

Unidirectional and Bidirectional Transient Voltage Suppressors

Reverse Voltage 6.8 - 600 Volts
Power Dissipation - 600 Watts

Features

- low leakage
- Uni and bidirectional uni
- Excellent clamping capability
- Fast response time

Mechanical Data

- Case: DO-15 molded plastic
- Polarity: Color band denotes cathode

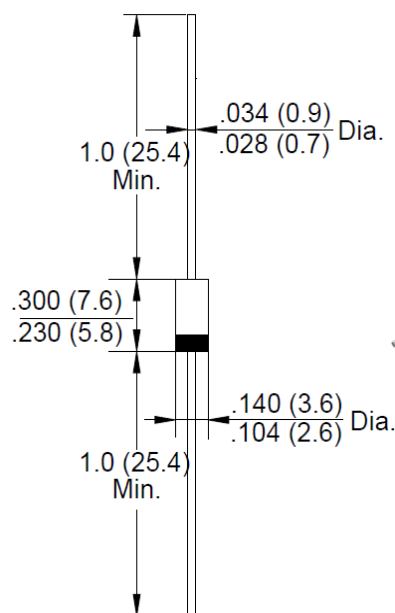
Applications

- Use in sensitive electronics protection against voltage transients induced by inductive load switching and lighting on ICs, MOSFET.

DO-15



RoHS
COMPLIANT



Package Outline Dimensions in Inches (Millimeters)

Maximum Ratings and Electrical Characteristics

Rating at 25°C ambient temperature unless otherwise specified.

Single phase, half wave, 60Hz, resistive or inductive load.

For capacitive load, derate current by 20%.

Characteristics	Symbol	Value	Unit
Peak pulse power dissipation with a 10/1000μs waveform	PPPM	600	W
Peak pulse current with a waveform	IPPM	See Next Table	W
Maximum Instantaneous Forward Voltage at 50A for Unidirectional Devices Only (Note 3)	V _F	See Note 3	°C/W
Typical Thermal Resistance Junction to Lead	R _{θJL}	20	°C/W
Typical Thermal Resistance Junction to Ambient	R _{θJA}	75	°C/W
Peak Forward Surge Current, 8.3ms Single Half Sine-Wave, Superimposed on Rated Load (JEDEC Method)	I _{FSM}	100	A
Power dissipation on infinite heat sink at T _L =75°C	P _D	5	W
Operating Junction Temperature Range	T _J	-55 to + 150	°C
Storage Temperature Range	T _{STG}	-55 to + 150	°C

Notes: 1. Non-repetitive current pulse, per Fig. 3 and derated above T_A=25°C per Fig. 1.

2. 8.3ms single half-wave duty cycle=4 pulses per minutes maximum (uni-directional units only).

3. V_F=3.5V on P6KE6.8G thru P6KE200AG devices and V_F=5.0V on P6KE220AG thru P6KE400AG devices.



Fig. 1 - Maximum Non-Repetitive Peak Forward Surge Current

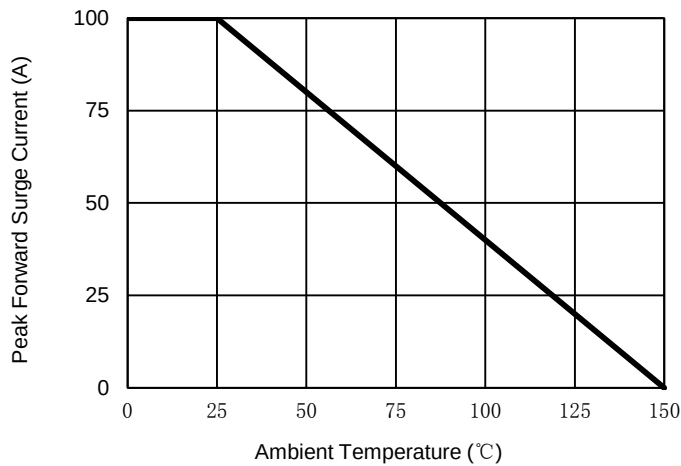


Fig. 2 - Maximum Non-Repetitive Surge Current

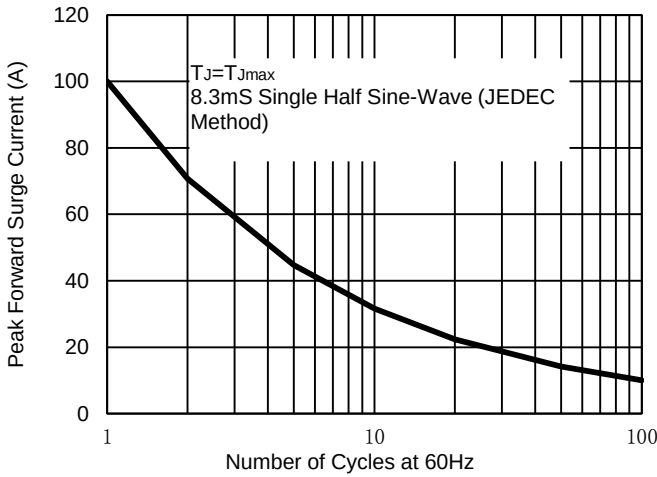


Fig. 3 - Pulse Waveform

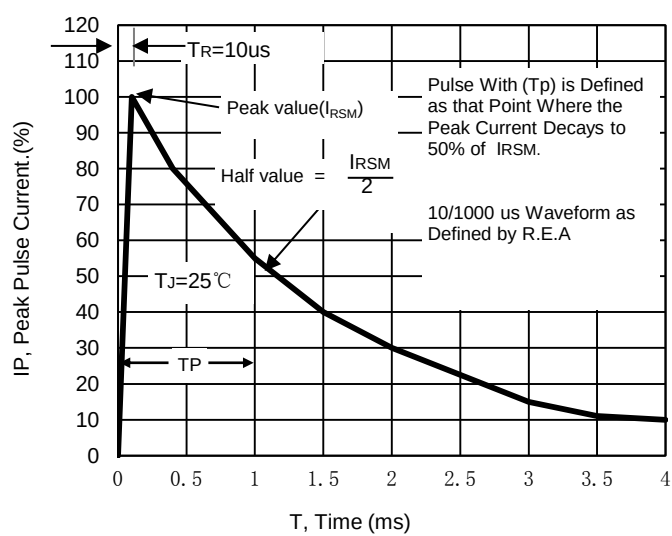


Fig.4- Typical Junction Capacitance

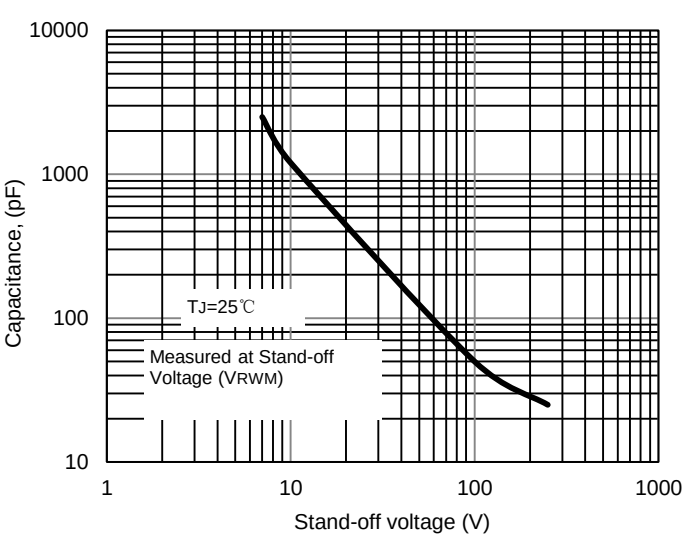


Fig. 5 - Pulse Rating Curve

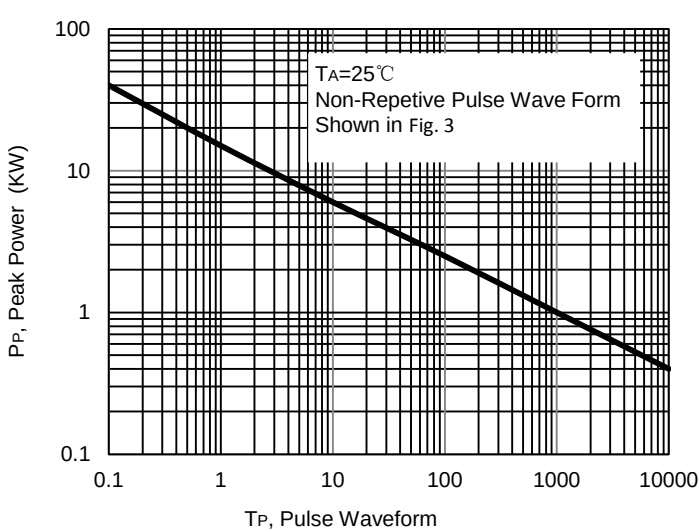
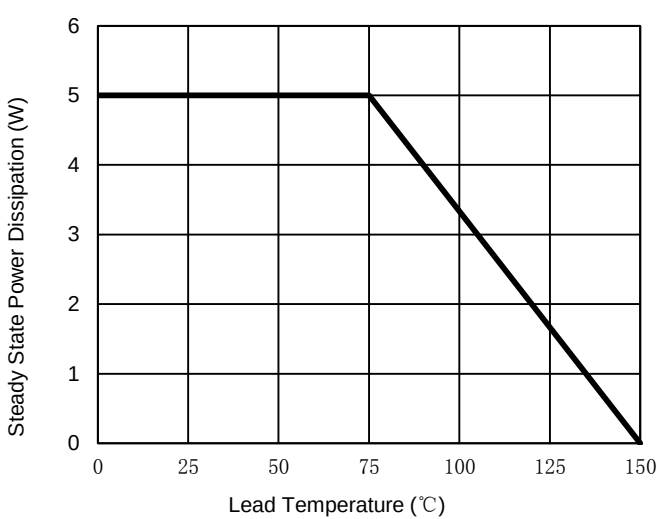


Fig. 6 - Steady State Power Derating Curve



The curve above is for reference only.



P6KEG SERIES

Device Uni-directional	Device Bi-directional	Reverse Stand off Voltage	Breakdown Voltage at IT2 V(BR) (V)			Maximum Reverse Leakage at VR	Maximum Clamping Voltage at IPPM	Maximum Peak Pulse Surge Current ⁽³⁾	Max. Voltage Temp.
(UNI)	(BI)	VR(V)	Min(V)	Max(V)	It(mA)	IR(μA)	Vc(V)	Ipp(A)	mV/°C
P6KEG6.8A	P6KEG6.8CA	5.80	6.45	7.14	10	1000	10.5	57.0	0.057
P6KEG7.5A	P6KEG7.5CA	6.40	7.13	7.88	10	500	11.3	53.0	0.061
P6KEG8.2A	P6KEG8.2CA	7.02	7.79	8.61	10	200	12.1	50.0	0.065
P6KEG9.1A	P6KEG9.1CA	7.78	8.65	9.55	1	50	13.4	45.0	0.068
P6KEG10A	P6KEG10CA	8.55	9.50	10.50	1	10	14.5	41.0	0.073
P6KEG11A	P6KEG11CA	9.40	10.50	11.60	1	5	15.6	38.0	0.075
P6KEG12A	P6KEG12CA	10.20	11.40	12.60	1	5	16.7	36.0	0.078
P6KEG13A	P6KEG13CA	11.10	12.40	13.70	1	5	18.2	33.0	0.081
P6KEG15A	P6KEG15CA	12.80	14.30	15.80	1	5	21.2	28.0	0.084
P6KEG16A	P6KEG16CA	13.60	15.20	16.80	1	5	22.5	27.0	0.086
P6KEG18A	P6KEG18CA	15.30	17.10	18.90	1	5	25.2	24.0	0.088
P6KEG20A	P6KEG20CA	17.10	19.00	21.00	1	5	27.7	22.0	0.090
P6KEG22A	P6KEG22CA	18.80	20.90	23.10	1	5	30.6	20.0	0.092
P6KEG24A	P6KEG24CA	20.50	22.80	25.20	1	5	33.2	18.0	0.094
P6KEG27A	P6KEG27CA	23.10	25.70	28.40	1	5	37.5	16.0	0.096
P6KEG30A	P6KEG30CA	25.60	28.50	31.50	1	5	41.4	14.4	0.097
P6KEG33A	P6KEG33CA	28.20	31.40	34.70	1	5	45.7	13.2	0.098
P6KEG36A	P6KEG36CA	30.80	34.20	37.80	1	5	49.9	12.0	0.099
P6KEG39A	P6KEG39CA	33.30	37.10	41.00	1	5	53.9	11.2	0.100
P6KEG43A	P6KEG43CA	36.80	40.90	45.20	1	5	59.3	10.1	0.101
P6KEG47A	P6KEG47CA	40.20	44.70	49.40	1	5	64.8	9.3	0.101
P6KEG51A	P6KEG51CA	43.60	48.50	53.60	1	5	70.1	8.6	0.102
P6KEG56A	P6KEG56CA	47.80	53.20	58.80	1	5	77.0	7.8	0.103
P6KEG62A	P6KEG62CA	53.0	58.9	65.1	1	5	85.0	7.10	0.104
P6KEG68A	P6KEG68CA	58.1	64.6	71.4	1	5	92.0	6.50	0.104
P6KEG75A	P6KEG75CA	64.7	71.3	78.8	1	5	103.0	5.80	0.105
P6KEG82A	P6KEG82CA	70.1	77.9	86.1	1	5	113.0	5.30	0.105
P6KEG91A	P6KEG91CA	77.8	86.5	95.5	1	5	125.0	4.80	0.106
P6KEG100A	P6KEG100CA	85.5	95.0	105.0	1	5	137.0	4.40	0.106
P6KEG110A	P6KEG110CA	94.0	105.0	116.0	1	5	152.0	4.00	0.107
P6KEG120A	P6KEG120CA	102.0	114.0	126.0	1	5	165.0	3.60	0.107
P6KEG130A	P6KEG130CA	111.0	124.0	137.0	1	5	179.0	3.30	0.107
P6KEG150A	P6KEG150CA	128.0	143.0	158.0	1	5	207.0	2.90	0.108
P6KEG160A	P6KEG160CA	136.0	152.0	168.0	1	5	219.0	2.70	0.108
P6KEG170A	P6KEG170CA	145.0	162.0	179.0	1	5	234.0	2.60	0.108
P6KEG180A	P6KEG180CA	154.0	171.0	189.0	1	5	246.0	2.40	0.108
P6KEG200A	P6KEG200CA	171.0	190.0	210.0	1	5	274.0	2.20	0.108
P6KEG220A	P6KEG220CA	185.0	209.0	231.0	1	5	328.0	1.83	0.108
P6KEG250A	P6KEG250CA	214.0	237.0	263.0	1	5	344.4	1.75	0.110
P6KEG300A	P6KEG300CA	256.0	285.0	315.0	1	5	414.0	1.45	0.110
P6KEG350A	P6KEG350CA	300.0	332.0	368.0	1	5	482.0	1.25	0.110
P6KEG400A	P6KEG400CA	342.0	380.0	420.0	1	5	548.0	1.10	0.110
P6KEG440A	P6KEG440CA	376	418	462	1	5	600	1.00	0.110
P6KEG480A	P6KEG480CA	408	456	504	1	5	658	0.90	0.110
P6KEG510A	P6KEG510CA	434	485	535	1	5	698	0.90	0.110
P6KEG530A	P6KEG530CA	477	503.5	556.5	1	5	725	0.80	0.110
P6KEG540A	P6KEG540CA	486	513	567	1	5	740	0.80	0.110
P6KEG550A	P6KEG550CA	495	522.5	577.5	1	5	760	0.80	0.110
P6KEG600A	P6KEG600CA	512	570	630	1	5	828	0.80	0.110

Notes: 1. Suffix'C' denotes bidirectional device . Suffix'A' denotes 5% tolerance device .

2. For bidirectional devices having VR of 10volts and under ,the IR limit is doubled .

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