

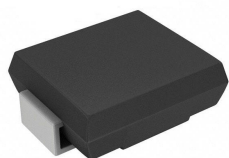
Features

- Junction passivation optimized design passivated anisotropic rectifier technology
- 3000W peak pulse power capability at 10×1000μs waveform.
- Very fast response time
- Meets MSL-1, per J-STD-020, LF maximum peak of 260°C
- AEC-Q101 qualified
- Compliant to RoHS directive 2002/96/EC

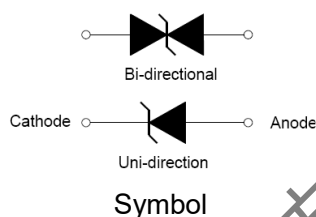
Mechanical Characteristics

- Case: DO-214AB (SMC)
- 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



SMC



Primary Characteristics

V_{RWM}	5 V to 220 V
P_{PPM}	3000 W
$P_{M(AV)}$	6.5 W
I_{FSM}	300 A
$T_J \text{ max.}$	150 °C

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

Parameter	Symbol	Value	Unit
Storage and operating junction temperature range	T_{STG}/T_J	-55 to +150	°C
Steady state power dissipation at $T_L=75^\circ\text{C}$	$P_{M(AV)}$	6.5	W
Peak pulse power dissipation on 10/1000μs waveform	P_{PP}	3000	W
Maximum instantaneous forward voltage at 100A for unidirectional only	V_F	5	V
Peak forward surge current, 8.3ms single half sine wave (Note 1)	I_{FSM}	300	A
Typical thermal resistance junction to lead	$R_{\theta JL}$	15	°C/W
Typical thermal resistance junction to ambient	$R_{\theta JA}$	75	°C/W

Notes:

Measured on 8.3ms single half sine wave or equivalent square wave for unidirectional device only, duty cycle=4 per minute maximum

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
3KP5.0A	3KP5.0CA	5.0	800	6.40	7.00	10	9.2	326.1
3KP6.0A	3KP6.0CA	6.0	800	6.67	7.37	10	10.3	291.3
3KP6.5A	3KP6.5CA	6.5	500	7.22	7.98	10	11.2	267.9
3KP7.0A	3KP7.0CA	7.0	200	7.78	8.60	10	12.0	250.0
3KP7.5A	3KP7.5CA	7.5	100	8.33	9.21	1	12.9	232.6
3KP8.0A	3KP8.0CA	8.0	50	8.89	9.83	1	13.6	220.6
3KP8.5A	3KP8.5CA	8.5	20	9.44	10.40	1	14.4	208.3
3KP9.0A	3KP9.0CA	9.0	10	10.00	11.10	1	15.4	194.8
3KP10A	3KP10CA	10	5	11.10	12.30	1	17.0	176.5
3KP11A	3KP11CA	11	1	12.20	13.50	1	18.2	164.8
3KP12A	3KP12CA	12	1	13.30	14.70	1	19.9	150.8
3KP13A	3KP13CA	13	1	14.40	15.90	1	21.5	139.5
3KP14A	3KP14CA	14	1	15.60	17.20	1	23.2	129.3
3KP15A	3KP15CA	15	1	16.70	18.50	1	24.4	123.0
3KP16A	3KP16CA	16	1	17.80	19.70	1	26.0	115.4
3KP17A	3KP17CA	17	1	18.90	20.90	1	27.6	108.7
3KP18A	3KP18CA	18	1	20.00	22.10	1	29.2	102.7
3KP20A	3KP20CA	20	1	22.20	24.50	1	32.4	92.6
3KP22A	3KP22CA	22	1	24.40	26.90	1	35.5	84.5
3KP24A	3KP24CA	24	1	26.70	29.50	1	38.9	77.1
3KP26A	3KP26CA	26	1	28.90	31.90	1	42.1	71.3
3KP28A	3KP28CA	28	1	31.10	34.40	1	45.4	66.1
3KP30A	3KP30CA	30	1	33.30	36.80	1	48.4	62.0
3KP33A	3KP33CA	33	1	36.70	40.60	1	53.3	56.3
3KP36A	3KP36CA	36	1	40.00	44.20	1	58.1	51.6
3KP40A	3KP40CA	40	1	44.40	49.10	1	64.5	46.5
3KP43A	3KP43CA	43	1	47.80	52.80	1	69.4	43.2
3KP45A	3KP45CA	45	1	50.00	55.30	1	72.7	41.3
3KP48A	3KP48CA	48	1	53.30	58.90	1	77.4	38.8
3KP51A	3KP51CA	51	1	56.70	62.70	1	82.4	36.4
3KP54A	3KP54CA	54	1	60.00	66.30	1	87.1	34.4

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
3KP58A	3KP58CA	58	1	64.40	71.20	1	93.6	32.1
3KP60A	3KP60CA	60	1	66.70	73.70	1	96.8	31.0
3KP64A	3KP64CA	64	1	71.10	78.60	1	103.0	29.1
3KP70A	3KP70CA	70	1	77.80	86.00	1	113.0	26.5
3KP75A	3KP75CA	75	1	83.30	92.10	1	121.0	24.8
3KP78A	3KP78CA	78	1	86.70	95.80	1	126.0	23.8
3KP85A	3KP85CA	85	1	94.40	104.0	1	137.0	21.9
3KP90A	3KP90CA	90	1	100.0	111.0	1	146.0	20.5
3KP100A	3KP100CA	100	1	111.0	123.0	1	162.0	18.5
3KP110A	3KP110CA	110	1	122.0	135.0	1	177.0	16.9
3KP120A	3KP120CA	120	1	133.0	147.0	1	193.0	15.5
3KP130A	3KP130CA	130	1	144.0	159.0	1	209.0	14.4
3KP150A	3KP150CA	150	1	167.0	185.0	1	243.0	12.3
3KP160A	3KP160CA	160	1	178.0	197.0	1	259.0	11.6
3KP170A	3KP170CA	170	1	189.0	209.0	1	275.0	10.9
3KP180A	3KP180CA	180	1	201.0	222.0	1	292.0	10.3
3KP190A	3KP190CA	190	1	211.0	234.0	1	307.0	9.7
3KP200A	3KP200CA	200	1	224.0	247.0	1	324.0	9.3
3KP210A	3KP210CA	210	1	233.0	258.0	1	337.0	8.8
3KP220A	3KP220CA	220	1	244.0	270.0	1	356.0	8.4

① Surge waveform: 10/1000μs

V_R: Stand-off voltage -- Maximum voltage that can be appliedV_{BR}: Breakdown voltageV_C: Clamping voltage -- Peak voltage measured across the suppressor at a specified I_{PP}

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

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

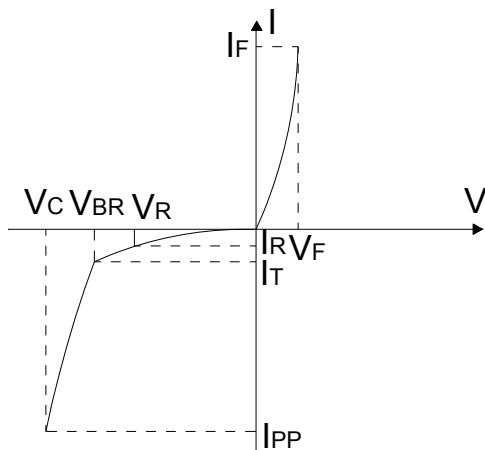


FIG.2:V- I curve characteristics (Bi-directional)

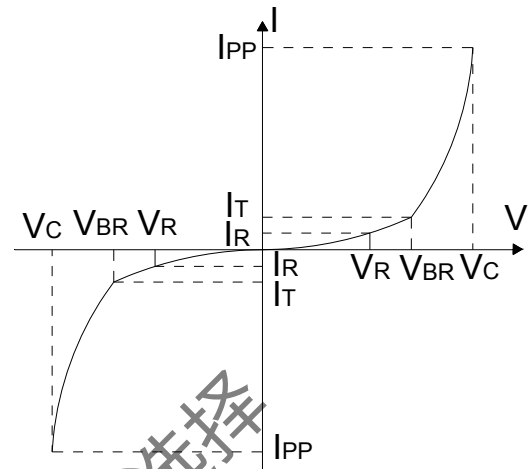


FIG.3: Pulse waveform

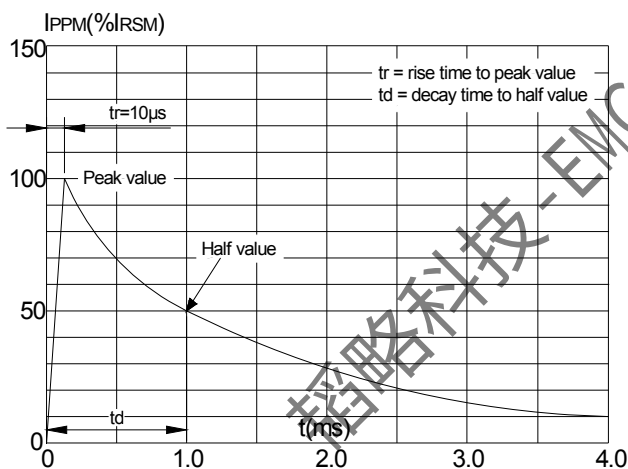
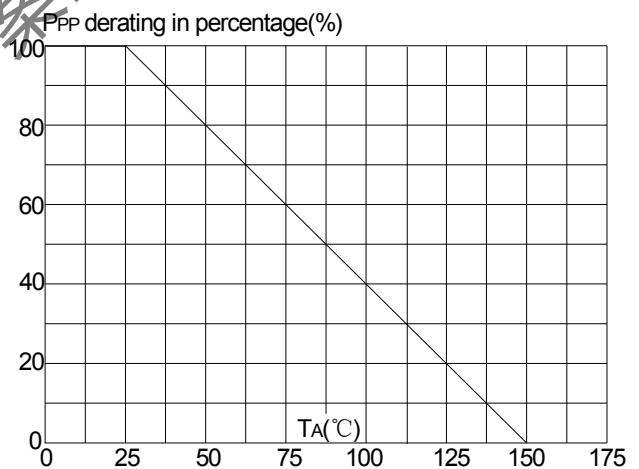


FIG.4: Pulse derating curve

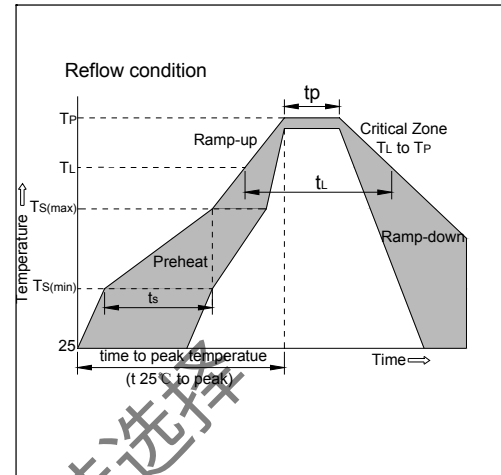


Ordering Information

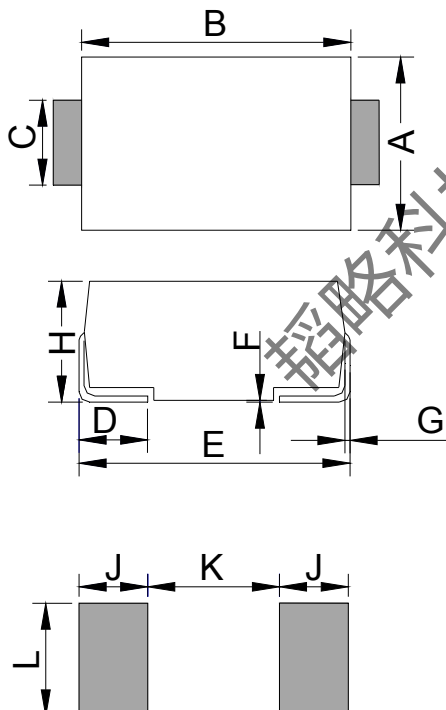
3KP 3000W@10/1000US	XX V_R	(CA)A bi-directional polarity uni-directional polarity
--	---------------------------------------	---

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-214AB (SMC)

Ref.	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	5.75	6.25	0.226	0.246
B	6.90	7.40	0.272	0.291
C	2.75	3.25	0.108	0.128
D	0.95	1.52	0.037	0.060
E	7.70	8.20	0.303	0.323
F	0.051	0.203	0.002	0.008
G	0.15	0.31	0.006	0.012
H	2.15	2.62	0.085	0.103
J	2.40		0.094	
K		4.20		0.165
L	3.30		0.130	

Contact Information

SHENZHEN TOP-FLIGHT TECHNOLOGY CO.,LTD

4th Floor, C Building, Quansen Industrial Park , Bulong Road, Longhua New District, Shenzhen

Tel: 86-755-82908191 Fax: 86-755-82908701 Email: kang@topleve.com

Website: <http://www.topleve.com>