2A, 200V - 1000V Standard Surface Mount Rectifier

FEATURES

- Glass passivated chip junction
- Ideal for automated placement
- Low reverse leakage
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

APPLICATIONS

- DC to DC converter
- Switching mode converters and inverters
- General purpose

MECHANICAL DATA

- Case: SMAF
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 1 whisker test
- Polarity: Indicated by cathode band
- Weight: 0.035g (approximately)

KEY PARAMETERS		
PARAMETER	**VALUE**	**UNIT**
I_F	2	A
V_{RRM}	200 - 1000	V
I_{FSM}	50	A
$T_{J\ MAX}$	150	°C
Package	SMAF	
Configuration	Single die	

Pb-Free RoHS COMPLIANT HALOGEN FREE

SMAF

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)								
PARAMETER		**SYMBOL**	**S2DAF-T**	**S2GAF-T**	**S2JAF-T**	**S2KAF-T**	**S2MAF-T**	**UNIT**
Marking code on the device			S2DAF	S2GAF	S2JAF	S2KAF	S2MAF	
Repetitive peak reverse voltage		V_{RRM}	200	400	600	800	1000	V
Reverse voltage, total rms value		$V_{R(RMS)}$	140	280	420	560	700	V
Forward current		I_F	2					A
Surge peak forward current single half sine-wave superimposed on rated load	t = 8.3ms	I_{FSM}	50					A
	t = 1.0ms		130					A
Junction temperature		T_J	-55 to +150					°C
Storage temperature		T_{STG}	-55 to +150					°C

THERMAL PERFORMANCE

PARAMETER	SYMBOL	TYP	UNIT
Junction-to-lead thermal resistance	$R_{\Theta JL}$	15	°C/W
Junction-to-ambient thermal resistance	$R_{\Theta JA}$	89	°C/W
Junction-to-case thermal resistance	$R_{\Theta JC}$	22	°C/W

Thermal Performance Note: Units mounted on PCB (5mm x 5mm Cu pad test board)

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

PARAMETER	CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage[1]	I_F = 1A, T_J = 25°C	V_F	0.90	-	V
	I_F = 2A, T_J = 25°C		0.95	1.10	V
	I_F = 1A, T_J = 125°C		0.78	-	V
	I_F = 2A, T_J = 125°C		0.85	0.96	V
Reverse current @ rated V_R[2]	T_J = 25°C	I_R	-	5	μA
	T_J = 125°C		-	250	μA
Junction capacitance	1MHz, V_R = 4.0V	C_J	11	-	pF

Notes:

1. Pulse test with PW = 0.3ms
2. Pulse test with PW = 30ms

ORDERING INFORMATION

ORDERING CODE[1]	PACKAGE	PACKING
S2xAF-T	SMAF	7,500 / Tape & Reel

Notes:

1. “x” defines voltage from 200V(S2DAF-T) to 1000V(S2MAF-T)

CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.1 Forward Current Derating Curve

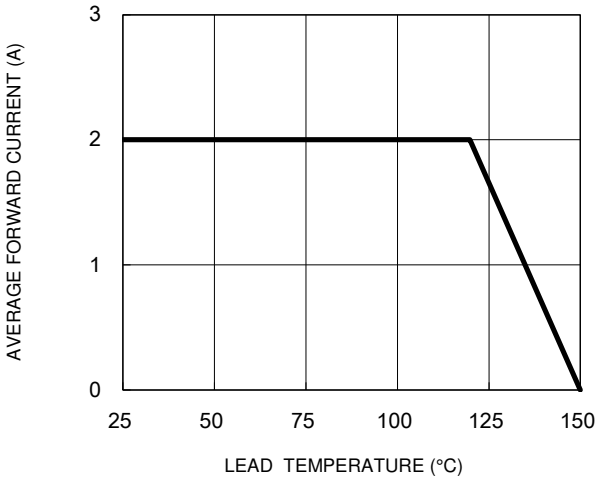


Fig.2 Typical Junction Capacitance

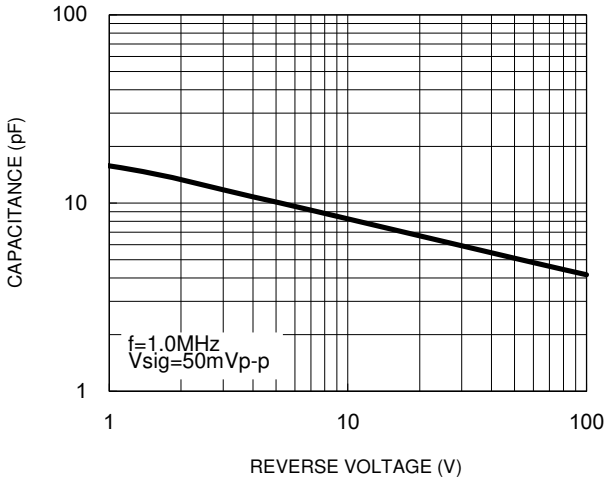


Fig.3 Typical Reverse Characteristics

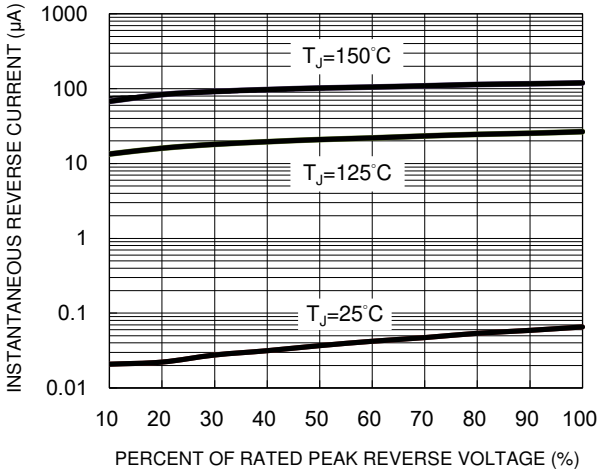


Fig.4 Typical Forward Characteristics

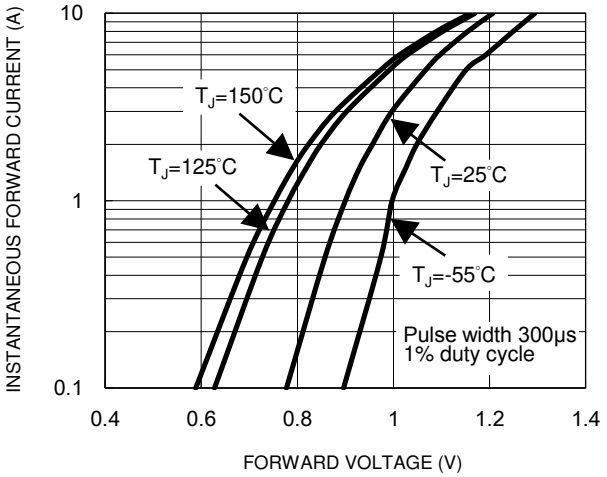
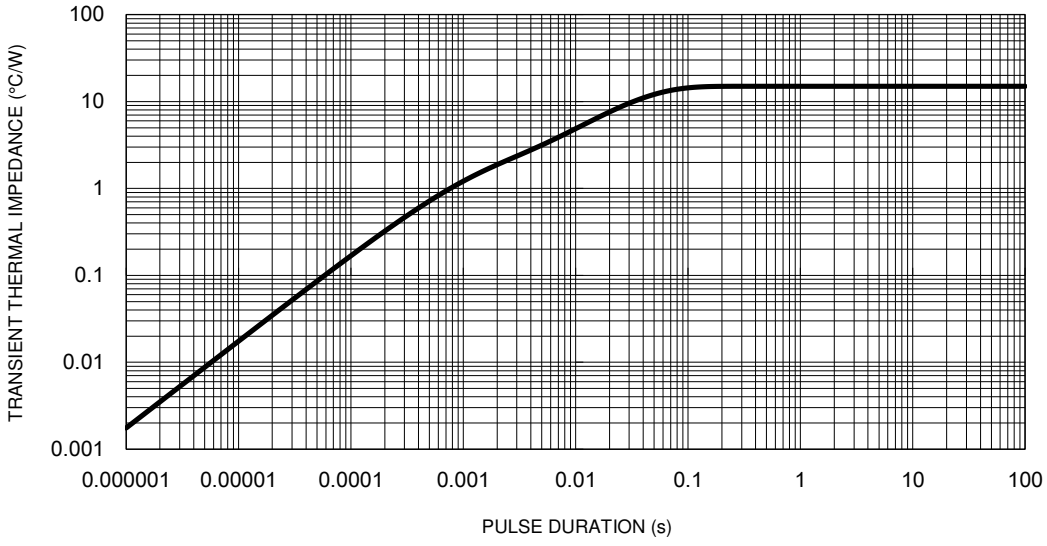
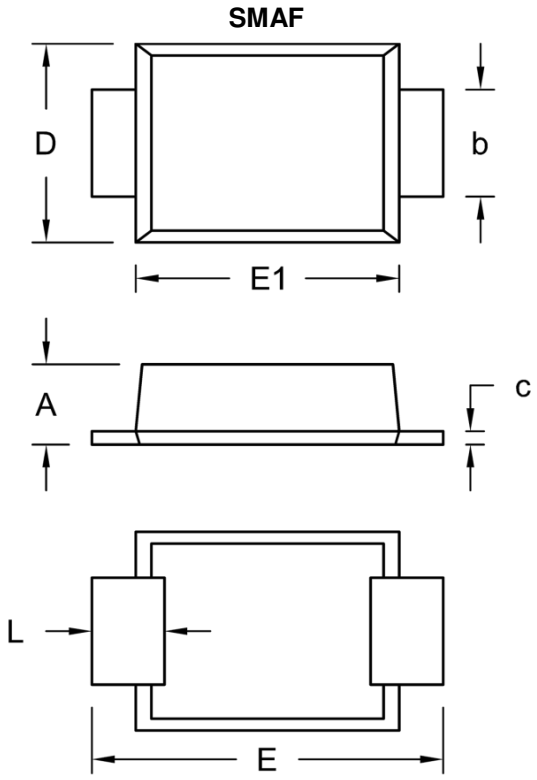


Fig.5 Typical Transient Thermal Impedance

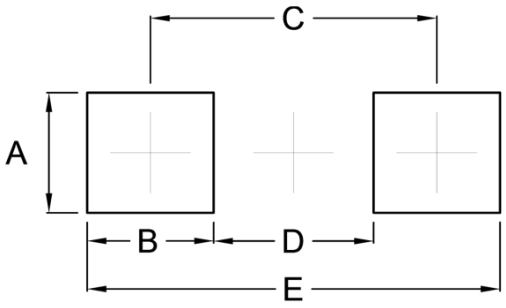


PACKAGE OUTLINE DIMENSIONS



DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	1.00	1.10	0.039	0.043
b	1.30	1.50	0.051	0.059
c	0.10	0.25	0.004	0.010
D	2.40	2.80	0.094	0.110
E	4.40	4.80	0.173	0.189
E1	3.25	3.65	0.128	0.144
L	0.70	1.20	0.028	0.047

SUGGESTED PAD LAYOUT



Symbol	Unit (mm)	Unit (inch)
A	1.57	0.062
B	1.66	0.065
C	3.76	0.148
D	2.10	0.083
E	5.42	0.213

MARKING DIAGRAM

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

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