1A, 20V - 150V Schottky Barrier Rectifier

FEATURES

- AEC-Q101 qualified available
- Low forward voltage drop
- Low power loss, high efficiency
- Guard ring for overvoltage protection
- High surge current capability
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

APPLICATIONS

- Switching mode power supply (SMPS)
- Adapters
- DC to DC converter

MECHANICAL DATA

- Case: TS-1
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Pure tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 2 whisker test
- Polarity: Indicated by cathode band
- WeigSRT: 0.200g (approximately)

KEY PARAMETERS		
PARAMETER	**VALUE**	**UNIT**
I_F	1	A
V_{RRM}	20 - 150	V
I_{FSM}	25	A
$T_{J\ MAX}$	125, 150	°C
Package	TS-1	
Configuration	Single die	

Pb-Free RoHS COMPLIANT HALOGEN FREE

TS-1

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)										
PARAMETER	**SYMBOL**	**SRT 12**	**SRT 13**	**SRT 14**	**SRT 15**	**SRT 16**	**SRT 19**	**SRT 110**	**SRT 115**	**UNIT**
Marking code on the device		SRT 12	SRT 13	SRT 14	SRT 15	SRT 16	SRT 19	SRT 110	SRT 115	
Repetitive peak reverse voltage	V_{RRM}	20	30	40	50	60	90	100	150	V
Reverse voltage, total rms value	$V_{R(RMS)}$	14	21	28	35	42	63	70	105	V
Forward current	I_F	1								A
Surge peak forward current, 8.3ms single half sine wave superimposed on rated load	I_{FSM}	25								A
Junction temperature	T_J	-55 to +125			-55 to +150					°C
Storage temperature	T_{STG}	-55 to +150								°C

THERMAL PERFORMANCE			
PARAMETER	**SYMBOL**	**TYP**	**UNIT**
Junction-to-ambient thermal resistance	$R_{\Theta JA}$	50	°C/W

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

PARAMETER		CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage[1]	SRT12 SRT13 SRT14	I_F = 1A, T_J = 25°C	V_F	-	0.55	V
	SRT15 SRT16			-	0.70	V
	SRT19 SRT110			-	0.80	V
	SRT115			-	0.90	V
Reverse current @ rated V_R[2]	SRT12 SRT13 SRT14 SRT15 SRT16	T_J = 25°C	I_R	-	500	µA
	SRT19 SRT110 SRT115			-	100	µA
	SRT12 SRT13 SRT14	T_J = 100°C		-	10	mA
	SRT15 SRT16			-	5	mA
	SRT19 SRT110 SRT115			-	-	mA
	SRT12 SRT13 SRT14	T_J = 125°C		-	-	mA
	SRT15 SRT16			-	-	mA
	SRT19 SRT110 SRT115			-	2	mA
Junction capacitance	SRT12 SRT13 SRT14	1MHz, V_R = 4.0V	C_J	110	-	pF
	SRT15 SRT16			80	-	pF
	SRT19 SRT110 SRT115			28	-	pF

Notes:

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

ORDERING INFORMATION		
ORDERING CODE[1][2]	**PACKAGE**	**PACKING**
SRT1x	TS-1	5,000 / Tape & Reel
SRT1x A0G	TS-1	3,000 / Ammo box
SRT1xH	TS-1	5,000 / Tape & Reel
SRT1xHA0G	TS-1	3,000 / Ammo box

Notes:

1. "x" defines voltage from 20V (SRT12) to 150V (SRT115)
2. “H” means AEC-Q101 qualified

CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.1 Forward Current Derating Curve

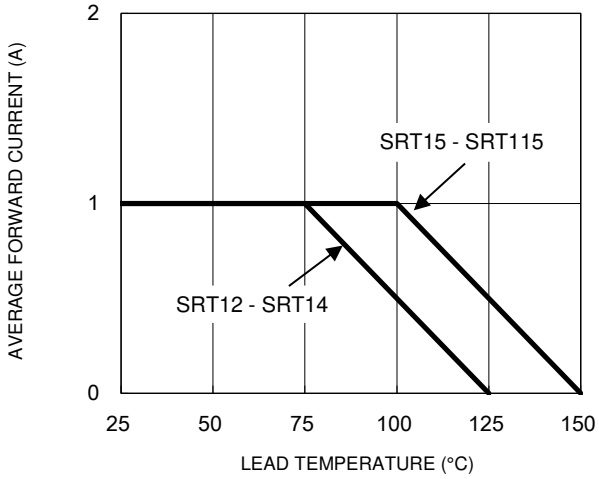


Fig.2 Typical Junction Capacitance

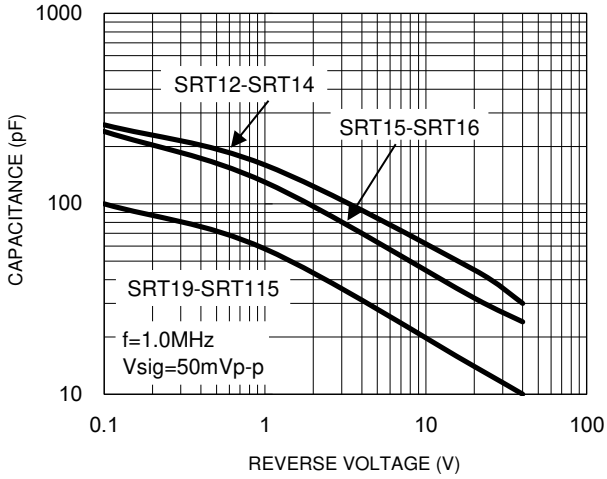


Fig.3 Typical Reverse Characteristics

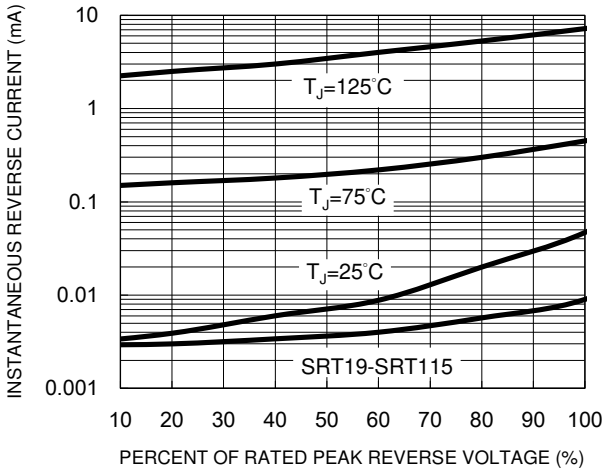


Fig.4 Typical Forward Characteristics

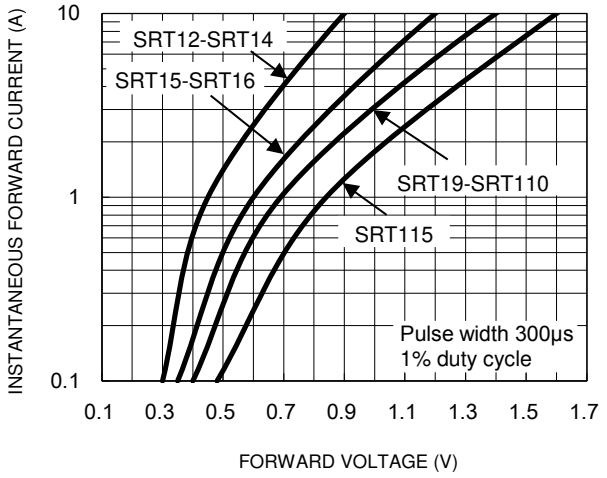
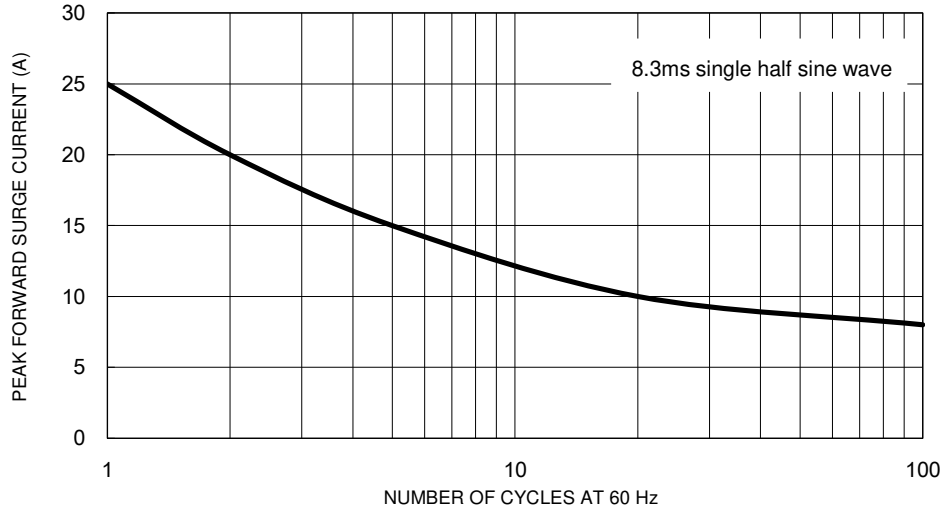


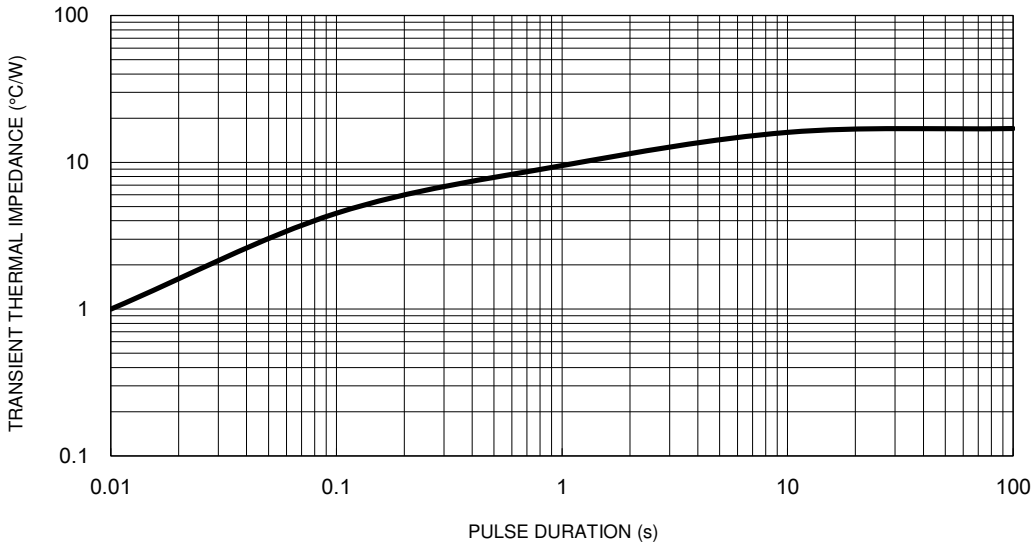
Fig.5 Maximum Non-Repetitive Forward Surge Current



CHARACTERISTICS CURVES

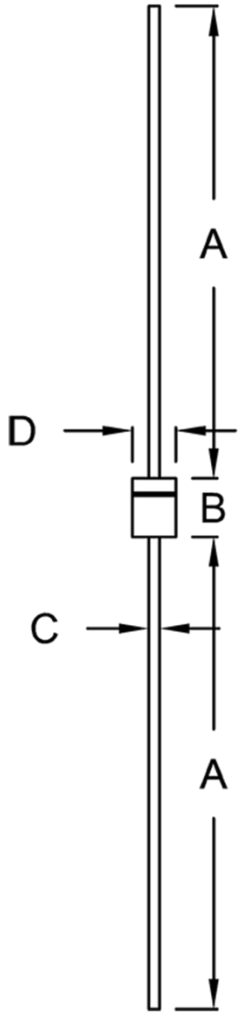
(T_A = 25°C unless otherwise noted)

Fig.6 Typical Transient Thermal Characteristics



PACKAGE OUTLINE DIMENSIONS

TS-1



DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	25.40	-	1.000	-
B	3.00	3.30	0.118	0.130
C	0.53	0.64	0.021	0.025
D	2.00	2.70	0.079	0.106

MARKING DIAGRAM

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

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