

SURGiNG

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Transient Voltage Suppressor

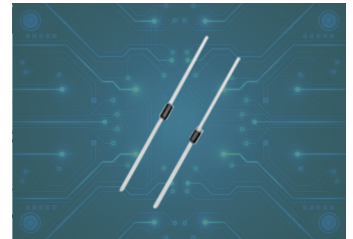
瞬态抑制二极管

P6KE Series

Transient Voltage Suppressors - P6KE Series

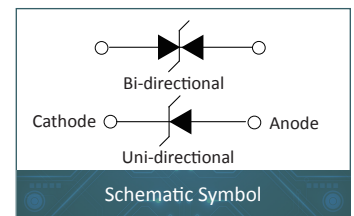
1. FEATURES

- Plastic package
- Glass passivated chip junction in DO-15 Package
- 600W peak pulse power capability on 10/1000us waveform
- Excellent clamping capability
- Low zener impedance
- Fast response time: typically less than 1.0ps from 0 Volts to BV min
- Typical IR less than 1uA above 12V



2. MECHANICAL DESIGN

- Case: JEDEC DO-15 Molded Plastic
- Terminals: Axial leads, solderable per MIL-STD-750, Method 2026
- Polarity: Color band denoted cathode except bidirectional
- Mounting Position: Any



3. MAXIMUM RATINGS (T_A = 25°C)

Symbol	Parameter	Value	Unit
P _{PPM}	Peak Pulse Power Dissipation on 10/1000us waveform (Note1, Note2)	600	Watts
I _{PPM}	Peak Pulse Current of on 10/1000us waveform (Note1)	See Table	Amps
P _{M(AV)}	Steady State Power Dissipation at T _A = 50°C (Note2)	5.0	Watts
V _F	Maximum Instantaneous Forward Voltage at 50A for Unidirectional Only (Note4)	3.5/5.0	Volts
I _{FSM}	Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed on Rated Load, (JEDEC Method) (Note 3)	100	Amps
T _J	Operating Junction Temperature	-55 to +150	°C
T _S	Storage Temperature Range	-55 to +150	°C
R _{θJA}	Junction to Ambient on printed circuit	75	°C/W

Notes:

1. Non-repetitive current pulse, T_A = 25°C
2. Mounted on 8.0mm x 8.0mm (0.03mm thick) Copper Pads to each terminal
3. 8.3ms single half sine-wave, or equivalent square wave for unidirectional device only, Duty cycle=4 pulses per minutes maximum
4. V_F < 3.5V for V_{BR} < 200V and V_F < 5.0V for V_{BR} > 201V

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4. ELECTRICAL CHARACTERISTICS ($T_A=25^{\circ}\text{C}$)

Part Number		Marking Code		Reverse Stand-off Voltage	Breakdown Voltage Min. @ I_T	Breakdown Voltage Max. @ I_T	Test Current	Maximum Clamping Voltage @ I_{PP}	Peak Pulse Current	Maximum Reverse Leakage @ V_{RWM}
UNI	BI	UNI	BI	$V_R(V)$	$V_B(V)$	$V_B(V)$	$I_T(mA)$	$V_C(V)$	$I_{PP}(A)$	$I_R(\mu A)$
P6KE6.8A	P6KE6.8CA	P6KE6.8A	P6KE6.8CA	5.8	6.45	7.14	10.0	10.5	58.1	1000.0
P6KE7.5A	P6KE7.5CA	P6KE7.5A	P6KE7.5CA	6.4	7.13	7.88	10.0	11.3	54.0	500.0
P6KE8.2A	P6KE8.2CA	P6KE8.2A	P6KE8.2CA	7.02	7.79	8.61	10.0	12.1	50.4	200.0
P6KE9.1A	P6KE9.1CA	P6KE9.1A	P6KE9.1CA	7.78	8.65	9.55	1.0	13.4	45.5	50.0
P6KE10A	P6KE10CA	P6KE10A	P6KE10CA	8.55	9.5	10.5	1.0	14.5	42.1	10.0
P6KE11A	P6KE11CA	P6KE11A	P6KE11CA	9.4	10.5	11.6	1.0	15.6	39.1	5.0
P6KE12A	P6KE12CA	P6KE12A	P6KE12CA	10.2	11.4	12.6	1.0	16.7	36.5	5.0
P6KE13A	P6KE13CA	P6KE13A	P6KE13CA	11.1	12.4	13.7	1.0	18.2	33.5	1.0
P6KE15A	P6KE15CA	P6KE15A	P6KE15CA	12.8	14.3	15.8	1.0	21.2	28.8	1.0
P6KE16A	P6KE16CA	P6KE16A	P6KE16CA	13.6	15.2	16.8	1.0	22.5	27.1	1.0
P6KE18A	P6KE18CA	P6KE18A	P6KE18CA	15.3	17.1	18.9	1.0	25.5	24.2	1.0
P6KE20A	P6KE20CA	P6KE20A	P6KE20CA	17.1	19.0	21.0	1.0	27.7	22.0	1.0
P6KE22A	P6KE22CA	P6KE22A	P6KE22CA	18.8	20.9	23.1	1.0	30.6	19.9	1.0
P6KE24A	P6KE24CA	P6KE24A	P6KE24CA	20.5	22.8	25.2	1.0	33.2	18.4	1.0
P6KE27A	P6KE27CA	P6KE27A	P6KE27CA	23.1	25.7	28.4	1.0	37.5	16.3	1.0
P6KE30A	P6KE30CA	P6KE30A	P6KE30CA	25.6	28.5	31.5	1.0	41.4	14.7	1.0
P6KE33A	P6KE33CA	P6KE33A	P6KE33CA	28.2	31.4	34.7	1.0	45.7	13.3	1.0
P6KE36A	P6KE36CA	P6KE36A	P6KE36CA	30.8	34.2	37.8	1.0	49.9	12.2	1.0
P6KE39A	P6KE39CA	P6KE39A	P6KE39CA	33.3	37.1	41.0	1.0	53.9	11.3	1.0
P6KE43A	P6KE43CA	P6KE43A	P6KE43CA	36.8	40.9	45.2	1.0	59.3	10.3	1.0
P6KE47A	P6KE47CA	P6KE47A	P6KE47CA	40.2	44.7	49.4	1.0	64.8	9.4	1.0
P6KE51A	P6KE51CA	P6KE51A	P6KE51CA	43.6	48.5	53.6	1.0	70.1	8.7	1.0
P6KE56A	P6KE56CA	P6KE56A	P6KE56CA	47.8	53.2	58.8	1.0	77.0	7.9	1.0
P6KE62A	P6KE62CA	P6KE62A	P6KE62CA	53.0	58.9	65.1	1.0	85.0	7.2	1.0
P6KE68A	P6KE68CA	P6KE68A	P6KE68CA	58.1	64.6	71.4	1.0	92.0	6.6	1.0
P6KE75A	P6KE75CA	P6KE75A	P6KE75CA	64.1	71.3	78.8	1.0	103.0	5.9	1.0
P6KE82A	P6KE82CA	P6KE82A	P6KE82CA	70.1	77.9	86.1	1.0	113.0	5.4	1.0
P6KE91A	P6KE91CA	P6KE91A	P6KE91CA	77.8	86.5	95.5	1.0	125.0	4.9	1.0
P6KE100A	P6KE100CA	P6KE100A	P6KE100CA	85.5	95.0	105.0	1.0	137.0	4.5	1.0
P6KE110A	P6KE110CA	P6KE110A	P6KE110CA	94.0	105.0	116.0	1.0	152.0	4.0	1.0
P6KE120A	P6KE120CA	P6KE120A	P6KE120CA	102.0	114.0	126.0	1.0	165.0	3.7	1.0

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Part Number		Marking Code		Reverse Stand-off Voltage	Breakdown Voltage Min. @I _T	Breakdown Voltage Max. @I _T	Test Current	Maximum Clamping Voltage @I _{PP}	Peak Pulse Current	Maximum Reverse Leakage @V _{RWM}
UNI	BI	UNI	BI	V _R (V)	V _B (V)	V _B (V)	I _T (mA)	V _C (V)	I _{PP} (A)	I _R (μA)
P6KE130A	P6KE130CA	P6KE130A	P6KE130CA	111.0	124.0	137.0	1.0	179.0	3.4	1.0
P6KE150A	P6KE150CA	P6KE150A	P6KE150CA	128.0	143.0	158.0	1.0	207.0	2.9	1.0
P6KE160A	P6KE160CA	P6KE160A	P6KE160CA	136.0	152.0	168.0	1.0	219.0	2.8	1.0
P6KE170A	P6KE170CA	P6KE170A	P6KE170CA	145.0	162.0	179.0	1.0	234.0	2.6	1.0
P6KE180A	P6KE180CA	P6KE180A	P6KE180CA	154.0	171.0	189.0	1.0	246.0	2.5	1.0
P6KE200A	P6KE200CA	P6KE200A	P6KE200CA	171.0	190.0	210.0	1.0	274.0	2.2	1.0
P6KE220A	P6KE220CA	P6KE220A	P6KE220CA	185.0	209.0	231.0	1.0	328.0	1.9	1.0
P6KE250A	P6KE250CA	P6KE250A	P6KE250CA	214.0	237.0	263.0	1.0	344.0	1.8	1.0
P6KE300A	P6KE300CA	P6KE300A	P6KE300CA	256.0	285.0	315.0	1.0	414.0	1.5	1.0
P6KE350A	P6KE350CA	P6KE350A	P6KE350CA	300.0	332.0	368.0	1.0	482.0	1.3	1.0
P6KE400A	P6KE400CA	P6KE400A	P6KE400CA	342.0	380.0	420.0	1.0	548.0	1.1	1.0
P6KE440A	P6KE440CA	P6KE440A	P6KE440CA	376.0	418.0	462.0	1.0	602.0	1.0	1.0
P6KE480A	P6KE480CA	P6KE480A	P6KE480CA	408.0	456.0	504.0	1.0	658.0	0.9	1.0
P6KE510A	P6KE510CA	P6KE510A	P6KE510CA	434.0	485.0	535.0	1.0	698.0	0.9	1.0
P6KE520A	P6KE520CA	P6KE520A	P6KE520CA	442.0	494.0	546.0	1.0	698.0	0.9	1.0
P6KE530A	P6KE530CA	P6KE530A	P6KE530CA	451.0	503.5	557.0	1.0	725.0	0.8	1.0
P6KE540A	P6KE540CA	P6KE540A	P6KE540CA	459.0	513.0	567.0	1.0	740.0	0.8	1.0
P6KE550A	P6KE550CA	P6KE550A	P6KE550CA	467.0	522.5	578.0	1.0	760.0	0.8	1.0
P6KE600A	P6KE600CA	P6KE600A	P6KE600CA	510.0	570.0	630.0	1.0	828.0	0.75	1.0

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5. CHARACTERISTIC CURVES

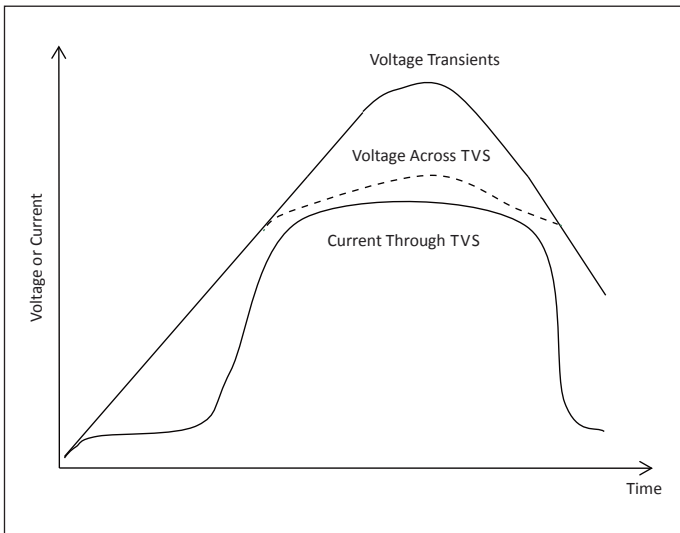


Figure 1. TVS Transients Clamping Waveform

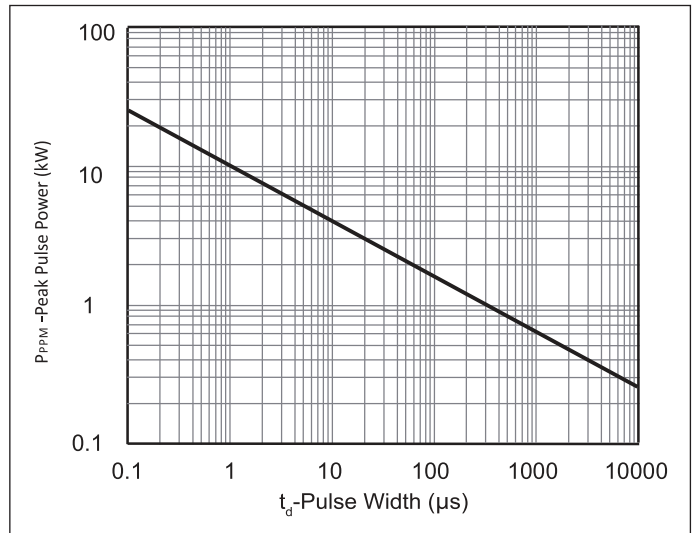


Figure 2. Peak Pulse Power Rang Curve

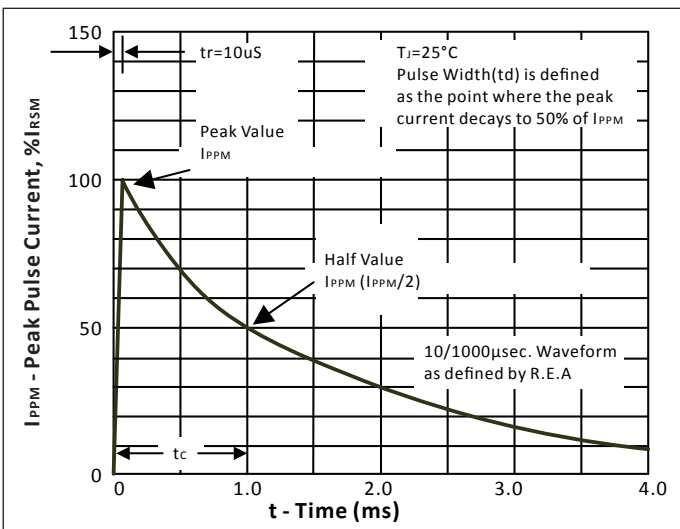


Figure 3. Peak Pulse Power Derating Curve

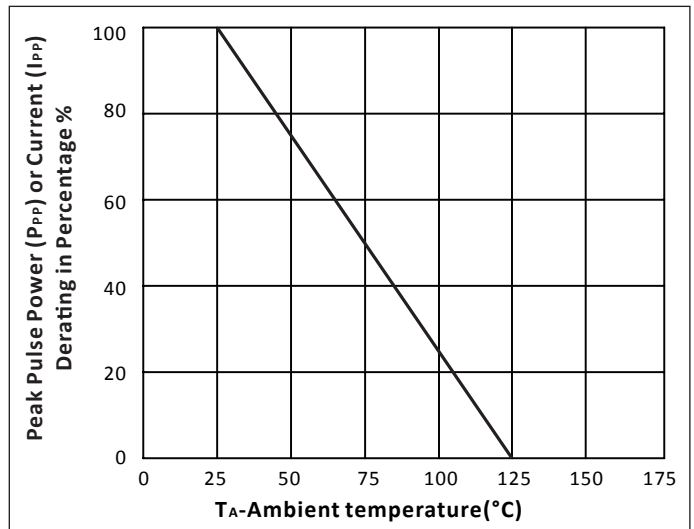


Figure 4. Pulse Waveform

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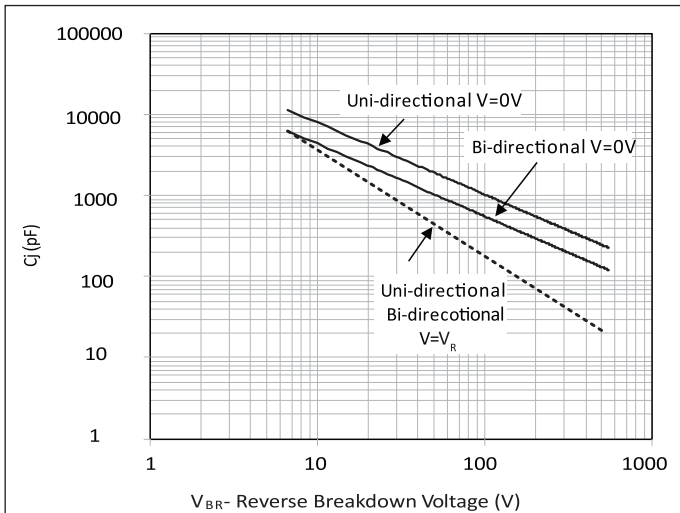


Figure 5. Typical Junction Capacitance

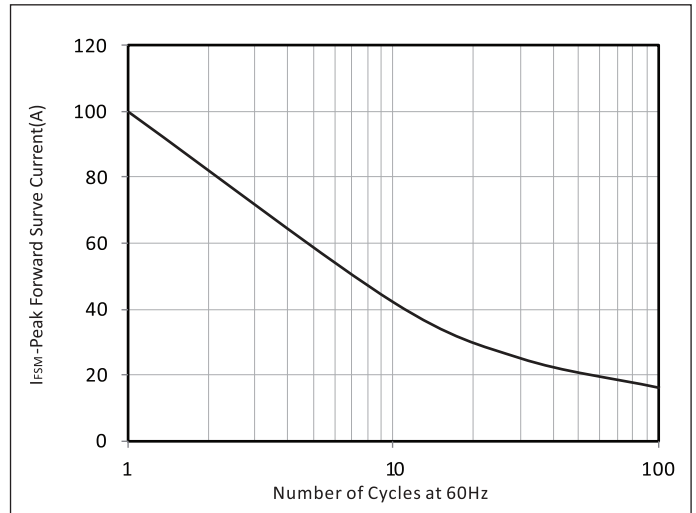
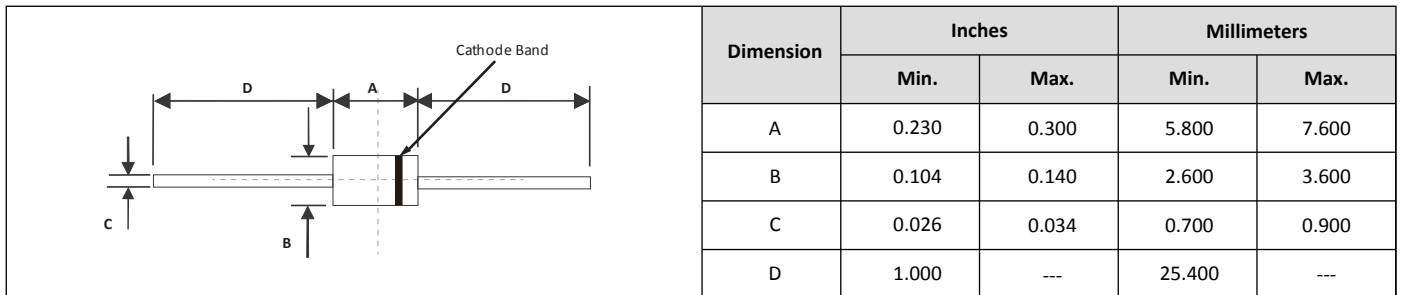


Figure 6. Maximum Non-Repetitive Forward Surge Current Uni-Directional Only

7. DO-15 PACKAGE INFORMATION



8. ORDERING INFORMATION

Part Number	Size	QTY/BOX
P6KExx(C)A	DO-15	2000PCS