



DATA SHEET

SEMICONDUCTOR

P6KE Series

GLASS PASSIVATED JUNCTION TRANSIENT VOLTAGE SUPPRESSOR 600 Watt Peak Power VOLTAGE- 6.8 to 540 Volts



FEATURES

- Plastic package has Underwriters Laboratory Flammability Classification 94V-O
- Typical IR less than 1 μ A above 10V
- 600W surge capability at 1ms
- Excellent clamping capability
- Low zener impedance
- Fast response time: typically less than 1.0 ps from 0 volts to BV min
- Pb free product are available : 99% Sn above can meet RoHS environment substance directive request
- High temperature soldering : 260 $^{\circ}$ C / 10 seconds at terminals
- Pb free product at available : 99% Sn above meet RoHS environment substance directive request

MECHANICAL DATA

- Case: JEDEC DO-15 Molded plastic
- Terminals: Axial leads, solderable per MIL-STD-750, Method 2026
- Polarity: Color band denoted cathode except Bipolar
- Mounting Position: Any
- Weight: 0.015 ounce, 0.4 gram

DEVICES FOR BIPOLAR APPLICATIONS

- For Bidirectional use C or CA Suffix for types
- Electrical characteristics apply in both directions.

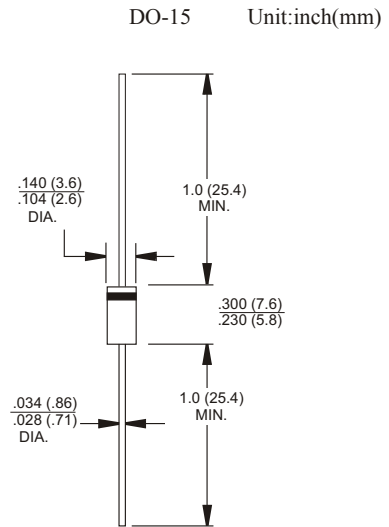
MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

- Rating at 25 $^{\circ}$ C ambient temperature unless otherwise specified. Resistive or inductive load, 60Hz.
- For Capacitive load derate current by 20%

RATING	SYMBOL	VALUE	UNITS
Peak Power Dissipation at TA=25 $^{\circ}$ C, TP=1ms(Note 1)	PPK	600	Watts
Steady State Power Dissipation at TL=75 $^{\circ}$ C Lead Lengths .375",(9.5mm)(Note 2)	PD	5.0	Watts
Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed on Rated Load(JECED Method) (Note 3)	IFSM	100	Amps
Operating and Storage Temperature Range	TJ, TSTG	-55 to +150	$^{\circ}$ C

NOTES:

- Non-repetitive current pulse, per Fig. 3 and derated above TA=25 $^{\circ}$ C per Fig. 2.
- Mounted on Copper Leaf area of 1.57 in² (40mm²).
- 8.3ms single half sine-wave, duty cycle= 4 pulses per minutes maximum.



P6KE Series

Part Number		Reverse Stand-off Voltage	Breakdown Voltage		Test Current	Reverse Leakage		Max. Clamp Voltage	Peak Pulse Current	Package			
			VBR@ I T			I T	I R@ VRWM				Vc@Ipp	Ipp	
			VRWM	Min.			Max.						UNI
UNI	BI	V	V	V	mA	µA	µA	V	A				
600W Transient Voltage Suppressor													
P6KE6.8	P6KE6.8C	5.5	6.12	7.48	10	1000.0	2000.0	10.8	55.6	DO-15			
P6KE6.8A	P6KE6.8CA	5.8	6.45	7.14	10	1000.0	2000.0	10.5	57.1	DO-15			
P6KE7.5	P6KE7.5C	6.1	6.75	8.25	10	5000	1000.0	11.7	51.3	DO-15			
P6KE7.5A	P6KE7.5CA	6.4	7.13	7.88	10	500.0	1000.0	11.3	53.1	DO-15			
P6KE8.2	P6KE8.2C	6.6	7.38	9.02	10	200.0	400.0	12.5	48.0	DO-15			
P6KE8.2A	P6KE8.2CA	7.0	7.79	8.61	10	200.0	400.0	12.1	49.6	DO-15			
P6KE9.1	P6KE9.1C	7.4	8.19	10.00	1	50.0	100.0	13.8	43.5	DO-15			
P6KE9.1A	P6KE9.1CA	7.8	8.65	9.55	1	50.0	100.0	13.4	44.8	DO-15			
P6KE10	P6KE10C	8.1	9.00	11.00	1	10.0	20.0	15.0	40.0	DO-15			
P6KE10A	P6KE10CA	8.6	9.50	10.50	1	10.0	20.0	14.5	41.4	DO-15			
P6KE11	P6KE11C	8.9	9.90	12.10	1	5.0	10.0	16.2	37.0	DO-15			
P6KE11A	P6KE11CA	9.4	10.50	11.60	1	5.0	10.0	15.6	38.5	DO-15			
P6KE12	P6KE12C	9.7	10.80	13.20	1	5.0	10.0	17.3	34.7	DO-15			
P6KE12A	P6KE12CA	10.2	11.40	12.60	1	5.0	5.0	16.7	35.9	DO-15			
P6KE13	P6KE13C	10.5	11.70	14.30	1	5.0	5.0	19.0	31.6	DO-15			
P6KE13A	P6KE13CA	11.1	12.40	13.70	1	5.0	5.0	18.2	33.0	DO-15			
P6KE15	P6KE15C	12.1	13.50	16.50	1	5.0	5.0	22.0	27.3	DO-15			
P6KE15A	P6KE15CA	12.8	14.30	15.80	1	5.0	5.0	21.2	28.3	DO-15			
P6KE16	P6KE16C	12.9	14.40	17.60	1	5.0	5.0	23.5	25.5	DO-15			
P6KE16A	P6KE16CA	13.6	15.20	16.80	1	5.0	5.0	22.5	26.7	DO-15			
P6KE18	P6KE18C	14.5	16.20	19.80	1	5.0	5.0	26.5	22.6	DO-15			
P6KE18A	P6KE18CA	15.3	17.10	18.90	1	5.0	5.0	25.2	23.8	DO-15			
P6KE20	P6KE20C	16.2	18.00	22.00	1	5.0	5.0	29.1	20.6	DO-15			
P6KE20A	P6KE20CA	17.1	19.00	21.00	1	5.0	5.0	27.7	21.7	DO-15			
P6KE22	P6KE22C	17.8	19.80	24.20	1	5.0	5.0	31.9	18.8	DO-15			
P6KE22A	P6KE22CA	18.8	20.90	23.10	1	5.0	5.0	30.6	19.6	DO-15			
P6KE24	P6KE24C	19.4	21.60	26.40	1	5.0	5.0	34.7	17.3	DO-15			
P6KE24A	P6KE24CA	20.5	22.80	25.20	1	5.0	5.0	33.2	18.1	DO-15			
P6KE27	P6KE27C	21.8	24.30	29.70	1	5.0	5.0	39.1	15.3	DO-15			
P6KE27A	P6KE27CA	23.1	25.70	28.40	1	5.0	5.0	37.5	16.0	DO-15			
P6KE30	P6KE30C	24.3	27.00	33.00	1	5.0	5.0	43.5	13.8	DO-15			
P6KE30A	P6KE30CA	25.6	28.50	31.50	1	5.0	5.0	41.4	14.5	DO-15			
P6KE33	P6KE33C	26.8	29.70	36.30	1	5.0	5.0	47.7	12.6	DO-15			
P6KE33A	P6KE33CA	28.2	31.40	34.70	1	5.0	5.0	45.7	13.1	DO-15			
P6KE36	P6KE36C	29.1	32.40	39.60	1	5.0	5.0	52.0	11.5	DO-15			
P6KE36A	P6KE36CA	30.8	34.20	37.80	1	5.0	5.0	49.9	12.0	DO-15			
P6KE39	P6KE39C	31.6	35.10	42.90	1	5.0	5.0	56.4	10.6	DO-15			
P6KE39A	P6KE39CA	33.3	37.10	41.00	1	5.0	5.0	53.9	11.1	DO-15			
P6KE43	P6KE43C	34.8	38.70	47.30	1	5.0	5.0	61.9	9.7	DO-15			
P6KE43A	P6KE43CA	36.8	40.90	45.20	1	5.0	5.0	59.3	10.1	DO-15			
P6KE47	P6KE47C	38.1	42.30	51.70	1	5.0	5.0	67.8	8.8	DO-15			
P6KE47A	P6KE47CA	40.2	44.70	49.40	1	5.0	5.0	64.8	9.3	DO-15			
P6KE51	P6KE51C	41.3	45.90	56.10	1	5.0	5.0	73.5	8.2	DO-15			
P6KE51A	P6KE51CA	43.6	48.50	53.60	1	5.0	5.0	70.1	8.3	DO-15			
P6KE56	P6KE56C	45.4	50.40	61.60	1	5.0	5.0	80.5	7.5	DO-15			
P6KE56A	P6KE56CA	47.8	53.20	58.80	1	5.0	5.0	77.0	7.8	DO-15			

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			VBR@ I T			I T	I R@ VRWM				Vc@Ipp	Ipp	
			VRWM	Min.			Max.						UNI
UNI	BI	V	V	V	m A	μA	μA	V	A				
600W Transient Voltage Suppressor													
P6KE62	P6KE62C	50.2	55.80	68.20	1	5.0	5.0	89.0	6.7	DO-15			
P6KE62A	P6KE62CA	53.0	58.90	65.10	1	5.0	5.0	85.0	7.1	DO-15			
P6KE68	P6KE68C	55.1	61.20	74.80	1	5.0	5.0	98.0	6.1	DO-15			
P6KE68A	P6KE68CA	58.1	64.40	71.40	1	5.0	5.0	92.0	6.5	DO-15			
P6KE75	P6KE75C	60.7	67.50	82.50	1	5.0	5.0	108.0	5.6	DO-15			
P6KE75A	P6KE75CA	64.1	71.30	78.80	1	5.0	5.0	103.0	5.8	DO-15			
P6KE82	P6KE82C	66.4	73.80	90.20	1	5.0	5.0	118.0	5.1	DO-15			
P6KE82A	P6KE82CA	70.1	77.90	86.10	1	5.0	5.0	113.0	5.3	DO-15			
P6KE91	P6KE91C	73.7	81.90	100.00	1	5.0	5.0	131.0	4.6	DO-15			
P6KE91A	P6KE91CA	77.8	86.50	95.50	1	5.0	5.0	125.0	4.8	DO-15			
P6KE100	P6KE100C	81.0	90.00	110.00	1	5.0	5.0	144.0	4.2	DO-15			
P6KE100A	P6KE100CA	85.5	95.00	105.00	1	5.0	5.0	137.0	4.4	DO-15			
P6KE110	P6KE110C	89.2	99.00	121.00	1	5.0	5.0	158.0	3.8	DO-15			
P6KE110A	P6KE110CA	94.0	105.00	116.00	1	5.0	5.0	152.0	3.9	DO-15			
P6KE120	P6KE120C	97.2	108.00	132.00	1	5.0	5.0	173.0	3.5	DO-15			
P6KE120A	P6KE120CA	102.0	114.00	126.00	1	5.0	5.0	165.0	3.6	DO-15			
P6KE130	P6KE130C	105.0	117.00	143.00	1	5.0	5.0	187.0	3.2	DO-15			
P6KE130A	P6KE130CA	111.0	124.00	137.00	1	5.0	5.0	179.0	3.4	DO-15			
P6KE150	P6KE150C	121.0	135.00	165.00	1	5.0	5.0	215.0	2.8	DO-15			
P6KE150A	P6KE150CA	128.0	143.00	158.00	1	5.0	5.0	207.0	2.9	DO-15			
P6KE160	P6KE160C	130.0	144.00	176.00	1	5.0	5.0	230.0	2.6	DO-15			
P6KE160A	P6KE160CA	136.0	152.00	168.00	1	5.0	5.0	219.0	2.7	DO-15			
P6KE170	P6KE170C	138.0	153.00	187.00	1	5.0	5.0	244.0	2.5	DO-15			
P6KE170A	P6KE170CA	145.0	162.00	179.00	1	5.0	5.0	234.0	2.6	DO-15			
P6KE180	P6KE180C	146.0	162.00	198.00	1	5.0	5.0	258.0	2.3	DO-15			
P6KE180A	P6KE180CA	154.0	171.00	189.00	1	5.0	5.0	246.0	2.4	DO-15			
P6KE200	P6KE200C	162.0	180.00	220.00	1	5.0	5.0	287.0	2.1	DO-15			
P6KE200A	P6KE200CA	171.0	190.00	210.00	1	5.0	5.0	274.0	2.2	DO-15			
P6KE220	P6KE220C	175.0	198.00	242.00	1	5.0	5.0	344.0	1.7	DO-15			
P6KE220A	P6KE220CA	185.0	209.00	231.00	1	5.0	5.0	328.0	1.8	DO-15			
P6KE250	P6KE250C	202.0	225.00	275.00	1	5.0	5.0	360.0	1.7	DO-15			
P6KE250A	P6KE250CA	214.0	237.00	563.00	1	5.0	5.0	344.0	1.7	DO-15			
P6KE300	P6KE300C	243.0	270.00	330.00	1	5.0	5.0	430.0	1.4	DO-15			
P6KE300A	P6KE300CA	256.0	285.00	315.00	1	5.0	5.0	414.0	1.4	DO-15			
P6KE350	P6KE350C	284.0	315.00	385.00	1	5.0	5.0	504.0	1.2	DO-15			
P6KE350A	P6KE350CA	300.0	333.00	368.00	1	5.0	5.0	482.0	1.2	DO-15			
P6KE400	P6KE400C	324.0	360.00	440.00	1	5.0	5.0	574.0	1.0	DO-15			
P6KE400A	P6KE400CA	342.0	380.00	420.00	1	5.0	5.0	548.0	1.1	DO-15			
P6KE440	P6KE440C	356.0	396.00	484.00	1	5.0	5.0	631.0	1.0	DO-15			
P6KE440A	P6KE440CA	376.0	418.00	462.00	1	5.0	5.0	602.0	1.0	DO-15			
P6KE480	P6KE480C	389.0	432.00	528.00	1	5.0	5.0	686.0	0.9	DO-15			
P6KE480A	P6KE480CA	408.0	456.00	504.00	1	5.0	5.0	658.0	0.9	DO-15			
P6KE510	P6KE510C	413.0	459.00	561.00	1	5.0	5.0	729.0	0.8	DO-15			
P6KE510A	P6KE510CA	434.0	485.00	535.00	1	5.0	5.0	698.0	0.9	DO-15			
P6KE540	P6KE540C	437.0	486.00	594.00	1	5.0	5.0	772.0	0.8	DO-15			
P6KE540A	P6KE540CA	459.0	513.00	567.00	1	5.0	5.0	740.0	0.8	DO-15			

DEVICE CHARACTERISTICS

P6KE Series

Fig. 1 – Peak Pulse Power Rating Curve

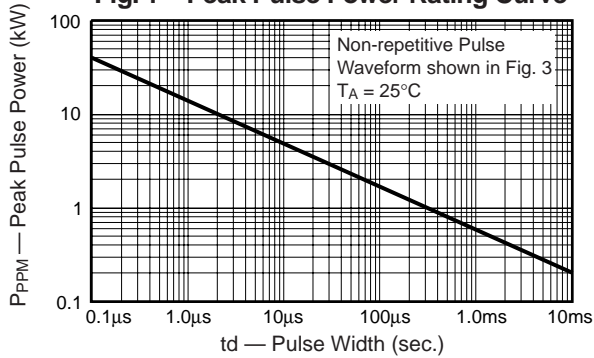


Fig. 2 – Pulse Derating Curve

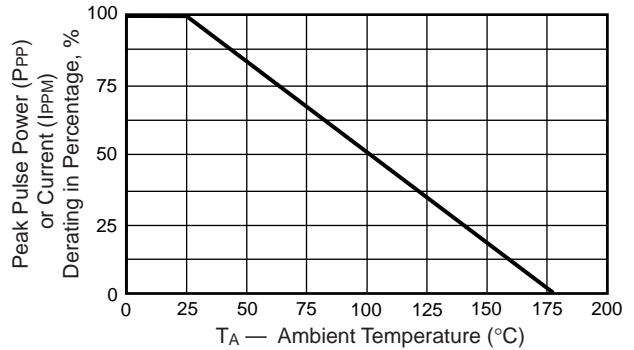


Fig. 3 – Pulse Waveform

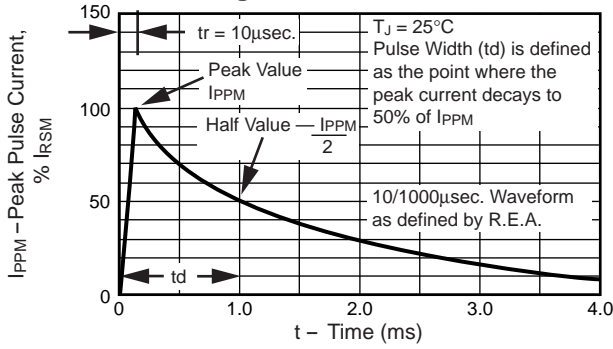


Fig. 4 – Typ. Junction Capacitance Uni-Directional

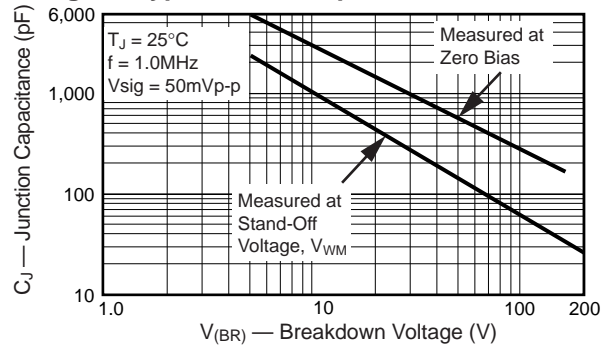


Fig. 5 – Steady State Power Derating Curve

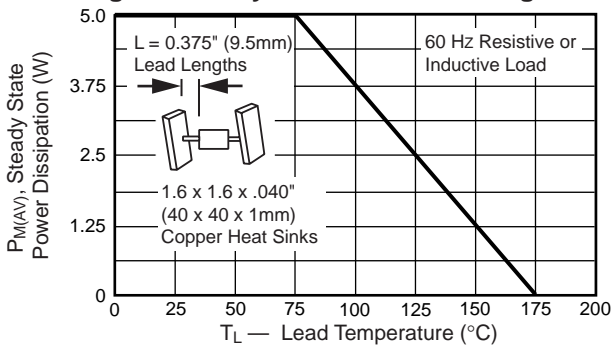


Fig. 6 - Max. Non-Repetitive Forward Surge Current

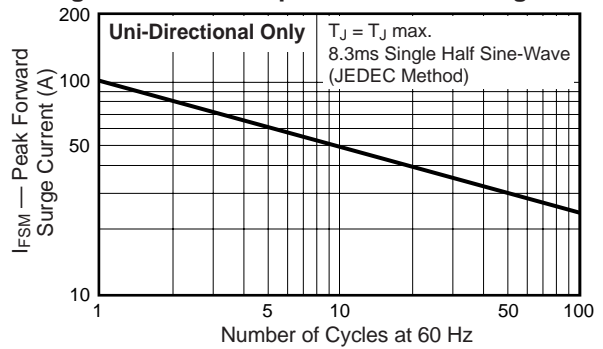


Fig. 7 – Typ. Reverse Leakage Characteristics

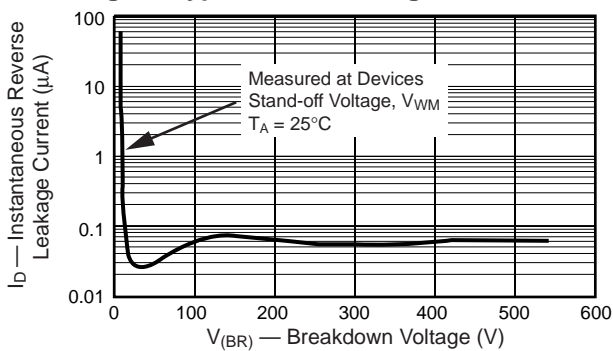


Fig. 8 – Typ. Transient Thermal Impedance

