

2A, 200V-1000V Fast Recovery 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

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)

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)	


**HALOGEN
FREE**


DO-214AC (SMA)



ABSOLUTE MAXIMUM RATINGS (T _A = 25°C unless otherwise noted)								
PARAMETER		SYMBOL	RS2DA -T	RS2GA -T	RS2JA -T	RS2KA -T	RS2MA -T	UNIT
Marking code on the device			RS2DA	RS2GA	RS2JA	RS2KA	RS2MA	
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 ($T_A = 25^\circ\text{C}$ unless otherwise noted)

PARAMETER		CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage per diode ⁽¹⁾	RS2DA-T to RS2GA-T	I _F = 1A, T _J = 25°C	V _F	1.01	-	V
		I _F = 2A, T _J = 25°C		1.11	1.3	V
		I _F = 1A, T _J = 125°C		0.87	-	V
		I _F = 2A, T _J = 125°C		0.98	1.12	V
	RS2JA-T	I _F = 1A, T _J = 25°C		1.02	-	V
		I _F = 2A, T _J = 25°C		1.12	1.3	V
		I _F = 1A, T _J = 125°C		0.91	-	V
		I _F = 2A, T _J = 125°C		1.01	1.07	V
	RS2KA-T to RS2MA-T	I _F = 1A, T _J = 25°C		0.95	-	V
		I _F = 2A, T _J = 25°C		1.03	1.3	V
		I _F = 1A, T _J = 125°C		0.81	-	V
		I _F = 2A, T _J = 125°C		0.90	1.03	V
Reverse current @ rated V _R per diode ⁽²⁾		T _J = 25°C	I _R	-	5	μA
		T _J = 125°C		-	100	μA
Reverse recovery time	RS2DA-T to RS2GA-T	I _F =0.5A, I _R =1.0A, I _{rr} =0.25A	t _{rr}	-	150	ns
	RS2JA-T			-	250	ns
	RS2KA-T to RS2MA-T			-	500	ns
Junction capacitance per diode	RS2DA-T to RS2GA-T	1 MHz, V _R =4.0V	C _J	14	-	pF
	RS2JA-T			13	-	pF
	RS2KA-T to RS2MA-T			10	-	pF

Notes:

(1) Pulse test with $PW=0.3\text{ ms}$

(2) Pulse test with $PW=30\text{ ms}$

ORDERING INFORMATION

ORDERING CODE	PACKAGE	PACKING
RS2XA-T R3G ⁽¹⁾	SMA	1,800 / 7" Plastic reel
RS2XA-T M2G ⁽¹⁾	SMA	7,500 / 13" Plastic reel
RS2XA-T R2G ⁽¹⁾	SMA	7,500 / 13" Paper reel

Notes:

(1) "X" defines voltage from 200V(RS2DA-T) to 1000V(RS2MA-T)

CHARACTERISTICS CURVES

($T_A = 25^\circ\text{C}$ unless otherwise noted)

Fig.1 Forward Current Derating Curve

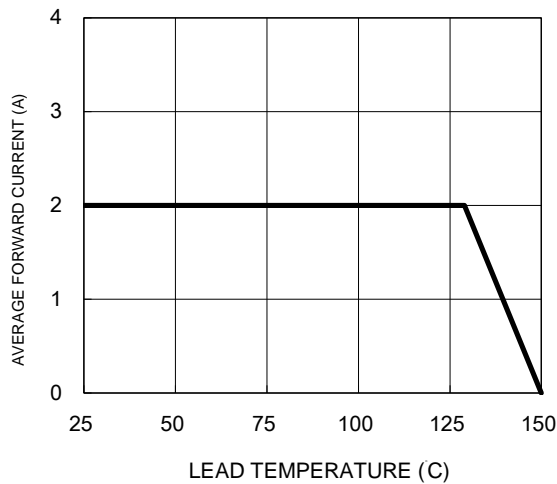


Fig.2 Typical Junction Capacitance

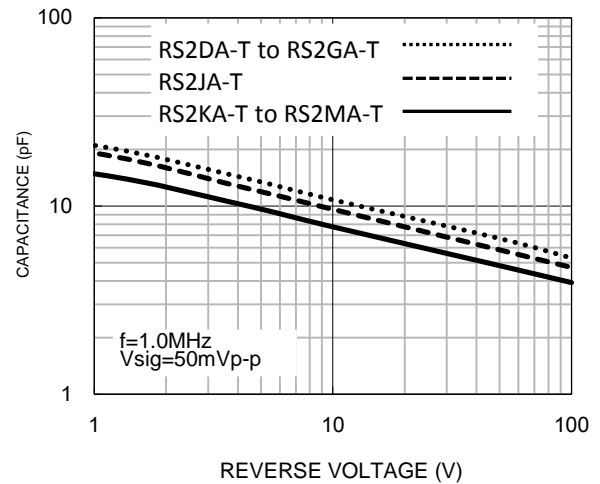


Fig.3 Typical Reverse Characteristics

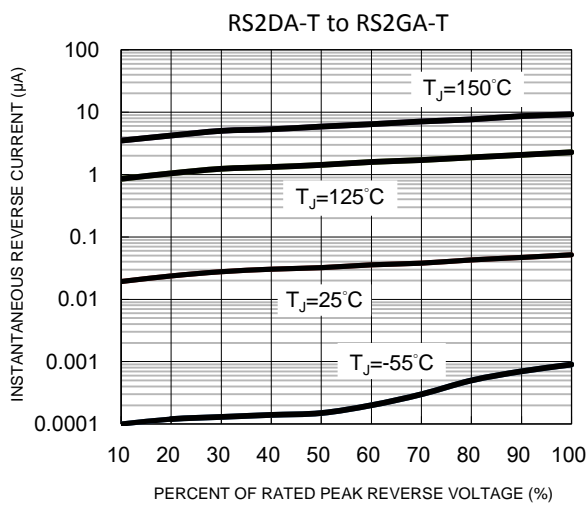


Fig.4 Typical Forward Characteristics

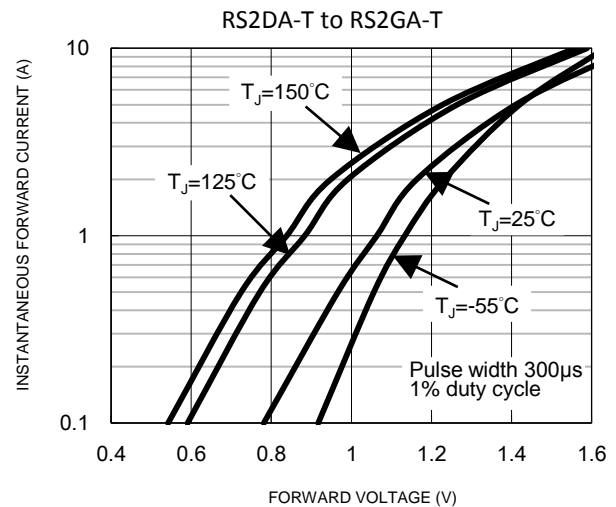


Fig.5 Typical Reverse Characteristics

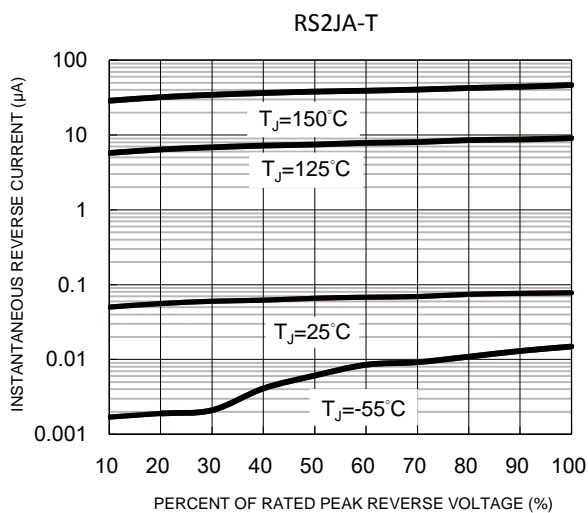


Fig.6 Typical Forward Characteristics

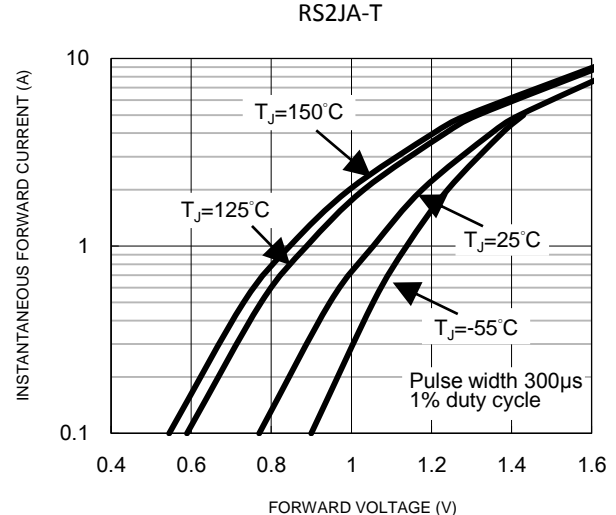


Fig.7 Typical Reverse Characteristics

RS2KA-T to RS2MA-T

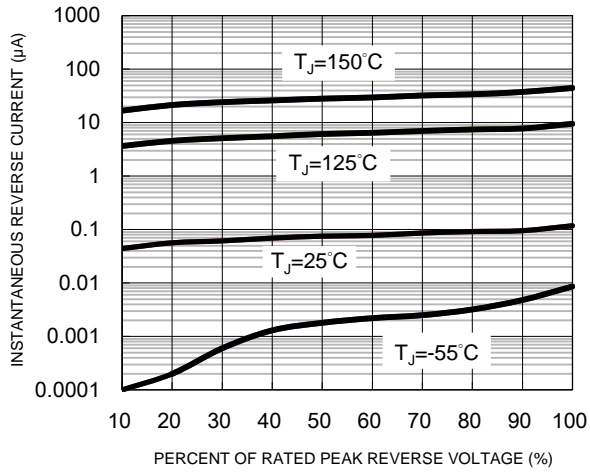


Fig.8 Typical Forward Characteristics

RS2KA-T to RS2MA-T

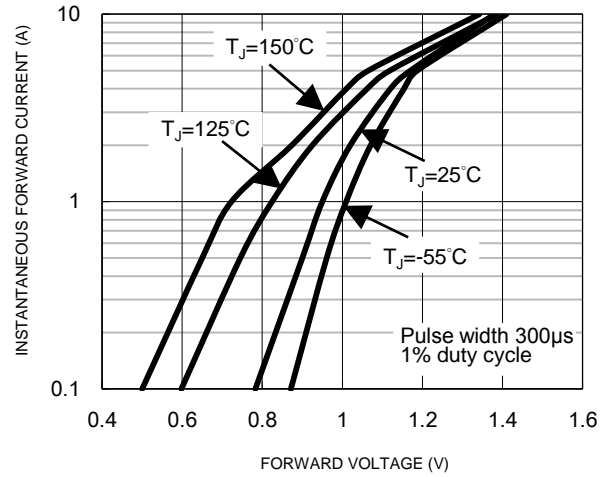
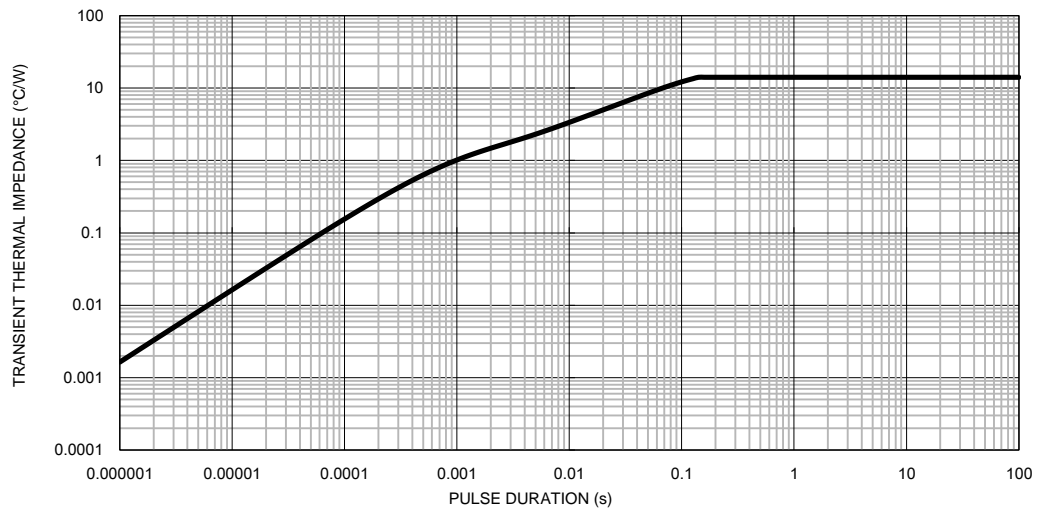
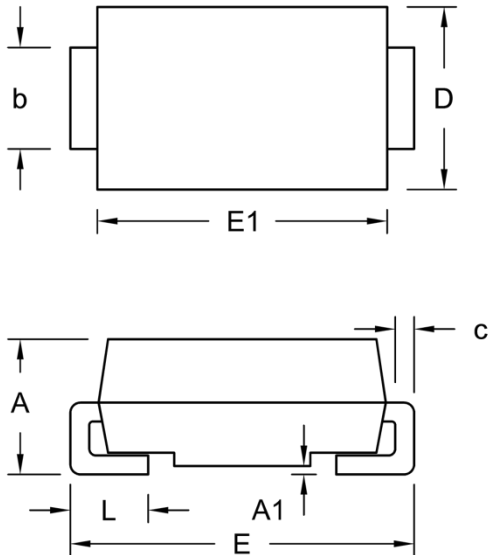


Fig.9 Typical Transient Thermal Impedance



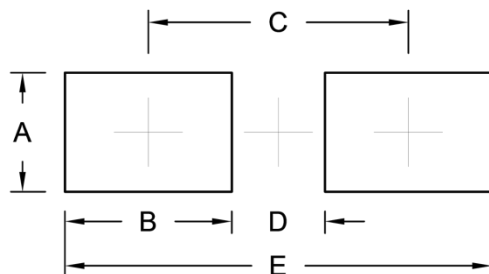
PACKAGE OUTLINE DIMENSIONS

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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