

FEATURES

- | Plastic package has underwriters laboratory
- | Flammability classification 94V-0
- | Glass passivated junction
- | 5000W peak pulse power capability on 10/1000 μ s waveform
- | Excellent clamping capability
- | Low incremental surge resistance
- | Fast response time: typically less than 1.0ps from 0 Volts to V_{BR}
- | Typical IR less than 2 μ A above 10V
- | Molded plastic over glass passivated junction
- | Polarity: Color band denoted cathode except bidirec
- | Mounting Positing: Any


R-6/P-600


Bi-directional



Uni-directional

Schematic Symbol

APPROVALS

RoHS	Compliance with 2011/65/EU
HF	Compliance with IEC61249-2-21:2003

ABSOLUTE MAXIMUM RATINGS ($T_A=25^{\circ}\text{C}$)

Parameter	Symbol	Value	Unit
Operating junction and storage temperature range	T_J, T_{STG}	-55 to +175	$^{\circ}\text{C}$
Peak pulse power dissipation at 10/1000 μ s waveform	P_{PP}	5000	W
Steady state power dissipation at $T_L=75^{\circ}\text{C}$	$P_{M(AV)}$	8.0	
Maximum instantaneous forward voltage at 100A for unidirectional	V_F	5.0	V
Peak forward surge current, 8.3ms single half sine-wave for unidirectional only	I_{FSM}	400	A
Typical thermal resistance junction to lead	$R_{\theta JL}$	8.0	$^{\circ}\text{C}/\text{W}$
Typical thermal resistance, junction to ambient	$R_{\theta JA}$	40	

ELECTRICAL CHARACTERISTICS(T_A=25°C)

Part Number		Marking		V _R	V _{BR@I_T}		I _T	V _{C@I_{PP}}	I _{PP} ^①	I _{R@V_R}
Uni-Polar	Bi-Polar	Uni-Polar	Bi-Polar	V	Min.(V)	Max.(V)	mA	V	A	Max.(μA)
5KP5.0A	5KP5.0CA	5KP5.0A	5KP5.0CA	5.0	6.40	7.00	50	9.2	554.3	5000
5KP6.0A	5KP6.0CA	5KP6.0A	5KP6.0CA	6.0	6.67	7.37	50	10.3	495.1	5000
5KP6.5A	5KP6.5CA	5KP6.5A	5KP6.5CA	6.5	7.22	7.98	50	11.2	455.4	2000
5KP7.0A	5KP7.0CA	5KP7.0A	5KP7.0CA	7.0	7.78	8.60	50	12.0	425.0	1000
5KP7.5A	5KP7.5CA	5KP7.5A	5KP7.5CA	7.5	8.33	9.21	5	12.9	395.3	250
5KP8.0A	5KP8.0CA	5KP8.0A	5KP8.0CA	8.0	8.89	9.83	5	13.6	375.0	150
5KP8.5A	5KP8.5CA	5KP8.5A	5KP8.5CA	8.5	9.44	10.40	5	14.4	354.2	50
5KP9.0A	5KP9.0CA	5KP9.0A	5KP9.0CA	9.0	10.0	11.1	5	15.4	331.2	20
5KP10A	5KP10CA	5KP10A	5KP10CA	10.0	11.10	12.30	5	17.0	300.0	15
5KP11A	5KP11CA	5KP11A	5KP11CA	11.0	12.2	13.5	5	18.2	280.2	2
5KP12A	5KP12CA	5KP12A	5KP12CA	12.0	13.30	14.70	5	19.9	256.3	2
5KP13A	5KP13CA	5KP13A	5KP13CA	13.0	14.4	15.9	5	21.5	237.2	2
5KP14A	5KP14CA	5KP14A	5KP14CA	14.0	15.6	17.2	5	23.2	219.8	2
5KP15A	5KP15CA	5KP15A	5KP15CA	15.0	16.7	18.5	5	24.4	209.0	2
5KP16A	5KP16CA	5KP16A	5KP16CA	16.0	17.8	19.7	5	26.0	196.2	2
5KP17A	5KP17CA	5KP17A	5KP17CA	17.0	18.9	20.9	5	27.6	184.8	2
5KP18A	5KP18CA	5KP18A	5KP18CA	18.0	20.0	22.1	5	29.2	174.7	2
5KP20A	5KP20CA	5KP20A	5KP20CA	20.0	22.2	24.5	5	32.4	157.4	2
5KP22A	5KP22CA	5KP22A	5KP22CA	22.0	24.4	26.9	5	35.5	143.7	2
5KP24A	5KP24CA	5KP24A	5KP24CA	24.0	26.7	29.5	5	38.9	131.1	2
5KP26A	5KP26CA	5KP26A	5KP26CA	26.0	28.9	31.9	5	42.1	121.1	2
5KP28A	5KP28CA	5KP28A	5KP28CA	28.0	31.1	34.4	5	45.4	112.3	2
5KP30A	5KP30CA	5KP30A	5KP30CA	30.0	33.3	36.8	5	48.4	105.4	2
5KP33A	5KP33CA	5KP33A	5KP33CA	33.0	36.7	40.6	5	53.3	95.7	2
5KP36A	5KP36CA	5KP36A	5KP36CA	36.0	40.0	44.2	5	58.1	87.8	2
5KP40A	5KP40CA	5KP40A	5KP40CA	40.0	44.4	49.1	5	64.5	79.1	2

Part Number		Marking		V_R	$V_{BR}@I_T$		I_T	$V_C@I_{PP}$	$I_{PP}^{①}$	$I_R@V_R$
Uni-Polar	Bi-Polar	Uni-Polar	Bi-Polar	V	Min.(V)	Max.(V)	mA	V	A	Max.(μ A)
5KP43A	5KP43CA	5KP43A	5KP43CA	43.0	47.8	52.8	5	69.4	73.5	2
5KP45A	5KP45CA	5KP45A	5KP45CA	45.0	50.0	55.3	5	72.7	70.2	2
5KP48A	5KP48CA	5KP48A	5KP48CA	48.0	53.3	58.9	5	77.4	65.9	2
5KP51A	5KP51CA	5KP51A	5KP51CA	51.0	56.7	62.7	5	82.4	61.9	2
5KP54A	5KP54CA	5KP54A	5KP54CA	54.0	60.0	66.3	5	87.1	58.6	2
5KP58A	5KP58CA	5KP58A	5KP58CA	58.0	64.4	71.2	5	93.6	54.5	2
5KP60A	5KP60CA	5KP60A	5KP60CA	60.0	66.7	73.7	5	96.8	52.7	2
5KP64A	5KP64CA	5KP64A	5KP64CA	64.0	71.1	78.6	5	103.0	49.5	2
5KP70A	5KP70CA	5KP70A	5KP70CA	70.0	77.8	86.0	5	113.0	45.1	2
5KP75A	5KP75CA	5KP75A	5KP75CA	75.0	83.3	92.1	5	121.0	42.1	2
5KP78A	5KP78CA	5KP78A	5KP78CA	78.0	86.7	95.8	5	126.0	40.5	2
5KP85A	5KP85CA	5KP85A	5KP85CA	85.0	94.4	104.0	5	137.0	37.2	2
5KP90A	5KP90CA	5KP90A	5KP90CA	90.0	100.0	111.0	5	146.0	34.9	2
5KP100A	5KP100CA	5KP100A	5KP100CA	100.0	111.0	123.0	5	162.0	31.5	2
5KP110A	5KP110CA	5KP110A	5KP110CA	110.0	122.0	135.0	5	177.0	28.8	2
5KP120A	5KP120CA	5KP120A	5KP120CA	120.0	133.0	147.0	5	193.0	26.4	2
5KP130A	5KP130CA	5KP130A	5KP130CA	130.0	144.0	159.0	5	209.0	24.4	2
5KP150A	5KP150CA	5KP150A	5KP150CA	150.0	167.0	185.0	5	243.0	21.0	2
5KP160A	5KP160CA	5KP160A	5KP160CA	160.0	178.0	197.0	5	259.0	19.7	2
5KP170A	5KP170CA	5KP170A	5KP170CA	170.0	189.0	209.0	5	275.0	18.5	2
5KP180A	5KP180CA	5KP180A	5KP180CA	180.0	200.0	221.0	5	289.0	17.5	2
5KP190A	5KP190CA	5KP190A	5KP190CA	190.0	211.0	233.0	5	310.0	16.5	2
5KP200A	5KP200CA	5KP200A	5KP200CA	200.0	222.0	246.0	5	329.2	15.5	2
5KP210A	5KP210CA	5KP210A	5KP210CA	210.0	233.0	258.0	5	349.5	14.6	2
5KP220A	5KP220CA	5KP220A	5KP220CA	220.0	244.0	270.0	5	371.1	13.7	2
5KP250A	5KP250CA	5KP250A	5KP250CA	250.0	277.0	306.0	5	425.0	12.0	2

Note:

 ①.Surge waveform:10/1000 μ s

 V_R : Stand-off voltage -- Maximum voltage that can be applied

 V_{BR} : Breakdown voltage

 V_C : Clamping voltage -- Peak voltage measured across the suppressor at a specified I_{PP}
 I_R : Reverse leakage current

RATINGS AND CHARACTERISTICS CURVES ($T_A = 25^\circ\text{C}$)

Figure 1: V- I curve characteristics (Uni-directional)

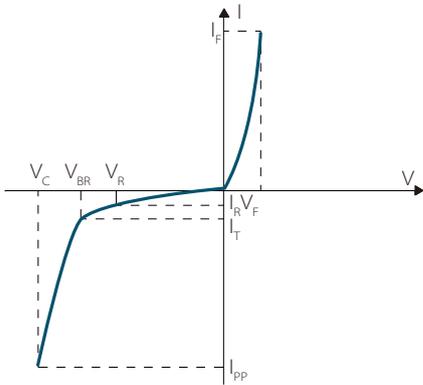


Figure 2: V- I curve characteristics (Bi-directional)

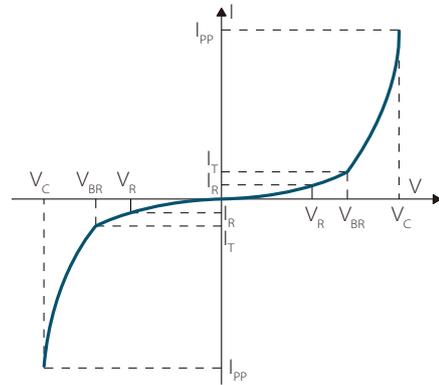


Figure 3: Pulse waveform

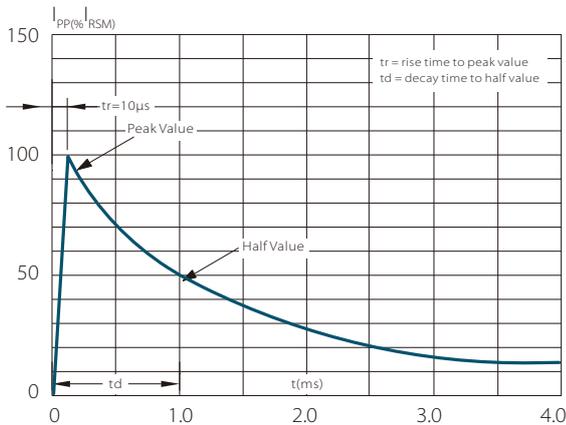
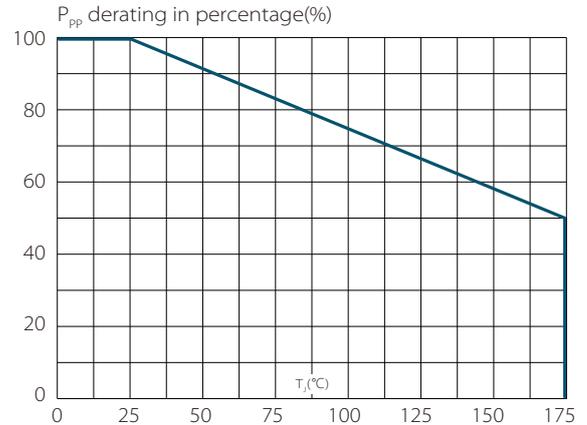
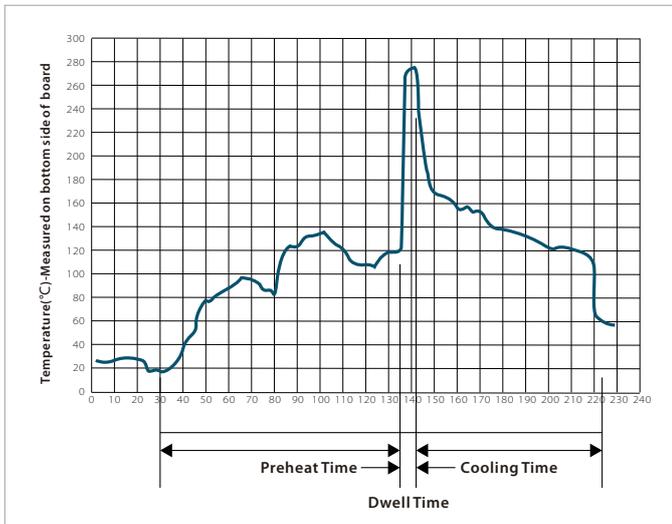


Figure 4: Power derating curve

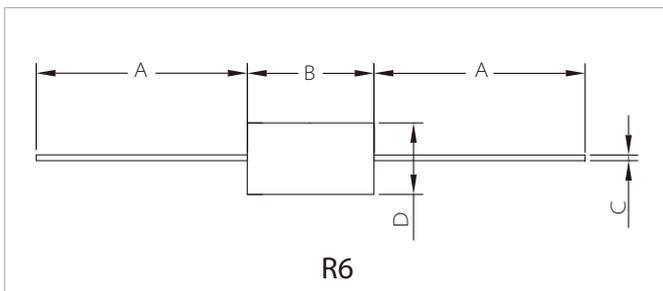


WAVE SOLDERING



Wave Parameter		Lead-free assembly
Pre Heat	Temperature Min	100°C
	Temperature Max	150°C
	Time(min to max)	60 – 180 secs
Solder pot Temperature		280°C Max
Solder Dwell Time		2-5 seconds

PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	25.40	-	1.000	-
B	8.60	9.40	0.339	0.370
C	1.20	1.40	0.047	0.055
D	8.60	9.10	0.339	0.358

ORDERING INFORMATION

PART NUMBER	Component Package	PER BOX (pcs)	PER CARTON (pcs)	DESCRIPTION
5KPxxA/CA	R6/P600	300	3000	Box

To find your local partner within Semiwell's website : www.semiwell.com

©2023 Semiwell Microelectronics Co.,Ltd.

The content of this document has been carefully checked and understood. However, neither Semiwell nor its subsidiaries assume any liability whatsoever for any errors or inaccuracies of this document and the consequences thereof. Published specifications are subject to change without notice. Product suitability for any area of application must ultimately be determined by the customer. In all cases, products must never be operated outside their published specifications. Semiwell does not guarantee the availability of all published products. This disclaimer shall be governed by substantive Chinese law and resulting disputes shall be settled by the courts at the place of business of Semiwell. Latest publications and a complete disclaimer can be downloaded from the Semiwell website. All trademarks recognized.