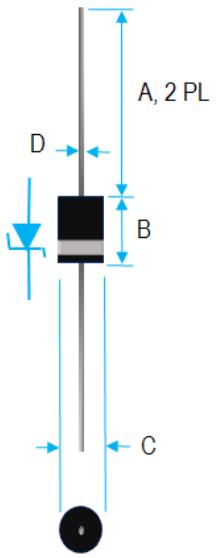
3000W AXIAL LEADED TRANSIENT VOLTAGE SUPPRESSORS, 5.0V – 220V



Dim.	Value Inch[mm] Min.	Max.
A	1.000[25.40]	---
B	0.340[8.64]	0.360[9.14]
C	0.340[8.64]	0.360[9.14]
D	0.047[1.22]	0.051[1.32]

PRODUCT FEATURES

1. FLAMMABILITY CLASSIFICATION 94V-0
2. GLASS PASSIVATED CHIP JUNCTION
3. 3KW PEAK PULSE POWER CAPABILITY WITH A 10/1000 µS WAVEFORM, REPETITION RATE (DUTY CYCLE): 0.01%.
4. EXCELLENT CLAMPING CAPABILITY
5. FAST RESPONSE TIME FROM 0V TO V_{BR}, TYPICALLY <1 pS FOR UNI-DIRECTIONAL & <5 nS FOR BI-DIRECTIONAL
6. POLARITY: INDICATED BY CATHODE BAND
7. MOLDED PLASTIC CASE P600
8. DIMENSIONS IN INCHES AND (MILLIMETERS)
9. LEADS: SOLDERABILITY PER MIL-STD-202 METHOD 208
10. WEIGHT: 2.10 GRAMS
11. RoHS COMPLIANT. ADD SUFFIX "-H" FOR HALOGEN FREE PART. i.e. 3KP5.0A-H.

ELECTRICAL CHARACTERISTICS

MAXIMUM RATINGS (T_A =25°C UNLESS OTHERWISE NOTED)

PARAMETER	CONDITIONS	SYMBOL		UNIT
PEAK POWER DISSIPATION	WITH A 10/1000 µS WAVEFORM, SEE NOTE 1 & FIG.1	P_{PPM}	3000	W
PEAK PULSE CURRENT	WITH A 10/1000 µS WAVEFORM, SEE NOTE 1 & FIG.1	I_{PPM}	SEE TABLE	A
STEADY STATE POWER DISSIPATION	AT T_L=75° C, LEAD LENGTH 0.375" (9.5mm)	$P_{M(AV)}$	6.5	W
PEAK FORWARD SURGE CURRENT	8.3mS SINGLE HALF SINE-WAVE (JEDEC METHOD), SEE NOTE 2	I_{FSM}	300	A
MAXIMUM INSTANTANEOUS FORWARD VOLTAGE	AT 100A FOR UNI-DIRECTIONAL TYPES ONLY, SEE NOTE 3	V_F	3.5/5.0	V
OPERATING JUNCTION TEMPERATURE RANGE		T_J	-55 TO +150	°C
STORAGE TEMPERATURE RANGE		T_{STG}	-55 TO +150	°C

Note : 1. Non-repetitive current pulse, per fig. 3 and derated above T_A=25°C per fig. 2
2. Measured on 8.3 ms single half sine-wave or equivalent square wave, duty cycle=4 pulses per minute maximum
3. V_F<3.5V for device with V_{BR}≤200V and V_F<5.0V for device with V_{BR}>200V

Part No.	Reverse Stand-off Voltage	Breakdown Voltage @I_T		Test Current	Maximum Clamping Voltage @I_{PP}		Maximum Reverse Leakage Current
	V_{RWM}	V_{BR} Min	V_{BR} Max	I_T	V_C	I_{PP}	I_R@V_{RWM}
	Volts	Volts	Volts	mA	Volts	A	μA
3KP5.0(C)A	5.0	6.40	7.00	50	9.2	326	5000
3KP6.0(C)A	6.0	6.67	7.37	50	10.3	291.3	5000
3KP6.5(C)A	6.5	7.22	7.98	50	11.2	267.9	2000
3KP7.0(C)A	7.0	7.78	8.60	50	12.0	250	1000
3KP7.5(C)A	7.5	8.33	9.21	5.0	12.9	232.6	250
3KP8.0(C)A	8.0	8.89	9.83	5.0	13.6	220.6	150
3KP8.5(C)A	8.5	9.44	10.4	5.0	14.4	206.4	50
3KP9.0(C)A	9.0	10.0	11.1	5.0	15.4	194.8	20
3KP10(C)A	10.0	11.1	12.3	5.0	17.0	176.4	10
3KP11(C)A	11.0	12.2	13.5	5.0	18.2	184.8	10
3KP12(C)A	12.0	13.3	14.7	5.0	19.9	150.6	10
3KP13(C)A	13.0	14.4	15.9	5.0	21.5	139.4	10
3KP14(C)A	14.0	15.6	17.2	5.0	23.2	129.4	10
3KP15(C)A	15.0	16.7	18.5	5.0	24.4	123	10
3KP16(C)A	16.0	17.8	19.7	5.0	26.0	115.4	10
3KP17(C)A	17.0	18.9	20.9	5.0	27.6	106.6	10
3KP18(C)A	18.0	20.0	22.1	5.0	29.2	102.8	10
3KP20(C)A	20.0	22.2	24.5	5.0	32.4	92.6	10
3KP22(C)A	22.0	24.4	26.9	5.0	35.5	84.4	10
3KP24(C)A	24.0	26.7	29.5	5.0	38.9	77.2	10
3KP26(C)A	26.0	28.9	31.9	5.0	42.1	71.2	10
3KP28(C)A	28.0	31.1	34.4	5.0	45.4	66.0	10
3KP30(C)A	30.0	33.3	36.8	5.0	48.4	62.0	10
3KP33(C)A	33.0	36.7	40.6	5.0	53.3	56.2	10
3KP36(C)A	36.0	40.0	44.2	5.0	58.1	51.6	10
3KP40(C)A	40.0	44.4	49.1	5.0	64.5	46.4	10
3KP43(C)A	43.0	47.8	52.8	5.0	69.4	43.2	10
3KP45(C)A	45.0	50.0	55.3	5.0	72.7	41.3	10
3KP48(C)A	48.0	53.3	58.9	5.0	77.4	38.8	10
3KP51(C)A	51.0	56.7	62.7	5.0	82.4	36.4	10
3KP54(C)A	54.0	60.0	66.3	5.0	87.1	34.4	10
3KP58(C)A	58.0	64.4	71.2	5.0	93.6	32.1	10
3KP60(C)A	60.0	66.7	73.7	5.0	96.8	31.0	10
3KP64(C)A	64.0	71.1	78.6	5.0	103.0	29.1	10
3KP70(C)A	70.0	77.8	86.0	5.0	113.0	26.5	10
3KP75(C)A	75.0	83.3	92.1	5.0	121.0	24.8	10
3KP78(C)A	78.0	86.7	95.8	5.0	126.0	23.8	10
3KP85(C)A	85.0	94.4	104.0	5.0	137.0	21.9	10
3KP90(C)A	90.0	100.0	111.0	5.0	146	20.5	10

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Part No.	Reverse Stand-off Voltage	Breakdown Voltage @I_T		Test Current	Maximum Clamping Voltage @I_{PP}		Maximum Reverse Leakage Current
	V_{RWM}	V_{BR} Min	V_{BR} Max	I_T	V_C	I_{PP}	I_R@V_{RWM}
	Volts	Volts	Volts	mA	Volts	A	μA
3KP100(C)A	100.0	111.0	123.0	5.0	162	18.5	10
3KP110(C)A	110.0	122.0	135.0	5.0	177	16.9	10
3KP120(C)A	120.0	133.0	147.0	5.0	193	15.5	10
3KP130(C)A	130	144	159	5.0	209	14.4	10
3KP150(C)A	150	167	185	5.0	243	12.3	10
3KP160(C)A	160	178	197	5.0	259	11.6	10
3KP170(C)A	170	189	209	5.0	275	10.9	10
3KP180(C)A	180	200	221	5.0	289	10.4	10
3KP190(C)A	190	211	233	5.0	310	9.7	10
3KP200(C)A	200	222	246	5.0	329	9.1	10
3KP210(C)A	210	233	258	5.0	350	8.6	10
3KP220(C)A	220	244	270	5.0	371	8.1	10

Note 1. V_{BR} measured after I_T applied for 300us, I_T=square wave pulse or equivalent

2. Surge current waveform per Fig. 3 and derated per Fig. 2
3. For bi-directional types having V_{RWM} of 10 volts and less, the I_R limit is doubled
4. Suffix 'C' denotes bi-directional devices. Suffix 'A' denotes 5% tolerance devices, no suffix denotes 10% tolerance devices.
5. All terms and symbols are consistent with ANS/IEEE C62.35
6. Transient Voltage Suppressors (TVS) are devices used to protect vulnerable circuits from electrical overstress such as that caused by electrostatic discharge, inductive load switching and induced lightning. Within the TVS, damaging voltage spikes are limited by clamping or avalanche action of a rugged silicon PN junction which reduces the amplitude of the transient to a nondestructive level. See Fig. 7 & Fig. 8

RATINGS AND CHARACTERISTIC CURVES

Fig. A - Transients of several thousand volts can be clamped to a safe level by the TVS

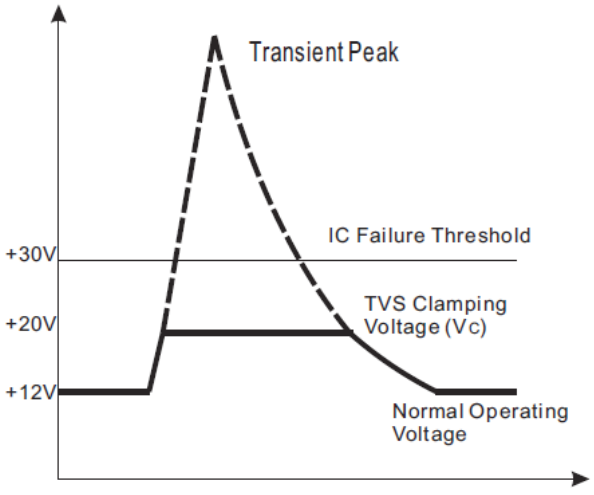

Fig. B - Transient current is divered to ground thru TVS; the voltage seen by the protected load is limited to the clamping voltage level

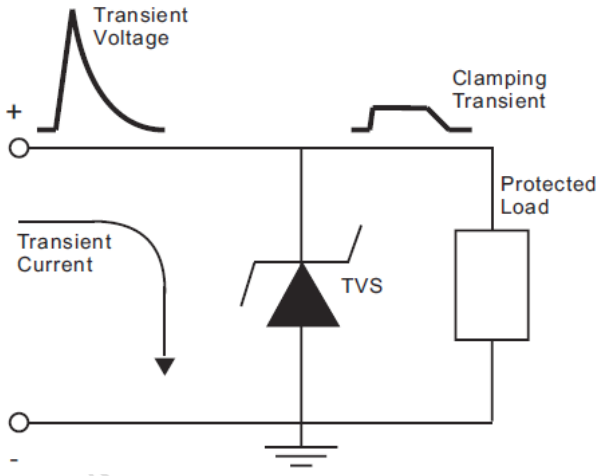

Fig.1 - Pulse Derating Curve

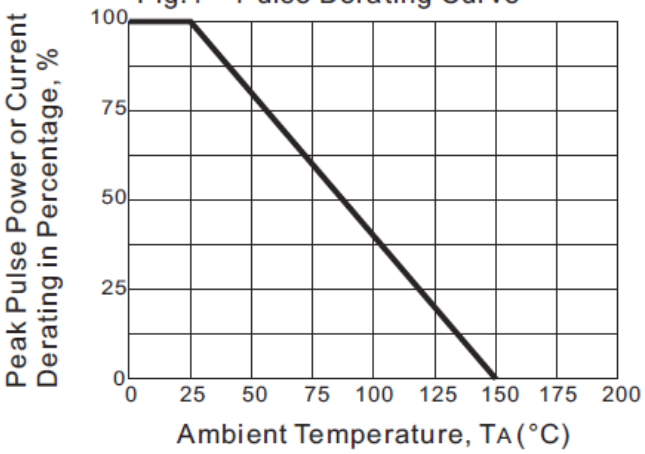

Fig.2 - Maximum Non-Repetitive Forward Surge Current

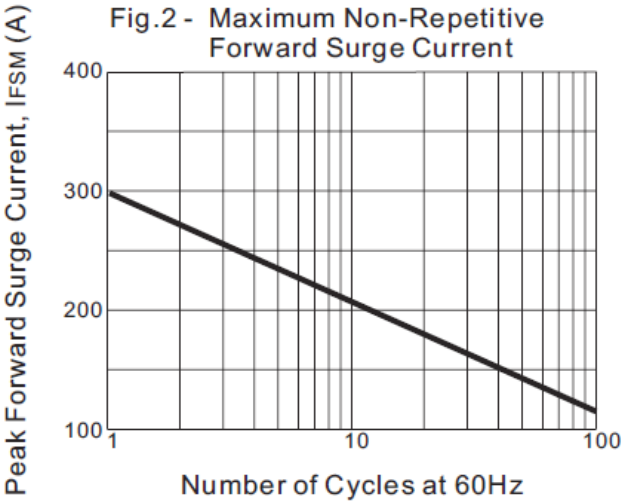

Fig.3 - Steady State Power Derating Curve

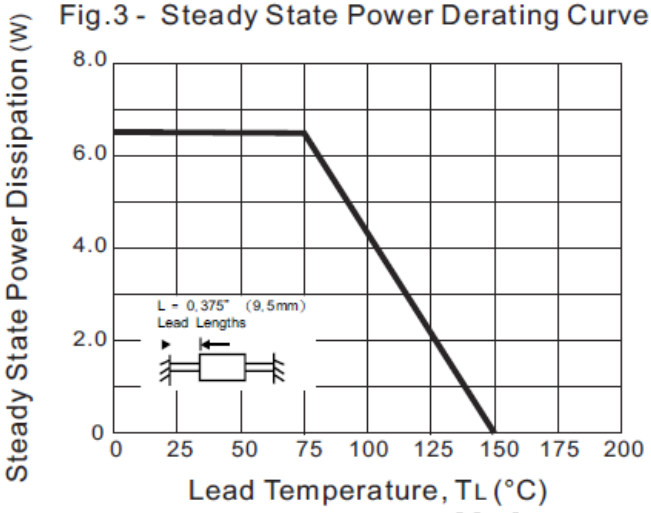

Fig.4 - Pealk Pulse Power Rating Curve

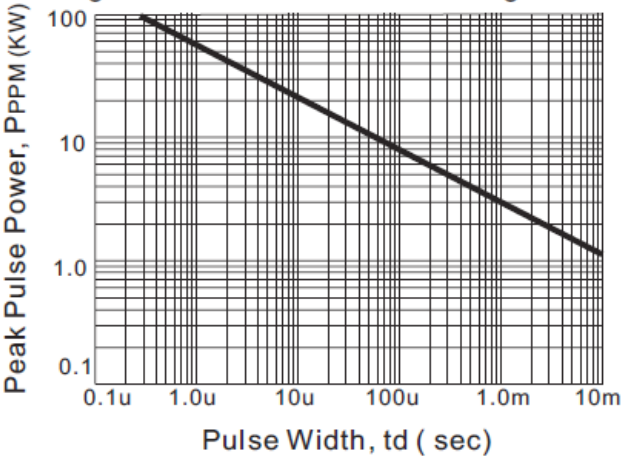

Fig.5 - Pulse Waveform

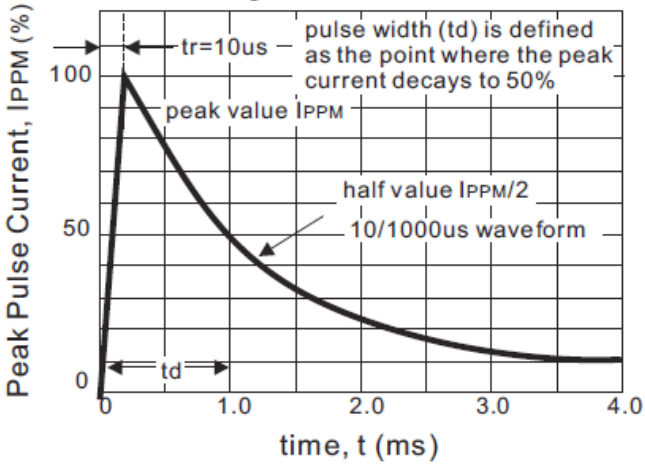

Fig.6 - Typical Junction Capacitance