

RoHS Compliant Product

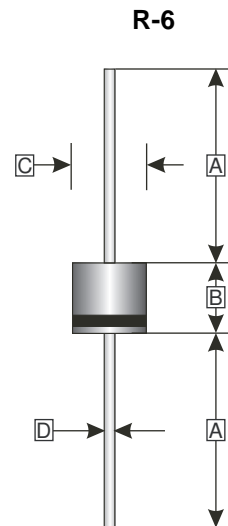
A suffix of "-C" specifies halogen-free and RoHS Compliant

FEATURES

- Plastic Package has Underwriters Laboratory Flammability Classification 94V-0
- Glass Passivated Junction
- 5000W Peak Pulse Power Capability at 10/1000 μ s Waveform, Repetition Rate (duty cycles): 0.05%
- Excellent Clamping Capability
- Low Incremental Surge Resistance
- Fast Response Time: Typically Less than 1.0ps from 0 Volts to $V_{(BR)}$ for Uni-directional and 5ns for Bi-directional Types
- Devices with $V_{(BR)} > 10V$ I_D are typically I_D Less than 1.0mA
- High Temperature Soldering Guaranteed: 265 $^{\circ}$ C/10s
0.375", (9.5mm) lead length, 5 lbs., (2.3kg) tension

MECHANICAL DATA

- Case: Molded plastic body over glass passivated junction
- Terminals: Solder plated axial leads, solderable per MIL-STD-750, Method 2026
- Polarity: Color band denotes the cathode, which is positive with respect to the anode under normal TVS operation
- Mounting position: Any

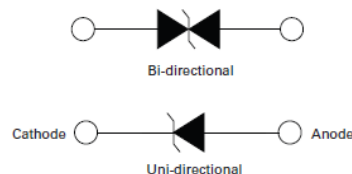


REF.	Millimeter	
	Min.	Max.
A	25.4 REF.	
B	8.6	9.1
C	8.6	9.1
D	1.2	1.3

ORDER INFORMATION

Part Number	Type
5KP Series	Lead (Pb)-free
5KP Series-C	Lead (Pb)-free and Halogen-free

Functional Diagram



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS ($T_A=25^{\circ}$ C unless otherwise noted)

Parameter	Symbol	Value	Unit
Minimum Peak Pulse Power Dissipation ¹ @10/1000 μ s waveform	P_{PP}	5000	W
Peak Pulse Current ¹ @10/1000 μ s waveform	I_{PP}	(See next table.)	A
Steady State Power Dissipation ²	$T_L=75^{\circ}$ C P_D	8	W
Peak Forward Surge Current, 8.3ms single half sine-wave ³	I_{FSM}	500	A
Instantaneous Forward Voltage at 100A ³	V_F	3.5	V
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55~175	$^{\circ}$ C

Notes:

1. Non-repetitive current pulse, per Fig. 3 and derated above $T_A=25^{\circ}$ C per Fig. 2.
2. Mounted on copper pad area of 1.6 x 1.6" (40 x 40mm) per Fig. 5.
3. Measured on 8.3ms single half sine wave or equivalent square wave, duty cycle= 4 pulses per minute maximum.

ELECTRICAL CHARACTERISTICS ($T_A=25^\circ\text{C}$ unless otherwise noted)

PART NUMBER		Reverse Stand-Off Voltage	Breakdown Voltage V_{BR} @ I_T ¹		Test Current	Maximum Clamping Voltage V_C @ I_{PP}	Maximum Peak Pulse Current ²	Maximum Reverse Leakage I_R @ V_{RWM}	Maximum Temperature Coefficient of V_{BR}
			Min.	Max.					
DIRECTIONAL		V_{RWM}	V_{BR}		I_T	V_C	I_{PP}	I_R	-
Uni	Bi	V	V		mA	V	A	uA	%/°C
5KP11A	5KP11CA	11	12.2	13.5	5	18.2	275	10	0.086
5KP12A	5KP12CA	12	13.3	14.7	5	19.9	251	5	0.088
5KP13A	5KP13CA	13	14.4	15.9	5	21.5	233	2	0.090
5KP14A	5KP14CA	14	15.6	17.2	5	23.2	216	2	0.092
5KP15A	5KP15CA	15	16.7	18.5	5	24.4	205	2	0.094
5KP16A	5KP16CA	16	17.8	19.7	5	26	192	2	0.096
5KP17A	5KP17CA	17	18.9	20.9	5	27.6	181	2	0.097
5KP18A	5KP18CA	18	20	22.1	5	29.2	171	2	0.098
5KP20A	5KP20CA	20	22.2	24.5	5	32.4	154	2	0.099
5KP22A	5KP22CA	22	24.4	26.9	5	35.5	141	2	0.100
5KP24A	5KP24CA	24	26.7	29.5	5	38.9	129	2	0.101
5KP26A	5KP26CA	26	28.9	31.9	5	42.1	119	2	0.101
5KP28A	5KP28CA	28	31.1	34.4	5	45.4	110	2	0.102
5KP30A	5KP30CA	30	33.3	36.8	5	48.4	103	2	0.103
5KP33A	5KP33CA	33	36.7	40.6	5	53.3	93.8	2	0.104
5KP36A	5KP36CA	36	40	44.2	5	58.1	86.1	2	0.104
5KP40A	5KP40CA	40	44.4	49.1	5	64.5	77.5	2	0.105
5KP43A	5KP43CA	43	47.8	52.8	5	69.4	72	2	0.105
5KP45A	5KP45CA	45	50	55.3	5	72.7	68.8	2	0.106
5KP48A	5KP48CA	48	53.3	58.9	5	77.4	64.6	2	0.106
5KP51A	5KP51CA	51	56.7	62.7	5	82.4	60.7	2	0.107
5KP54A	5KP54CA	54	60	66.3	5	87.1	57.4	2	0.107
5KP58A	5KP58CA	58	64.4	71.2	5	94	53.4	2	0.107
5KP60A	5KP60CA	60	66.7	73.7	5	97	51.7	2	0.108
5KP64A	5KP64CA	64	71.1	78.6	5	103	48.5	2	0.108
5KP70A	5KP70CA	70	77.8	86	5	113	44.2	2	0.108
5KP75A	5KP75CA	75	83.3	92.1	5	121	41.3	2	0.108
5KP78A	5KP78CA	78	86.7	95.8	5	126	39.7	2	0.108
5KP85A	5KP85CA	85	94.4	104	5	137	36.5	2	0.110
5KP90A	5KP90CA	90	100	111	5	146	34.2	2	0.110

ELECTRICAL CHARACTERISTICS ($T_A=25^\circ\text{C}$ unless otherwise noted)

PART NUMBER		Reverse Stand-Off Voltage	Breakdown Voltage V_{BR} @ I_T ¹		Test Current	Maximum Clamping Voltage V_C @ I_{PP}	Maximum Peak Pulse Current ²	Maximum Reverse Leakage I_R @ V_{RWM}	Maximum Temperature Coefficient of V_{BR}
			Min.	Max.					
DIRECTIONAL		V_{RWM}	V_{BR}		I_T	V_C	I_{PP}	I_R	-
Uni	Bi	V	V		mA	V	A	uA	%/°C
5KP100A	5KP100CA	100	111	123	5	162	30.9	2	0.110
5KP110A	5KP110CA	110	122	135	5	177	28.2	2	0.112
5KP120A	5KP120CA	120	133	147	5	193	26.4	2	0.110
5KP130A	5KP130CA	130	144	159	5	209	24.4	2	0.110
5KP150A	5KP150CA	150	167	185	5	243	21	2	0.110
5KP160A	5KP160CA	160	178	197	5	259	19.7	2	0.110
5KP170A	5KP170CA	170	189	209	5	275	18.5	2	0.110
5KP180A	5KP180CA	180	200	221	5	292	17.5	2	0.110
5KP190A	5KP190CA	190	211	233	5	310	16.5	2	0.110
5KP200A	5KP200CA	200	222	246	5	329.2	15.5	2	0.110
5KP210A	5KP210CA	210	233	258	5	349.5	14.6	2	0.110
5KP220A	5KP220CA	220	244	270	5	371.1	13.7	2	0.110
5KP250A	5KP250CA	250	277	306	5	425	12	2	0.110

Notes:

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 derate per Fig. 2.
3. All terms and symbols are consistent with ANSI/IEEE C62.35.

TYPICAL CHARACTERISTICS

Fig. 1 - Peak Pulse Power Rating Curve

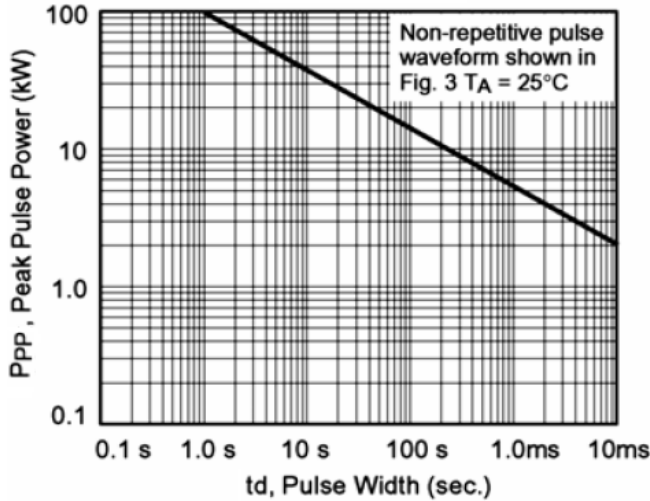


Fig. 2 - Pulse Derating Curve

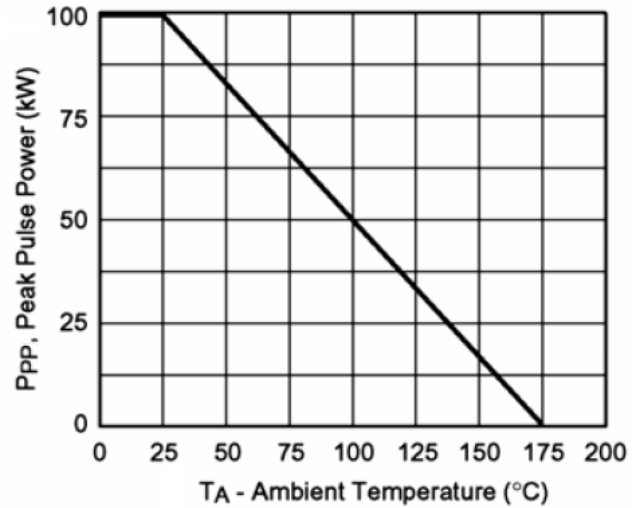


Fig. 3 - Pulse Waveform

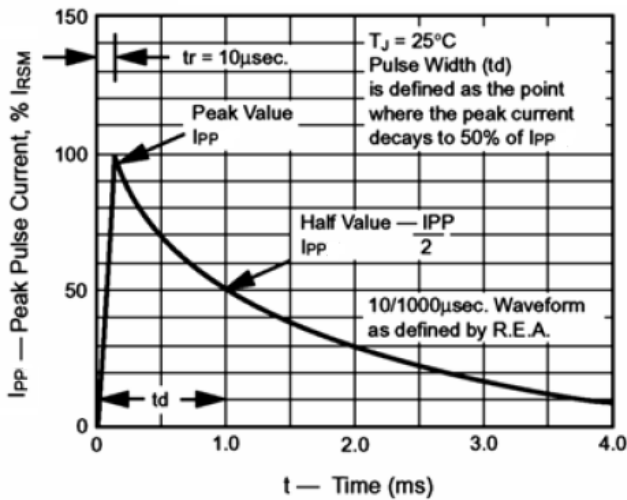


Fig. 4 - Typical Junction Capacitance

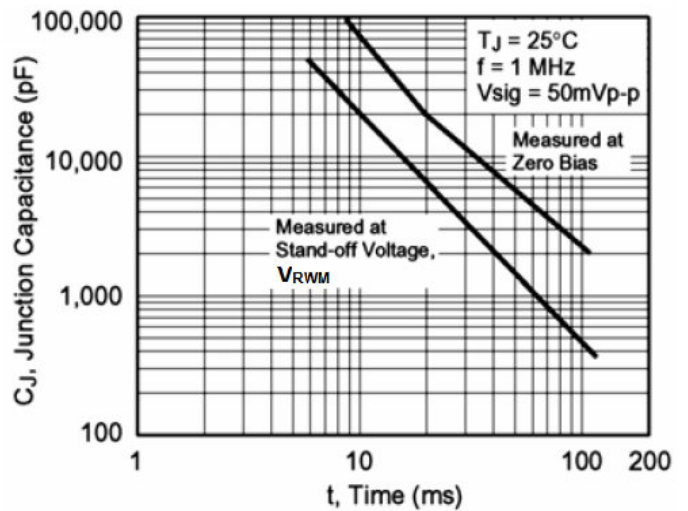


Fig. 5 - Steady State Power Derating Curve

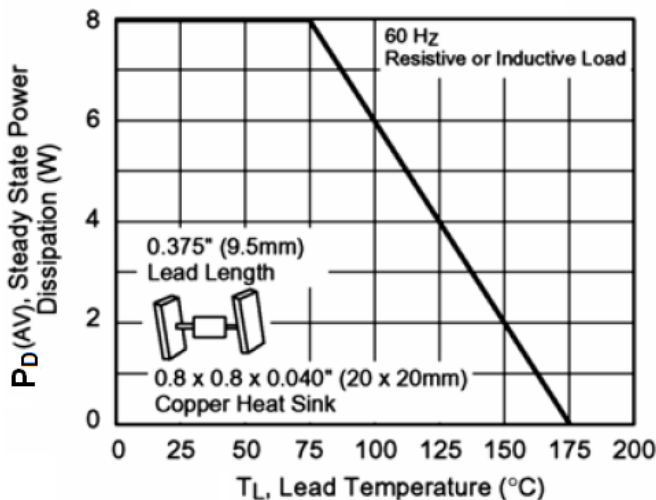


Fig. 6 - Maximum Non-repetitive Forward Surge Current

