THE DATASHEET OF

S5KL-TP

1000W, 9V - 40V Surface Mount Transient Voltage Suppressor

FEATURES

- AEC-Q101 qualified
- Low profile package
- Ideal for automated placement
- Glass passivated junction
- Excellent clamping capability
- Fast response time: Typically less than 1.0ps
- Meets ISO 7637-2 (Pulse 1/2a/2b/3a/3b)
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

KEY PARAMETERS		
PARAMETER	**VALUE**	**UNIT**
V_{WM}	9 - 40	V
V_{BR}	10 - 49.1	V
P_{PK}	1000	W
$T_{J\ MAX}$	175	°C
Package	DO-214AA (SMB)	
Configuration	Single die	

Pb-Free RoHS COMPLIANT HALOGEN FREE

DO-214AA (SMB)

APPLICATIONS

- Protect sensitive circuit from damage by high voltage transients
- Lighting, ESD transient voltage protection of IC, system
- Inductive switching load protection of IC, system
- Electrical Fast Transient Immunity protection of IC, system

MECHANICAL DATA

- Case: DO-214AA (SMB)
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 2 whisker test
- Polarity: As marked
- Weight: 0.110g (approximately)

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)			
PARAMETER	**SYMBOL**	**VALUE**	**UNIT**
Peak power dissipation at T_A = 25°C, tp = 1ms[(1)]	P_{PK}	1000	W
Steady state power dissipation	P_D	5	W
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load	I_{FSM}	100	A
Forward Voltage @ I_F = 50A for Uni-directional only	V_F	3.5	V
Junction temperature	T_J	-55 to +175	°C
Storage temperature	T_{STG}	-55 to +175	°C

Note:

1. Non-repetitive current pulse per Fig. 3 and derated above T_A = 25°C per Fig. 2

Devices for Bipolar Applications

1. For bidirectional use CAH suffix

THERMAL PERFORMANCE

PARAMETER	SYMBOL	TYP	UNIT
Junction-to-lead thermal resistance	$R_{\Theta JL}$	20	°C/W
Junction-to-ambient thermal resistance	$R_{\Theta JA}$	100	°C/W

ELECTRICAL SPECIFICATIONS (T_A = 25°C unless otherwise noted)

Device		Device Marking Code		Breakdown Voltage @ I_T V_{BR} (V)		Test Current I_T (mA)	Stand-Off Voltage V_{WM} (V)	Maximum Reverse Leakage @V_{WM} I_D (μA)	Maximum Peak Pulse Current I_{PPM} (A)	Maximum clamping voltage @I_{PPM} V_C (V)
UNI	BI	UNI	BI	Min	Max					
SMB10J9.0AH	SMB10J9.0CAH	1KV	KVC	10.0	11.1	1	9	10	64.9	15.4
SMB10J10AH	SMB10J10CAH	1KX	KXC	11.1	12.3	1	10	8	58.8	17.0
SMB10J11AH	SMB10J11CAH	1KZ	KZC	12.2	13.5	1	11	5	54.9	18.2
SMB10J12AH	SMB10J12CAH	1LE	LEC	13.3	14.7	1	12	5	50.3	19.9
SMB10J13AH	SMB10J13CAH	1LG	LGC	14.4	15.9	1	13	5	46.5	21.5
SMB10J14AH	SMB10J14CAH	1LK	LKC	15.6	17.2	1	14	5	43.1	23.2
SMB10J15AH	SMB10J15CAH	1LM	LMC	16.7	18.5	1	15	1	41.0	24.4
SMB10J16AH	SMB10J16CAH	1LP	LPC	17.8	19.7	1	16	1	38.5	26.0
SMB10J17AH	SMB10J17CAH	1LR	LRC	18.9	20.9	1	17	1	36.2	27.6
SMB10J18AH	SMB10J18CAH	1LT	LTC	20.0	22.1	1	18	1	34.2	29.2
SMB10J20AH	SMB10J20CAH	1LV	LVC	22.2	24.5	1	20	1	30.9	32.4
SMB10J22AH	SMB10J22CAH	1LX	LXC	24.4	26.9	1	22	1	28.2	35.5
SMB10J24AH	SMB10J24CAH	1LZ	LZC	26.7	29.5	1	24	1	25.7	38.9
SMB10J26AH	SMB10J26CAH	1ME	MEC	28.9	31.9	1	26	1	23.8	42.1
SMB10J28AH	SMB10J28CAH	1MG	MGC	31.1	34.4	1	28	1	22.0	45.4
SMB10J30AH	SMB10J30CAH	1MK	MKC	33.3	36.8	1	30	1	20.7	48.4
SMB10J33AH	SMB10J33CAH	1MM	MMC	36.7	40.6	1	33	1	18.8	53.3
SMB10J36AH	SMB10J36CAH	1MP	MPC	40.0	44.2	1	36	1	17.2	58.1
SMB10J40AH	SMB10J40CAH	1MR	MRC	44.4	49.1	1	40	1	15.5	64.5

ORDERING INFORMATION

ORDERING CODE[1]	PACKAGE	PACKING
SMB10JxH	DO-214AA (SMB)	3,000 / Tape & Reel

Notes:

1. "x" defines voltage from 9V(SMB10J9.0AH) to 40V(SMB10J40CAH)

CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.1 Peak Pulse Power Rating Curve

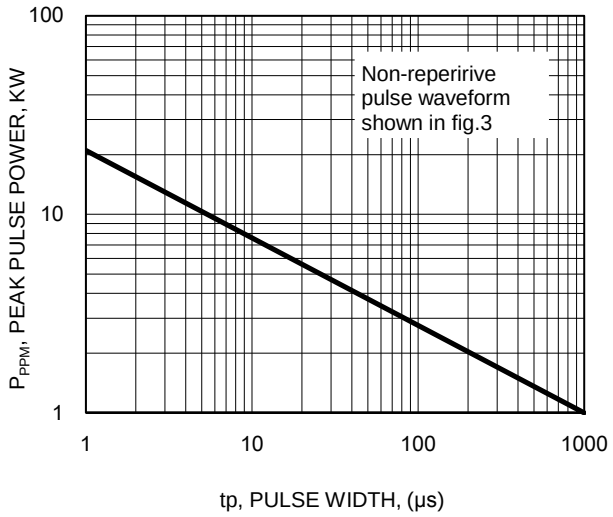


Fig.2 Pulse Derating Curve

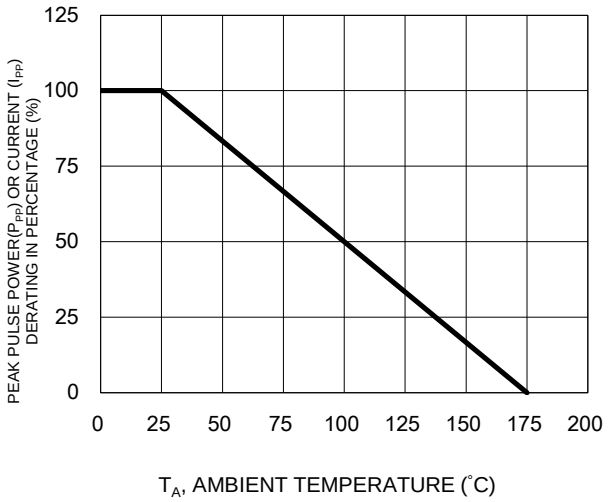


Fig.3 Clamping Power Pulse Waveform

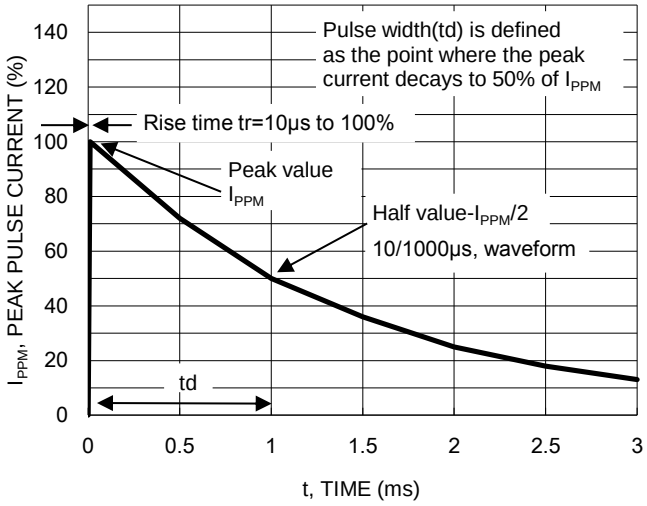
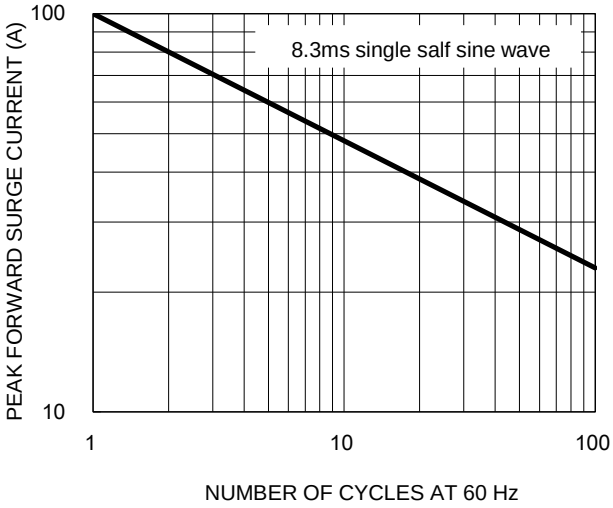
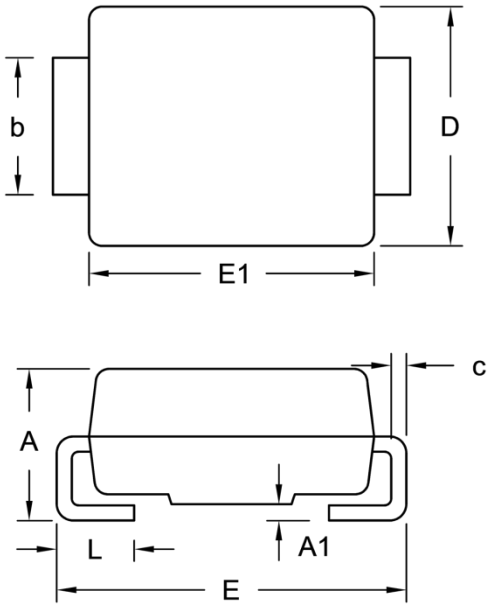


Fig.4 Maximum Non-Repetitive Forward Surge Current Unidirectional Only



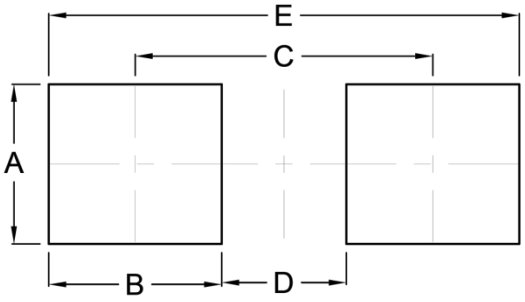
PACKAGE OUTLINE DIMENSIONS

DO-214AA (SMB)



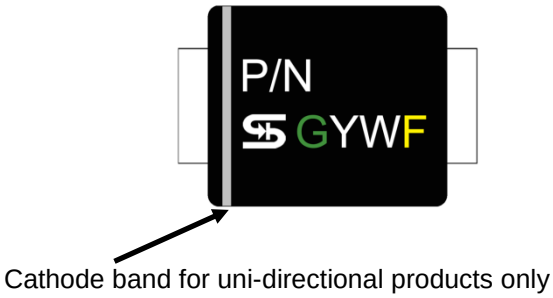
DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	1.95	2.65	0.077	0.104
A1	0.05	0.20	0.002	0.008
b	1.95	2.20	0.077	0.087
c	0.15	0.31	0.006	0.012
D	3.30	3.95	0.130	0.156
E	5.10	5.60	0.201	0.220
E1	4.05	4.60	0.159	0.181
L	0.75	1.60	0.030	0.063

SUGGESTED PAD LAYOUT



Symbol	Unit (mm)	Unit (inch)
A	2.30	0.091
B	2.50	0.098
C	4.30	0.169
D	1.80	0.071
E	6.80	0.268

MARKING DIAGRAM



Cathode band for uni-directional products only

P/N = Marking Code
G = Green Compound
YW = Date Code
F = Factory Code

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