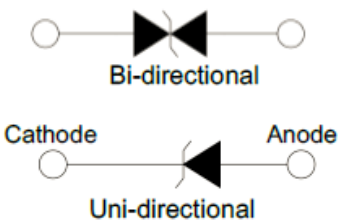


Description

The P6KE series is designed specifically to protect sensitive electronic equipment from voltage transients induced by lightning and other transient voltage events.

Device Schematic



Device Schematic

Device Schematic



Features

- * Peak power dissipation 600W @10 x 1000 us Pulse
- * Low profile package.
- * Excellent clamping capability.
- * Glass passivated junction.
- * Fast response time: typically less than 1ps from 0 Volts to BV min
- * Typical I_R less than 1uA when V_{BR} min above 12V.
- * IEC 61000-4-2 ESD 30KV(Air), 30KV(Contact)
- * ESD protection of data lines in accordance with IEC 61000-4-2
- * EFT protection of data lines in accordance with IEC 61000-4-4
- * RoHS compliant
- * Lead-free finish
- * CASE: DO-204AC (DO-15) Molded Plastic
- * Mounting Position: Any
- * Polarity: by cathode band denotes uni-directional device, none cathode band denotes bi-directional device.
- * Terminal: Solder plated

Application

TVS devices are ideal for the protection of I/O interfaces, V_{cc} , V_{bus} and other vulnerable circuits used in Telecom, Computer, Industrial and Consumer electronic applications.

Ordering Information

Part Number	Packaging	Reel Size
P6KE SERIES	2000	Box

Electrical Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Units
Peak Pulse Power Dissipation on 10/1000 us Waveform(Note1,FIG.1)	PPPM	Min 600	W
Power Dissipation on Infinite Heat Sink at $T_L=75^{\circ}\text{C}$	PD	5.0	W
Peak Pulse Current of on 10/1000 us Waveform(Note1,FIG.3)	IPPM	See Table 1	A
Peak Pulse Current of on 10/1000us Waveform (Note 2)	LFSM	100	A
Operation Junction Temperature Range	TJ	-50 to 150	$^{\circ}\text{C}$
Storage Temperature Range	TSTG	-50 to 150	$^{\circ}\text{C}$

Notes:

1. Non-repetitive current pulse, per Fig.3 and derated above $T_A=25^{\circ}\text{C}$ per Fig.2.
2. Measured on 8.3ms single half sine-wave, or equivalent square wave, for Unidirectional device only.

Electrical Specification ($T_A=25@25^{\circ}\text{C}$ unless otherwise specified)

Part Number		Reverse Stand-Off Voltage	Breakdown Voltage Min. @IT	Breakdown Voltage Max. @ IT	Test Current	Maximum Clamping Voltage @IPP	Peak Pulse Current	Reverse Leakage @VRMW
(Uni)	(Bi)	$V_{RMW}(V)$	$V_{BR\ MIN}(V)$	$V_{BR\ MAX}(V)$	$I_T (mA)$	$V_C(V)$	$I_{PP}(A)$	$I_{PP}(A)$
P6KE6.8A	P6KE6.8CA	5.80	6.45	7.14	10	10.5	58.1	1000
P6KE7.5A	P6KE7.5CA	6.4	7.13	7.88	10	11.3	54.0	500
P6KE8.2A	P6KE8.2CA	7.02	7.79	8.61	10	12.1	50.4	200
P6KE9.1A	P6KE9.1CA	7.78	8.65	9.55	1	13.4	45.5	50
P6KE10A	P6KE10CA	8.55	9.50	10.50	1	14.5	42.1	10
P6KE11A	P6KE11CA	9.4	10.50	11.60	1	15.6	39.1	5
P6KE12A	P6KE12CA	10.20	11.40	12.60	1	16.7	36.5	5
P6KE13A	P6KE13CA	11.10	12.40	13.70	1	18.2	33.5	1
P6KE15A	P6KE15CA	12.80	14.30	15.80	1	21.2	28.8	1
P6KE16A	P6KE16CA	13.60	15.20	16.80	1	22.5	27.1	1
P6KE18A	P6KE18CA	15.30	17.10	18.90	1	25.2	24.2	1
P6KE20A	P6KE20CA	17.10	19.00	21.00	1	27.7	22.0	1

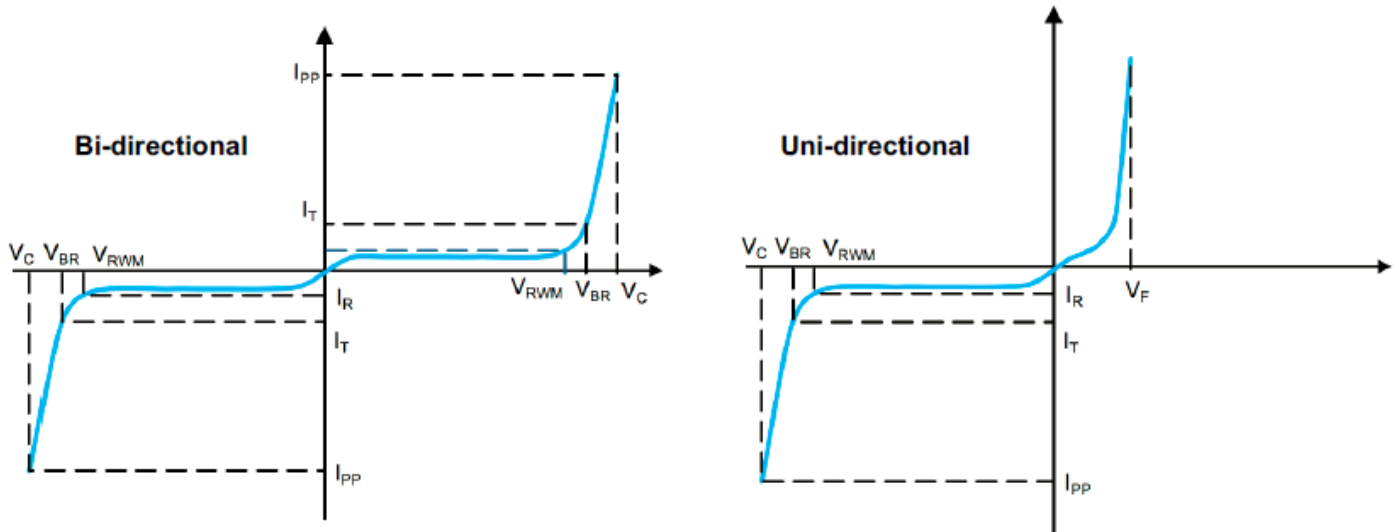
- * For Bi-directional type having V_{RWM} of 10 Volts and less, the I_R limit is double.
- * For parts without A, the V_{BR} is $\pm 10\%$ and V_C is 5% higher than with A parts.

Electrical Characteristics ($T_A=25^\circ\text{C}$ unless otherwise specified)

Part Number		Reverse Stand-Off Voltage	Breakdown Voltage Min. @IT	Breakdown Voltage Max. @ IT	Test Current	Maximum Clamping Voltage @IPP	Peak Pulse Current	Reverse Leakage @VRMW
(Uni)	(Bi)	$V_{RMW}(V)$	$V_{BR\ MIN}(V)$	$V_{BR\ MAX}(V)$	IT (mA)	$V_C(V)$	$I_{PP}(A)$	$I_{PP}(A)$
P6KE22A	P6KE22CA	18.80	20.90	23.10	1	30.6	19.9	1
P6KE24A	P6KE24CA	20.50	22.80	25.20	1	33.2	18.4	1
P6KE27A	P6KE27CA	23.10	25.70	28.40	1	37.5	16.3	1
P6KE30A	P6KE30CA	25.60	28.50	31.50	1	41.4	14.7	1
P6KE33A	P6KE33CA	28.20	31.40	34.70	1	45.7	13.3	1
P6KE36A	P6KE36CA	30.80	34.20	37.80	1	49.9	12.2	1
P6KE39A	P6KE39CA	33.30	37.10	41.00	1	53.9	11.3	1
P6KE43A	P6KE43CA	36.80	40.90	45.20	1	59.3	10.3	1
P6KE47A	P6KE47CA	40.20	44.70	49.40	1	64.8	9.4	1
P6KE51A	P6KE51CA	43.60	48.50	53.60	1	70.1	8.7	1
P6KE56A	P6KE56CA	47.80	53.20	58.80	1	77.0	7.9	1
P6KE62A	P6KE62CA	53.00	58.90	65.10	1	85.0	7.2	1
P6KE68A	P6KE68CA	58.10	64.60	71.40	1	92.0	6.6	1
P6KE75A	P6KE75CA	64.10	71.30	78.80	1	103.0	5.9	1
P6KE82A	P6KE82CA	70.10	77.90	86.10	1	113.0	5.4	1
P6KE91A	P6KE91CA	77.80	86.50	95.50	1	125.0	4.9	1
P6KE100A	P6KE100CA	85.50	95.00	105.00	1	137.0	4.5	1
P6KE110A	P6KE110CA	94.00	105.00	116.00	1	152.0	4.0	1
P6KE120A	P6KE120CA	102.00	114.00	126.00	1	165.0	3.7	1
P6KE130A	P6KE130CA	111.00	124.00	137.00	1	179.0	3.4	1
P6KE150A	P6KE150CA	128.00	143.00	158.00	1	207.0	2.9	1
P6KE160A	P6KE160CA	136.00	152.00	168.00	1	219.0	2.8	1
P6KE170A	P6KE170CA	145.00	162.00	179.00	1	234.0	2.6	1
P6KE180A	P6KE180CA	154.00	171.00	189.00	1	246.0	2.5	1
P6KE200A	P6KE200CA	171.00	190.00	210.00	1	274.0	2.2	1
P6KE220A	P6KE220CA	185.00	209.00	231.00	1	328.0	1.9	1
P6KE250A	P6KE250CA	214.00	237.00	263.00	1	344.0	1.8	1
P6KE300A	P6KE300CA	256.00	285.00	315.00	1	414.0	1.5	1
P6KE350A	P6KE350CA	300.00	332.00	368.00	1	482.0	1.3	1
P6KE400A	P6KE400CA	342.00	380.00	420.00	1	548.0	1.1	1
P6KE440A	P6KE440CA	376.00	418.00	460.00	1	602.0	1.0	1
P6KE480A	P6KE480CA	408.00	456.00	504.00	1	658.0	0.9	1

P6KE SERIES

IV Curve Characteristics



PPPM Peak Pulse Power Dissipation - Max power dissipation

VRWM Reverse Stand-off Voltage - Maximum voltage that can be applied to TVS without operation

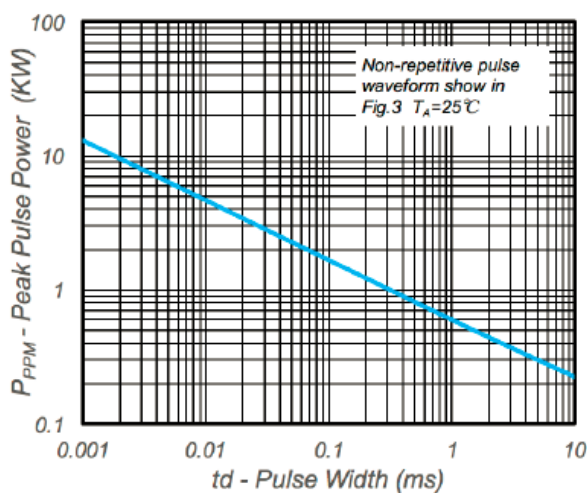
VBR Breakdown Voltage – Maximum voltage that flows through the TVS at a specified current (I_T)

VC Clamping Voltage – Peak voltage measured across the TVS at a specified IPPM (peak impulse current)

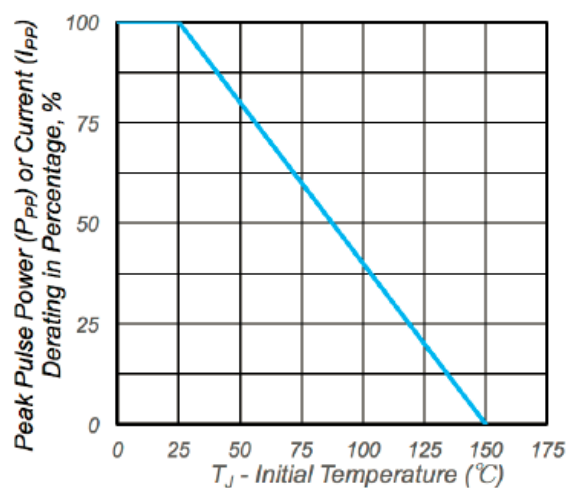
IR Reverse Leakage Current – Current measured at VR

VF Forward Voltage Drop for Uni-directional

Typical Performance Characteristics ($T_A=25^\circ\text{C}$ unless otherwise Specified)

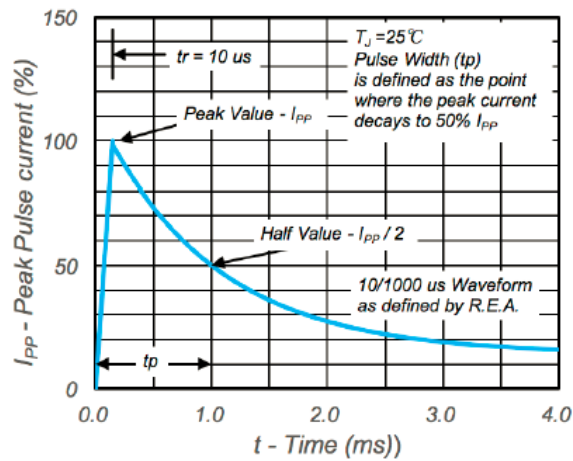


Peak Pulse Power Rating

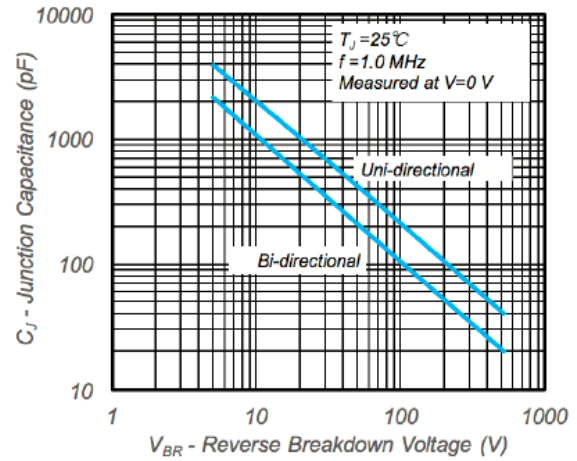


Pulse Derating Curve

Typical Performance Characteristics ($T_A=25^\circ\text{C}$ unless otherwise Specified)

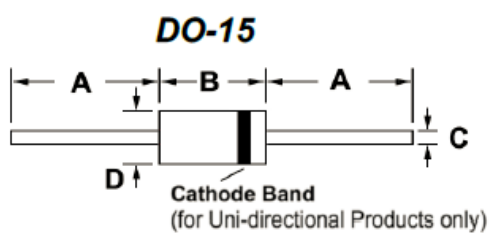


Pulse Waveform



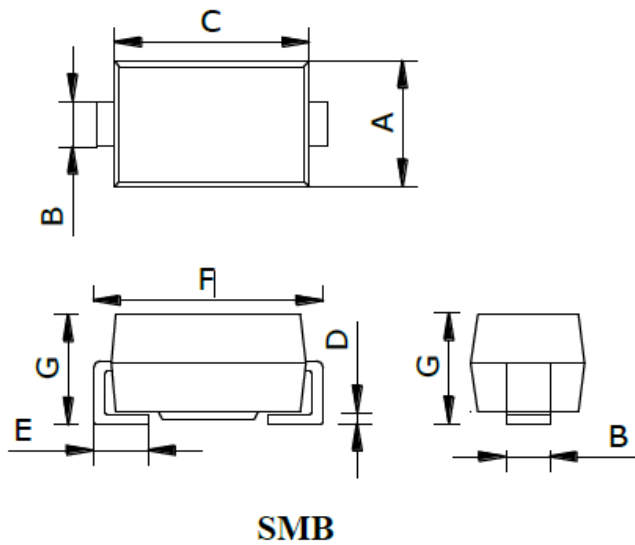
Typical Junction Capacitance

SOT-563 Package Outline Drawing



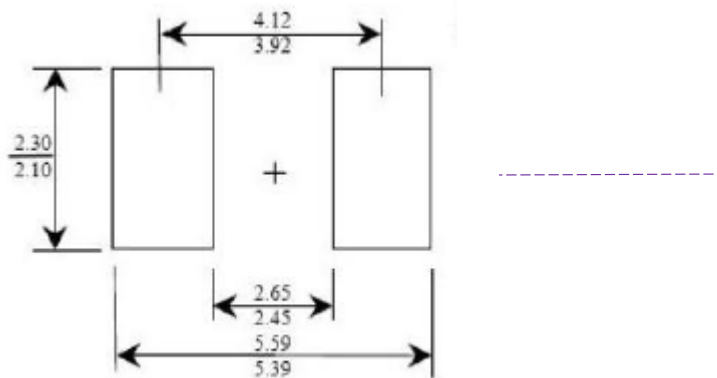
REF.	DIMENSIONS			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	25.4	---	1.000	---
B	5.80	7.62	0.230	0.300
C	0.70	0.90	0.028	0.034
D	2.60	3.60	0.104	0.140

DO-214AA (SMB) Package Outline Drawing (Dimensions in millimeters)



DIM	Millimeters			Inches		
	Min	Nom	Max	Min	Nom	Max
A	3.30	3.60	3.94	0.130	0.142	0.155
B	1.80	2.00	2.21	0.071	0.079	0.087
C	4.05	4.45	5.30	0.159	0.175	0.209
D	0.051	0.20	0.203	0.002	0.007	0.008
E	0.76	1.14	1.52	0.030	0.045	0.060
F	5.08	5.25	5.59	0.200	0.207	0.220
G	2.05	2.30	2.45	0.081	0.091	0.096

Suggested Land Pattern



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