2A, 200V-1000V Surface Mount Rectifier

FEATURES

- Glass passivated junction chip
- Ideal for automated placement
- Low reverse leakage
- Moisture sensitivity level: level 1, per J-STD-020
- Compliant to RoHS directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21

KEY PARAMETERS		
PARAMETER	**VALUE**	**UNIT**
I_F	2	A
V_{RRM}	200-1000	V
I_{FSM}	50	A
$T_{J\ MAX}$	150	°C
Package	DO-214AC (SMA)	

Pb-Free RoHS COMPLIANT HALOGEN FREE

APPLICATIONS

- Switch Mode Power Supply
- Inverters and Converters
- Free Wheeling diodes

MECHANICAL DATA

- Case: DO-214AC (SMA)
- 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: 0.06 g (approximately)

DO-214AC (SMA)

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)

PARAMETER		SYMBOL	S2DA-T	S2GA-T	S2JA-T	S2KA-T	S2MA-T	UNIT
Marking code on the device			S2DA	S2GA	S2JA	S2KA	S2MA	V
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
DC blocking voltage		V_{DC}	200	400	600	800	1000	V
Forward current		I_F	2					A
Surge peak forward current single half sine-wave superimposed on rated load per diode	8.3 ms at T_A= 25°C	I_{FSM}	50					A
	1.0 ms at T_A= 25°C		124					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 per diode	$R_{\Theta JL}$	14	°C/W
Junction-to-ambient thermal resistance per diode	$R_{\Theta JA}$	86	°C/W
Junction-to-case thermal resistance per diode	$R_{\Theta JC}$	23	°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 per diode (1)	I_F = 1A, T_J = 25°C	V_F	0.90	-	V
	I_F = 2A, T_J = 25°C		0.96	1.1	V
	I_F = 1A, T_J = 125°C		0.79	-	V
	I_F = 2A, T_J = 125°C		0.86	0.97	V
Reverse current @ rated V_R per diode (2)	T_J = 25°C	I_R	-	5	μA
	T_J = 125°C		-	100	μA
Junction capacitance per diode	1 MHz, V_R=4.0V	C_J	30	-	pF

Notes:

(1) Pulse test with PW=0.3 ms

(2) Pulse test with PW=30 ms

ORDERING INFORMATION

ORDERING CODE	PACKAGE	PACKING
S2XA-T R3G(1)	SMA	1,800 / 7" Plastic reel
S2XA-T M2G(1)	SMA	7,500 / 13" Plastic reel
S2XA-T R2G(1)	SMA	7,500 / 13" Paper reel

Notes:

(1) “X” defines voltage from 200V(S2DA-T) to 1000V(S2MA-T)

CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.1 Forward Current Derating Curve

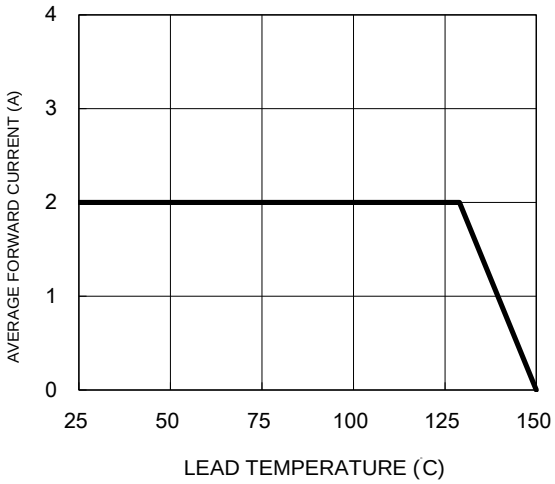


Fig.2 Typical Junction Capacitance

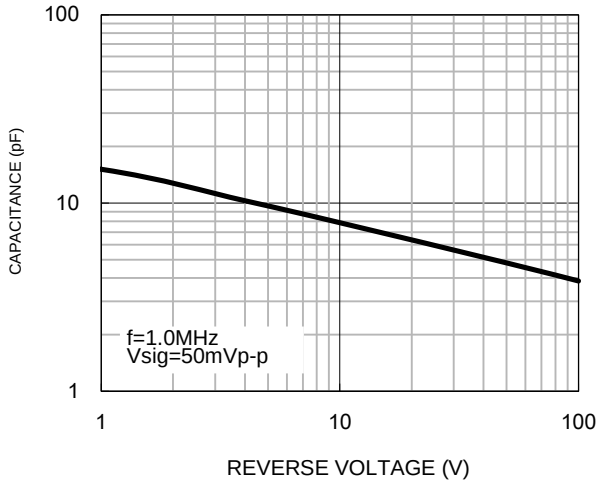


Fig.3 Typical Reverse Characteristics

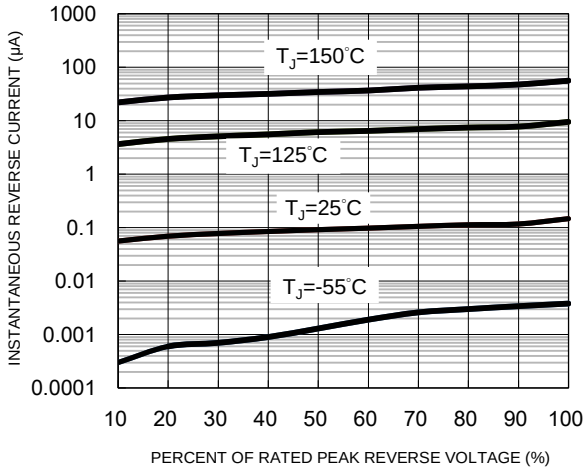


Fig.4 Typical Forward Characteristics

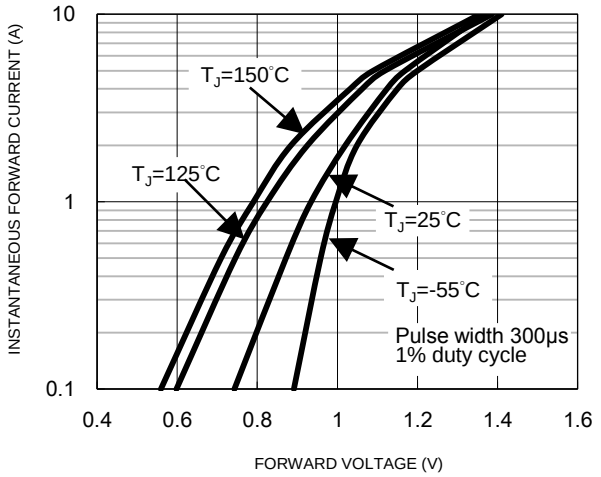
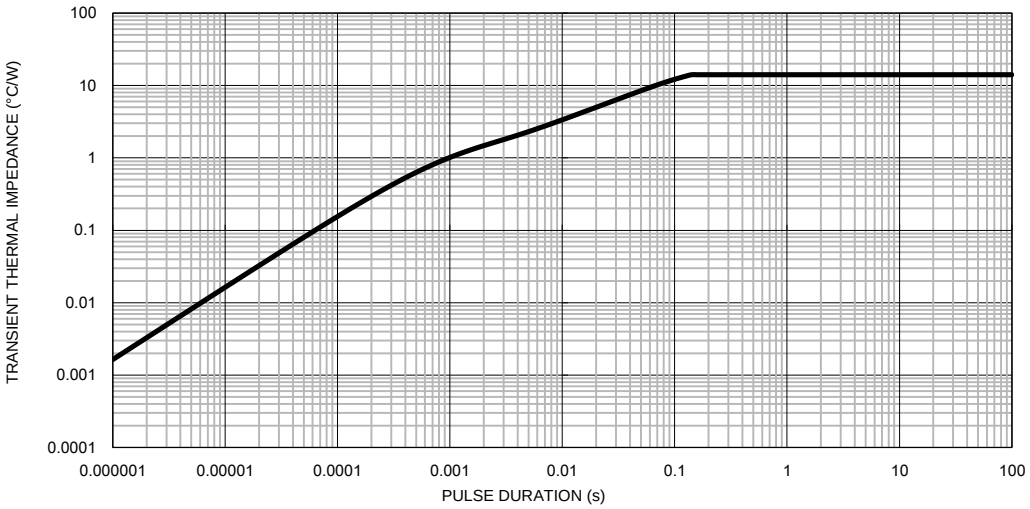
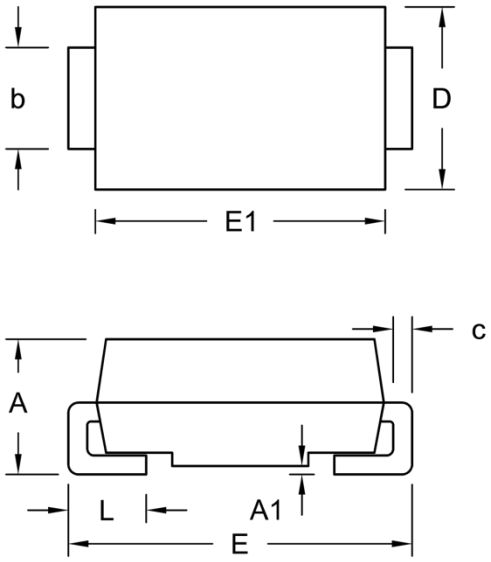


Fig.5 Typical Transient Thermal Impedance



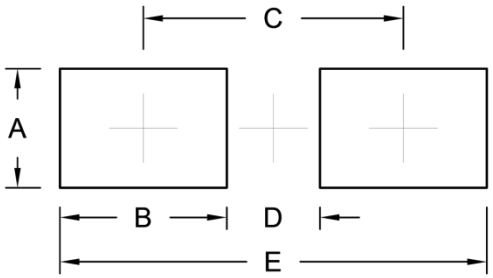
PACKAGE OUTLINE DIMENSIONS

DO-214AC (SMA)



DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	1.70	2.30	0.067	0.091
A1	0.05	0.20	0.002	0.008
b	1.20	1.80	0.047	0.071
c	0.15	0.41	0.006	0.016
D	2.40	3.00	0.094	0.118
E	4.80	5.40	0.189	0.213
E1	4.00	4.60	0.157	0.181
L	0.75	1.60	0.030	0.063

SUGGESTED PAD LAYOUT



Symbol	Unit (mm)	Unit (inch)
A	1.82	0.072
B	2.56	0.101
C	3.99	0.157
D	1.43	0.056
E	6.55	0.258

MARKING DIAGRAM

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

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