1A, 20V - 150V Schottky Barrier Surface Mount Rectifier

FEATURES

- Low power loss, high efficiency
- Ideal for automated placement
- Guard ring for overvoltage protection
- High surge current capability
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

APPLICATIONS

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

MECHANICAL DATA

- Case: Sub SMA
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 2 whisker test
- Polarity: Indicated by cathode band
- Weight: 0.019g (approximately)

KEY PARAMETERS		
PARAMETER	**VALUE**	**UNIT**
I_F	1	A
V_{RRM}	20 - 150	V
I_{FSM}	30	A
$T_{J\ MAX}$	125, 150	°C
Package	Sub SMA	
Configuration	Single die	

Pb-Free RoHS COMPLIANT HALOGEN FREE



Sub SMA



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

PARAMETER	SYMBOL	SS 12L	SS 13L	SS 14L	SS 15L	SS 16L	SS 19L	SS 110L	SS 115L	UNIT
Marking code on the device		12L	13L	14L	15L	16L	19L	10L	A5L	
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
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load	I_{FSM}	30								A
Critical rate of rise of off-state voltage	dV/dt	10,000								V/μs
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-lead thermal resistance	$R_{\Theta JL}$	45	°C/W
Junction-to-ambient thermal resistance	$R_{\Theta JA}$	100	°C/W

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

PARAMETER		CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage[1]	SS12L	I_F = 0.5A, T_J = 25°C	V_F	-	0.385	V
	SS13L			-	0.430	V
	SS14L			-	0.510	V
	SS15L SS16L			-	0.580	V
	SS19L SS110L			-	0.700	V
	SS115L			-	0.750	V
	SS12L	I_F = 1.0A, T_J = 25°C		-	0.450	V
	SS13L			-	0.500	V
	SS14L			-	0.550	V
	SS15L SS16L			-	0.700	V
	SS19L SS110L			-	0.800	V
	SS115L			-	0.900	V
Reverse current @ rated V_R[2]	SS12L SS13L SS14L SS15L SS16L	T_J = 25°C	I_R	-	400	µA
	SS19L SS110L SS115L			-	50	µA
	SS12L	T_J = 100°C		-	8	mA
	SS13L SS14L SS15L SS16L			-	6	mA
	SS19L SS110L SS115L			-	-	mA
	SS12L SS13L SS14L SS15L SS16L	T_J = 125°C		-	-	mA
	SS19L SS110L SS115L			-	0.5	mA

Notes:

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

ORDERING INFORMATION		
ORDERING CODE[1]	**PACKAGE**	**PACKING**
SS1xL	Sub SMA	10,000 / Tape & Reel

Notes:

1. "x" defines voltage from 20V(SS12L) to 150V(SS115L)

CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.1 Forward Current Derating Curve

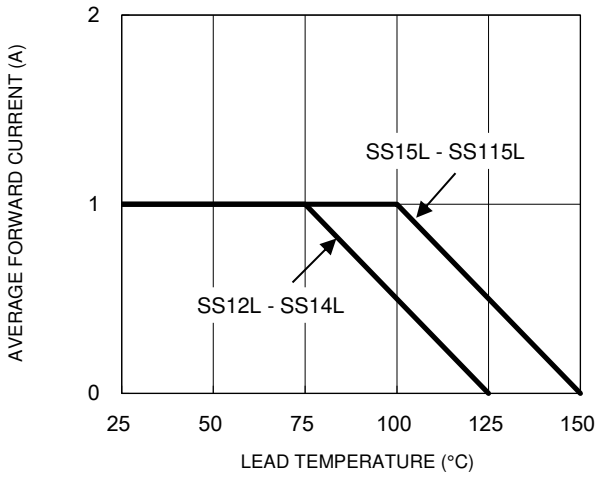


Fig.2 Typical Junction Capacitance

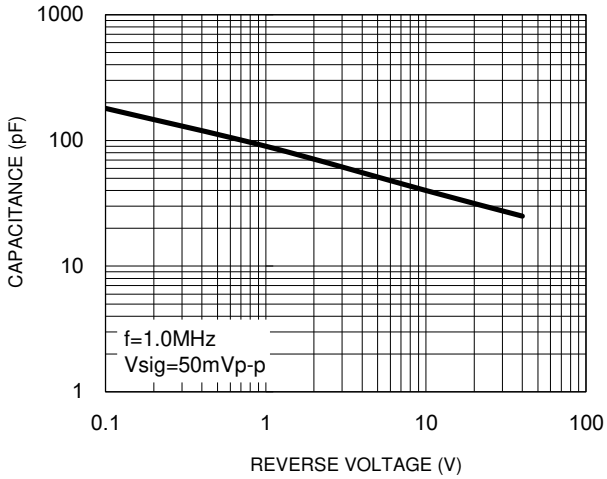


Fig.3 Typical Reverse Characteristics

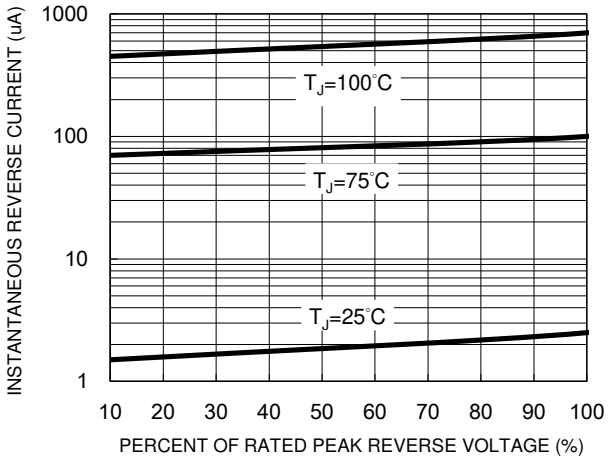


Fig.4 Typical Forward Characteristics

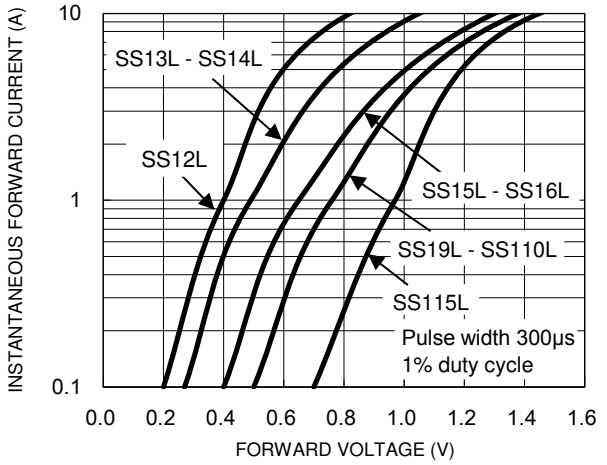
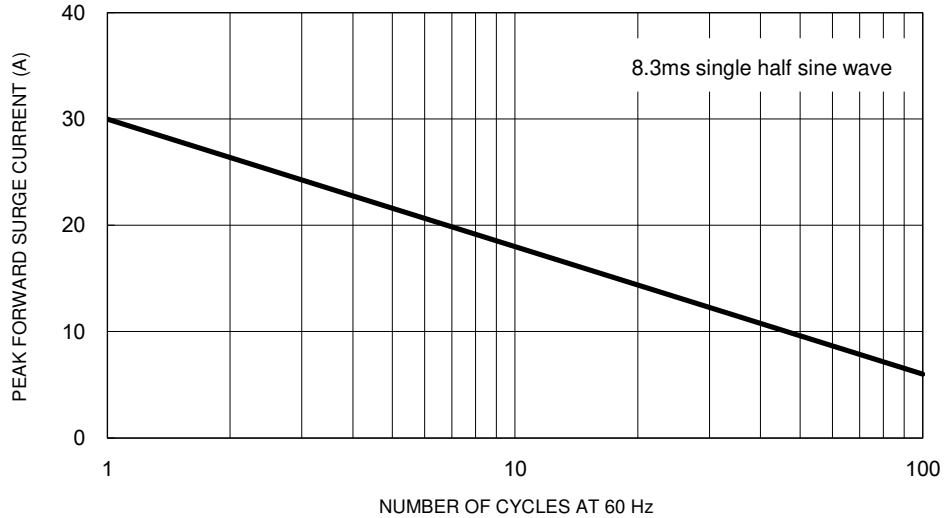


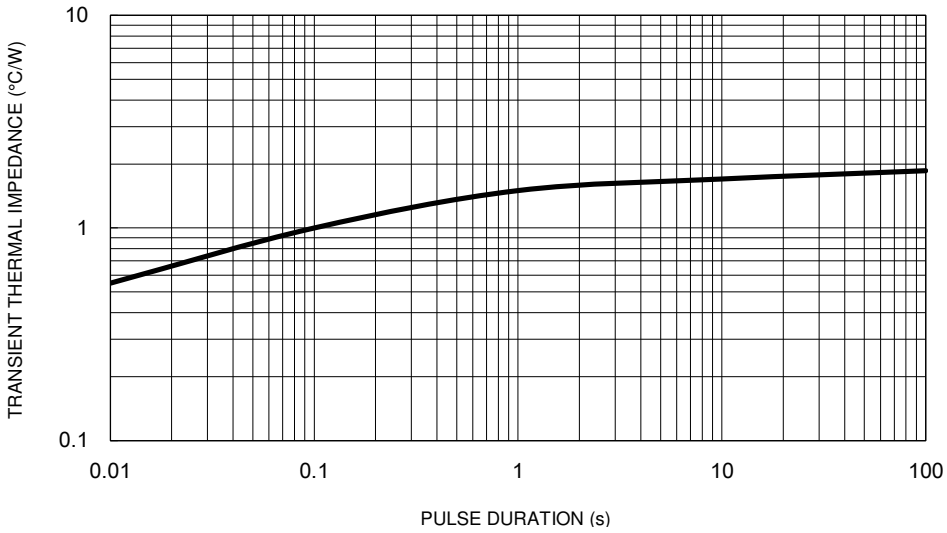
Fig.5 Maximum Non-Repetitive Forward Surge Current



CHARACTERISTICS CURVES

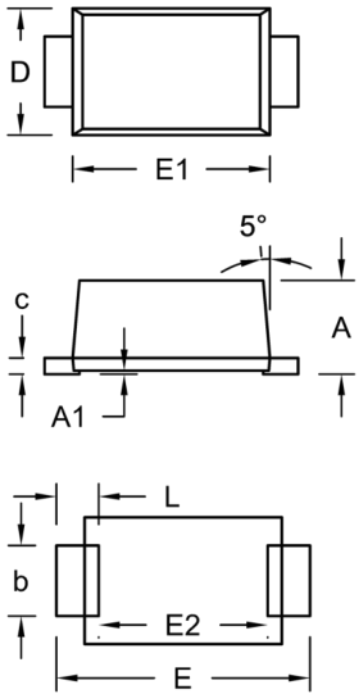
(T_A = 25°C unless otherwise noted)

Fig.6 Typical Transient Thermal Impedance



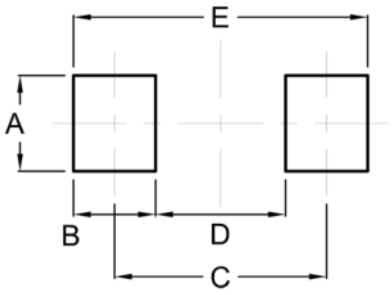
PACKAGE OUTLINE DIMENSIONS

Sub SMA



DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	1.23	1.43	0.048	0.056
A1	0.00	0.10	0.000	0.004
b	0.80	1.20	0.031	0.047
c	0.16	0.30	0.006	0.012
D	1.70	1.90	0.067	0.075
E	3.40	3.80	0.134	0.150
E1	2.70	2.90	0.106	0.114
E2	2.45	2.60	0.096	0.102
L	0.35	0.85	0.014	0.033

SUGGESTED PAD LAYOUT



Symbol	Unit (mm)	Unit (inch)
A	1.40	0.055
B	1.20	0.047
C	3.10	0.122
D	1.90	0.075
E	4.30	0.169

MARKING DIAGRAM



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

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