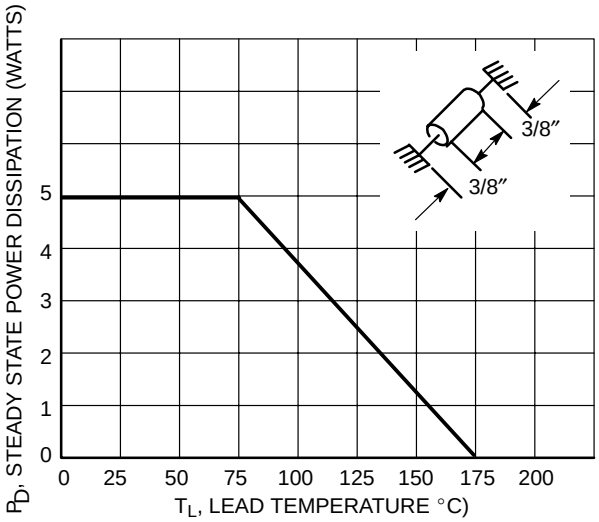


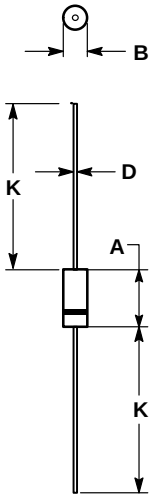
Figure 4. Steady State Power Derating

OUTLINE DIMENSIONS

Transient Voltage Suppressors – Axial Leaded

600 Watt Peak Power

AXIAL LEAD
CASE 59–09
ISSUE R



NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. 59–04 OBSOLETE, NEW STANDARD 59–09.
4. 59–03 OBSOLETE, NEW STANDARD 59–10.
5. ALL RULES AND NOTES ASSOCIATED WITH JEDEC DO–41 OUTLINE SHALL APPLY.
6. POLARITY DENOTED BY CATHODE BAND.
7. LEAD DIAMETER NOT CONTROLLED WITHIN F DIMENSION.

	INCHES		MILLIMETERS	
DIM	MIN	MAX	MIN	MAX
A	0.228	0.299	5.80	7.60
B	0.102	0.142	2.60	3.60
D	0.028	0.034	0.71	0.86
K	1.000	---	25.44	---

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