

0.6KP Series

SURGE SUPPRESSOR

Features

- Junction passivation optimized design
passivated anisotropic rectifier technology
- 600W peak pulse power capability at
10×1000μs waveform.
- Very fast response time
- Applicable voltage: 3.3-440 V
- AEC-Q101 qualified
- Compliant to RoHS directive 2002/96/EC

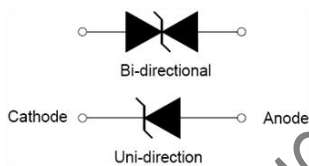
Mechanical Characteristics

- Case:SMB/DO-214AA
- Molding compound meets UL 94V-0 flammability rating
- Base P/NHE3-RoHS compliant,AEC-Q101 qualified
- Terminals:Matte tin plated leads,solderable per
- J-STD-002 and JESD22-B102

Schematic And Configuration



SMB



Symbol

Primary Characteristics	
V_{RWM}	3.3 V to 440 V
P_{PPM}	600 W
$P_{M(AV)}$	5.0W
V_F	5.0 V
$T_{J\ max}$	150 °C

Absolute Maximum Ratings ($T_C=25^{\circ}C$, RH=45%-75%, unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak pulse power dissipation on 10/1000us waveform	P_{PPM}	600	Watts
Maximum Instantaneous Forward Voltage at 50A for Unidirectional	V_F	5.0	Voltage
Steady state power dissipation at $T_L=75^{\circ}C$	$P_{M(AV)}$	5.0	Watts
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55 to +150	$^{\circ}C$

Electrical Characteristics (Ta=25°C, unless otherwise noted)

Part Number		V _R	I _R @V _R	V _{BR} @I _T		I _T	V _C @I _{PP}	I _{PP} ^①
Uni-Polar	Bi-Polar	V	μA	min(V)	max(V)	mA	max(V)	A
0.6KP3.3A	0.6KP3.3CA	3.3	800	4.10	5.60	10	7.3	82.5
0.6KP5.0A	0.6KP5.0CA	5.0	800	6.40	7.00	10	9.2	65.2
0.6KP6.0A	0.6KP6.0CA	6.0	800	6.67	7.37	10	10.3	58.3
0.6KP6.5A	0.6KP6.5CA	6.5	500	7.22	7.98	10	11.2	53.6
0.6KP7.0A	0.6KP7.0CA	7.0	200	7.78	8.60	10	12.0	50.0
0.6KP7.5A	0.6KP7.5CA	7.5	100	8.33	9.21	1	12.9	46.5
0.6KP8.0A	0.6KP8.0CA	8.0	50	8.89	9.83	1	13.6	44.1
0.6KP8.5A	0.6KP8.5CA	8.5	20	9.44	10.40	1	14.4	41.7
0.6KP9.0A	0.6KP9.0CA	9.0	10	10.00	11.10	1	15.4	39.0
0.6KP10A	0.6KP10CA	10	10	11.10	12.30	1	17.0	35.3
0.6KP11A	0.6KP11CA	11	1	12.20	13.50	1	18.2	33.0
0.6KP12A	0.6KP12CA	12	1	13.30	14.70	1	19.9	30.2
0.6KP13A	0.6KP13CA	13	1	14.40	15.90	1	21.5	27.9
0.6KP14A	0.6KP14CA	14	1	15.60	17.20	1	23.2	25.9
0.6KP15A	0.6KP15CA	15	1	16.70	18.50	1	24.4	24.6
0.6KP16A	0.6KP16CA	16	1	17.80	19.70	1	26.0	23.1
0.6KP17A	0.6KP17CA	17	1	18.90	20.90	1	27.6	21.8
0.6KP18A	0.6KP18CA	18	1	20.00	22.10	1	29.2	20.6
0.6KP20A	0.6KP20CA	20	1	22.20	24.50	1	32.4	18.6
0.6KP22A	0.6KP22CA	22	1	24.40	26.90	1	35.5	16.9
0.6KP24A	0.6KP24CA	24	1	26.70	29.50	1	38.9	15.4
0.6KP26A	0.6KP26CA	26	1	28.90	31.90	1	42.1	14.3
0.6KP28A	0.6KP28CA	28	1	31.10	34.40	1	45.4	13.2
0.6KP30A	0.6KP30CA	30	1	33.30	36.80	1	48.4	12.4
0.6KP33A	0.6KP33CA	33	1	36.70	40.60	1	53.3	11.3
0.6KP36A	0.6KP36CA	36	1	40.00	44.20	1	58.1	10.4
0.6KP40A	0.6KP40CA	40	1	44.40	49.10	1	64.5	9.3
0.6KP43A	0.6KP43CA	43	1	47.80	52.80	1	69.4	8.7
0.6KP45A	0.6KP45CA	45	1	50.00	55.30	1	72.7	8.3
0.6KP48A	0.6KP48CA	48	1	53.30	58.90	1	77.4	7.8

Part Number		V _R	I _R @V _R	V _{BR} @I _T		I _T	V _C @I _{PP}	I _{PP} ^①
Uni-Polar	Bi-Polar	V	μA	min(V)	max(V)	mA	max(V)	A
0.6KP51A	0.6KP51CA	51	1	56.70	62.70	1	82.4	7.3
0.6KP54A	0.6KP54CA	54	1	60.00	66.30	1	87.1	6.9
0.6KP58A	0.6KP58CA	58	1	64.40	71.20	1	93.6	6.4
0.6KP60A	0.6KP60CA	60	1	66.70	73.70	1	96.8	6.2
0.6KP64A	0.6KP64CA	64	1	71.10	78.60	1	103.0	5.8
0.6KP70A	0.6KP70CA	70	1	77.80	86.00	1	113.0	5.3
0.6KP75A	0.6KP75CA	75	1	83.30	92.10	1	121.0	5.0
0.6KP78A	0.6KP78CA	78	1	86.70	95.80	1	126.0	4.8
0.6KP85A	0.6KP85CA	85	1	94.40	104.0	1	137.0	4.4
0.6KP90A	0.6KP90CA	90	1	100.0	111.0	1	146.0	4.1
0.6KP100A	0.6KP100CA	100	1	111.0	123.0	1	162.0	3.7
0.6KP110A	0.6KP110CA	110	1	122.0	135.0	1	177.0	3.4
0.6KP120A	0.6KP120CA	120	1	133.0	147.0	1	193.0	3.1
0.6KP130A	0.6KP130CA	130	1	144.0	159.0	1	209.0	2.9
0.6KP150A	0.6KP150CA	150	1	167.0	185.0	1	243.0	2.5
0.6KP160A	0.6KP160CA	160	1	178.0	197.0	1	259.0	2.3
0.6KP170A	0.6KP170CA	170	1	189.0	209.0	1	275.0	2.2
0.6KP180A	0.6KP180CA	180	1	201.0	222.0	1	292.0	2.1
0.6KP190A	0.6KP190CA	190	1	211.0	234.0	1	307.0	2.0
0.6KP200A	0.6KP200CA	200	1	224.0	247.0	1	324.0	1.9
0.6KP210A	0.6KP210CA	210	1	233.0	258.0	1	337.0	1.8
0.6KP220A	0.6KP220CA	220	1	246.0	272.0	1	356.0	1.7
0.6KP250A	0.6KP250CA	250	1	279.0	309.0	1	405.0	1.5
0.6KP300A	0.6KP300CA	300	1	335.0	371.0	1	486.0	1.3
0.6KP350A	0.6KP350CA	350	1	391.0	432.0	1	567.0	1.1
0.6KP400A	0.6KP400CA	400	1	447.0	494.0	1	648.0	0.9
0.6KP440A	0.6KP440CA	440	1	492.0	543.0	1	713.0	0.8

① Surge waveform: 10/1000μs

V_{BR}: Breakdown Voltage

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

V_C: Clamping Voltage -- Peak voltage measured across the suppressor at a specified I_{PP}

I_R: Reverse Leakage Current

Ratings And Characteristics Curves ($T_A=25^{\circ}\text{C}$, unless otherwise noted)

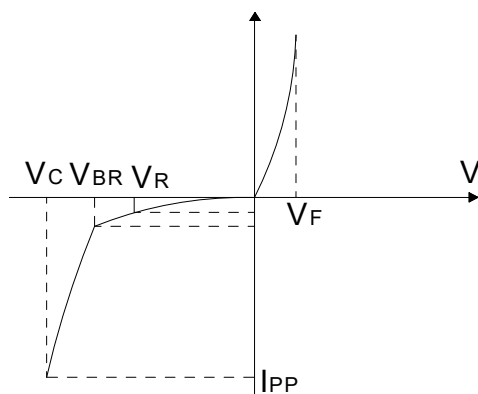


FIG.1: V- I curve characteristics (Uni-directional)

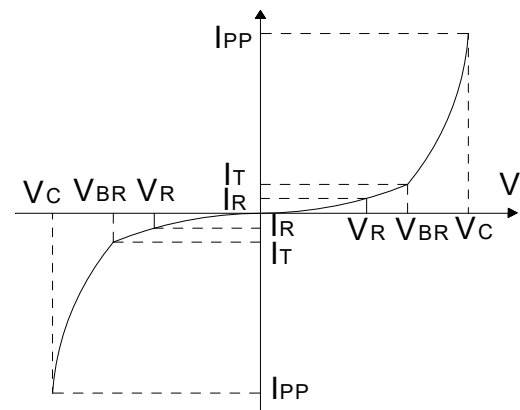


FIG.2: V- I curve characteristics (Bi-directional)

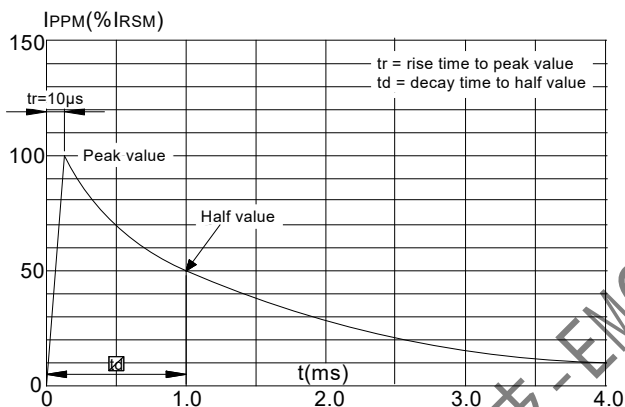


FIG.3: Pulse waveform

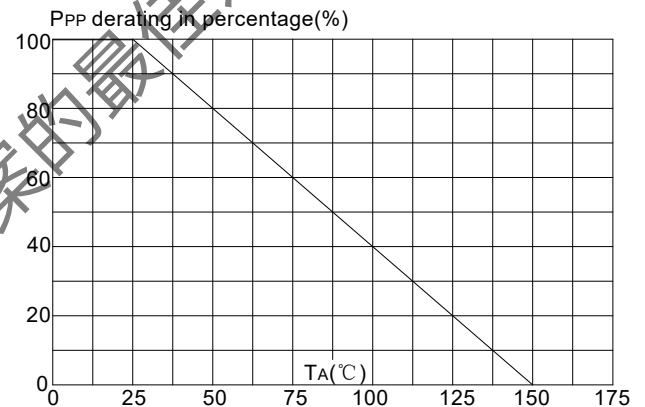


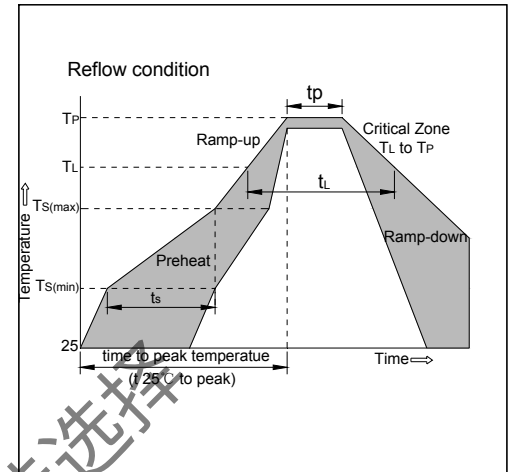
FIG.4: Pulse derating curve

Ordering Information

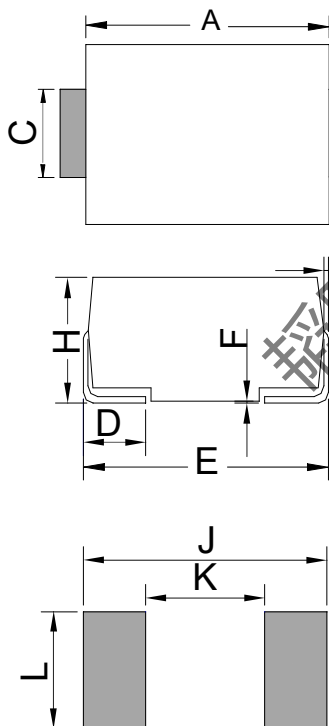
0.6KP 600W@10/1000US	XX	(CA)A
V_R	bi-directional polarity uni-directional polarity	

Soldering Parameters

Reflow Condition		Pb-Free assembly (see figure at right)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150°C
	-Temperature Max($T_{s(max)}$)	+200°C
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquidus Temp (T_L) to peak)		3°C/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature(T_L)(Liquidus)	+217°C
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_p)		+260(+0/-5)°C
Time within 5°C of actual Peak Temp (t_p)		20-40secs.
Ramp-down Rate		6°C/sec. Max
Time 25°C to Peak Temp (T_p)		8 min. Max
Do not exceed		+260°C



Package Mechanical Data



DO-214AA (SMB)

Ref.	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	4.25	4.75	0.167	0.187
B	3.30	3.94	0.130	0.155
C	1.85	2.21	0.073	0.087
D	0.76	1.52	0.030	0.060
E	5.08	5.59	0.200	0.220
F	0.051	0.203	0.002	0.008
G	0.15	0.31	0.006	0.012
H	2.11	2.44	0.083	0.096
J	6.80		0.270	
K		2.60		0.100
L	2.40		0.090	

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