

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_{JMAX}	125, 150	°C
Package	TS-1	
Configuration	Single die	



TS-1



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ 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 ($T_A = 25^\circ\text{C}$ unless otherwise noted)								
PARAMETER		CONDITIONS	SYMBOL	TYP	MAX	UNIT		
Forward voltage ⁽¹⁾	SRT12 SRT13 SRT14	$I_F = 1\text{A}, T_J = 25^\circ\text{C}$	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	$T_J = 25^\circ\text{C}$	I_R	-	500	μA		
	SRT19 SRT110 SRT115	$T_J = 100^\circ\text{C}$		-	100	μA		
	SRT12 SRT13 SRT14			$T_J = 125^\circ\text{C}$	-	10	mA	
	SRT15 SRT16				-	5	mA	
	SRT19 SRT110 SRT115	-			-	mA		
	SRT12 SRT13 SRT14	-			-	mA		
	SRT15 SRT16	-		-	mA			
	SRT19 SRT110 SRT115	-		2	mA			
	Junction capacitance	SRT12 SRT13 SRT14		$1\text{MHz}, V_R = 4.0\text{V}$	C_J	110	-	pF
		SRT15 SRT16				80	-	pF
SRT19 SRT110 SRT115		28	-			pF		

Notes:

1. Pulse test with $PW = 0.3\text{ms}$
2. Pulse test with $PW = 30\text{ms}$

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

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

Fig.1 Forward Current Derating Curve

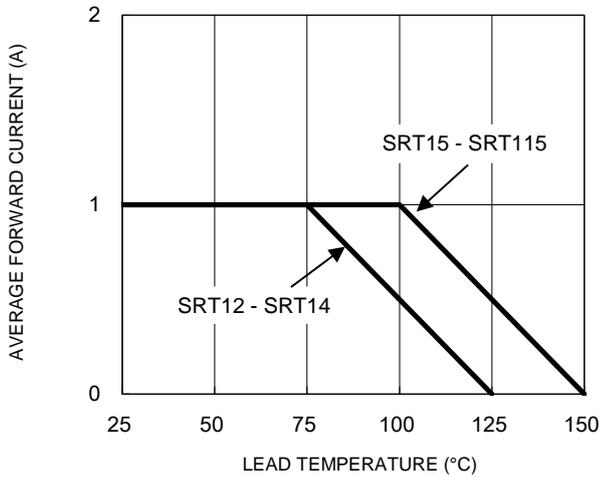


Fig.2 Typical Junction Capacitance

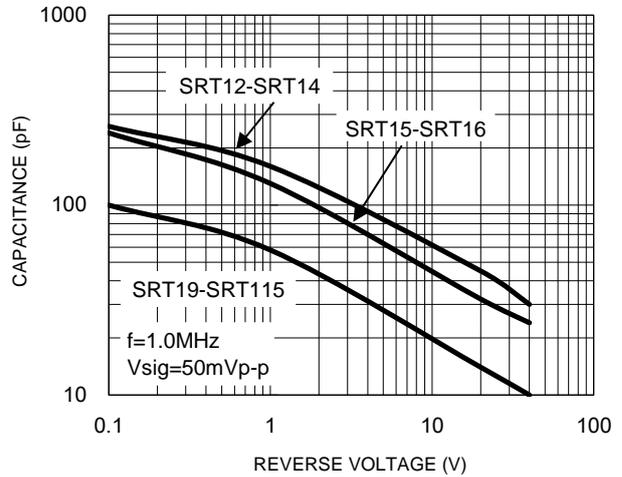


Fig.3 Typical Reverse Characteristics

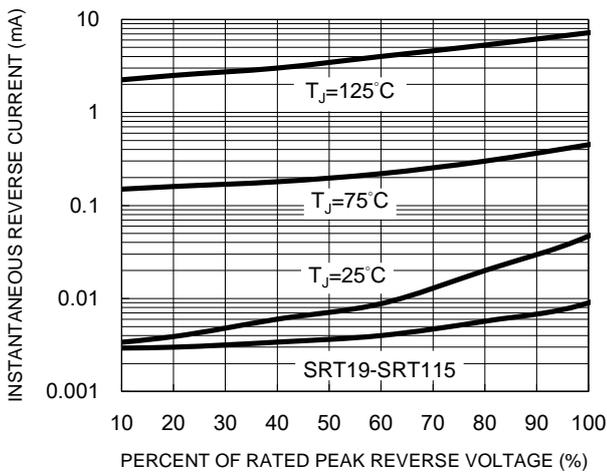


Fig.4 Typical Forward Characteristics

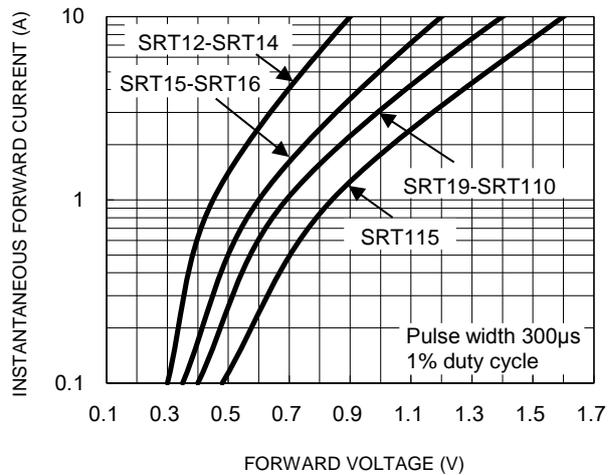
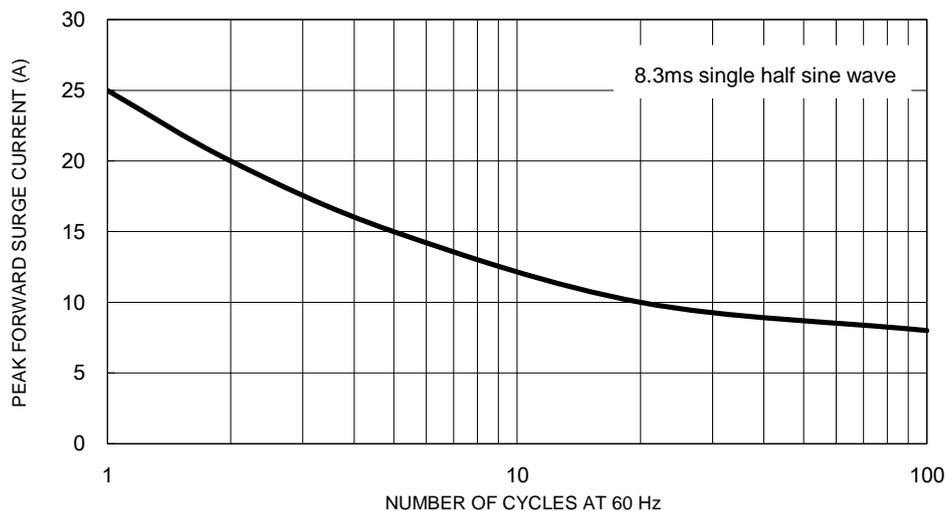


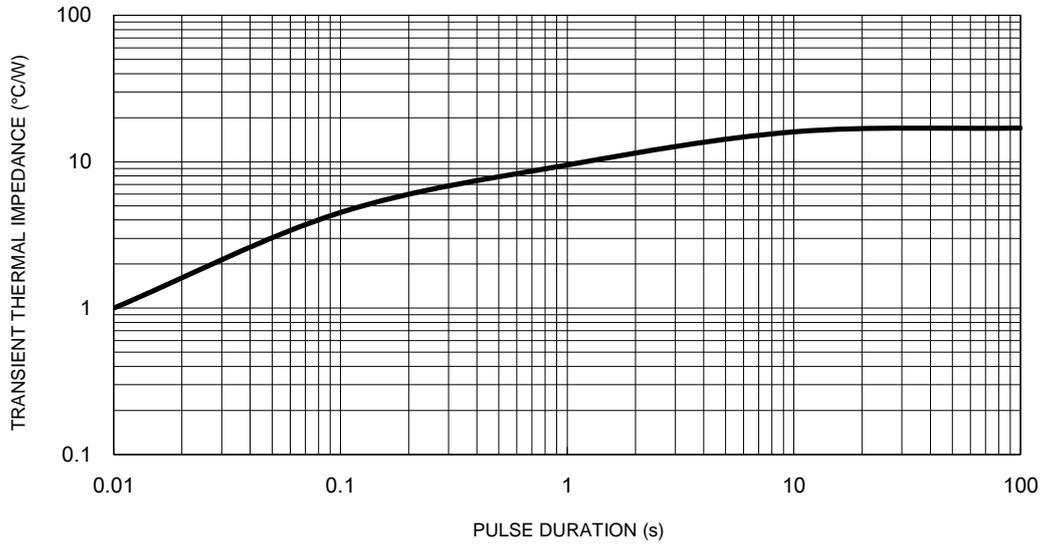
Fig.5 Maximum Non-Repetitive Forward Surge Current



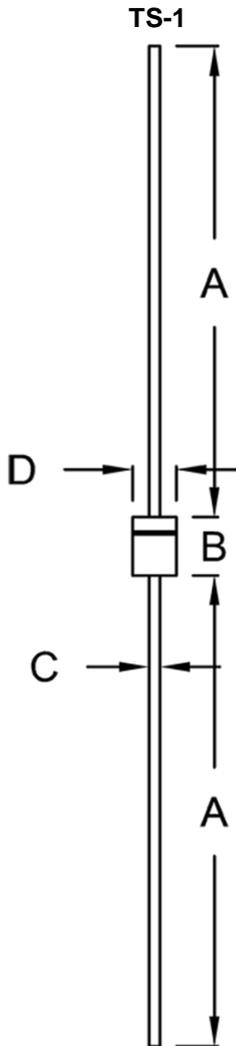
CHARACTERISTICS CURVES

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

Fig.6 Typical Transient Thermal Characteristics



PACKAGE OUTLINE DIMENSIONS



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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