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

APPLICATIONS

- Switching mode power supply (SMPS)
- Adapters
- Monitor
- DC/DC converters
- TV

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 2 whisker test
- Polarity: Indicated by cathode band
- Weight: 0.060g (approximately)

KEY PARAMETERS		
PARAMETER	**VALUE**	**UNIT**
I_F	1	A
V_{RRM}	20 - 150	V
I_{FSM}	40	A
$T_{J\ MAX}$	125, 150	°C
Package	DO-214AC (SMA)	
Configuration	Single die	

Pb-Free RoHS COMPLIANT HALOGEN FREE

DO-214AC (SMA)

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

PARAMETER	SYMBOL	SS12	SS13	SS14	SS15	SS16	SS19	SS110	SS115	UNIT
Marking code on the device		SS12	SS13	SS14	SS15	SS16	SS19	SS110	SS115	
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}	40								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	$R_{\Theta JL}$	28	°C/W
Junction-to-ambient thermal resistance	$R_{\Theta JA}$	88	°C/W

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

PARAMETER		CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage[1]	SS12 SS13 SS14	I_F = 1A, T_J = 25°C	V_F	-	0.50	V
	SS15 SS16			-	0.75	V
	SS19 SS110			-	0.80	V
	SS115			-	0.95	V
	SS12 SS13 SS14	I_F = 1A, T_J = 100°C		-	0.40	V
	SS15 SS16			-	0.65	V
	SS19 SS110			-	0.70	V
	SS115			-	0.85	V
Reverse current @ rated V_R[2]	SS12 SS13 SS14 SS15 SS16	T_J = 25°C	I_R	-	200	μA
	SS19 SS110 SS115			-	100	μA
	SS12 SS13 SS14	T_J = 100°C		-	6	mA
	SS15 SS16			-	5	mA
	SS19 SS110 SS115			-	-	mA
	SS12 SS13 SS14	T_J = 125°C		-	-	mA
	SS15 SS16			-	-	mA
	SS19 SS110 SS115			-	2	mA

Notes:

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

ORDERING INFORMATION		
ORDERING CODE[1]	**PACKAGE**	**PACKING**
SS1x	DO-214AC (SMA)	7,500 / Tape & Reel

Notes:

1. "x" defines voltage from 20V(SS12) to 150V(SS115)

CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.1 Forward Current Derating Curve

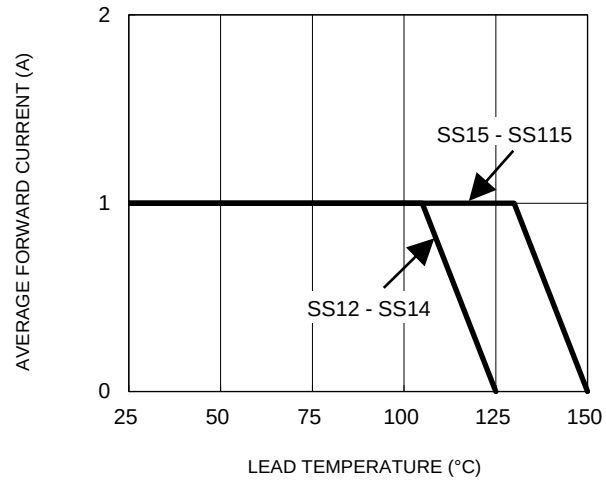


Fig.2 Typical Junction Capacitance

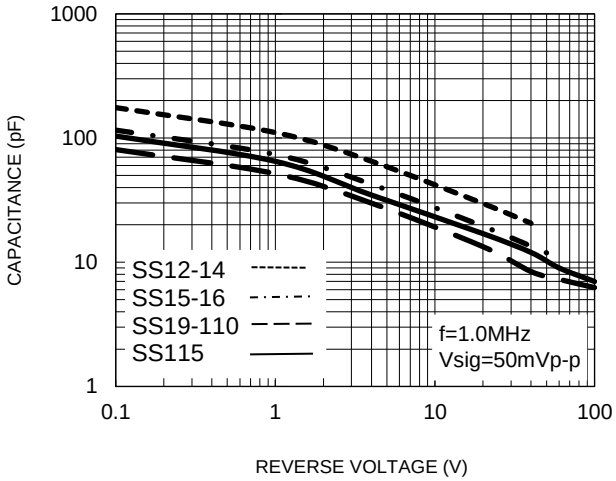


Fig.3 Typical Reverse Characteristics

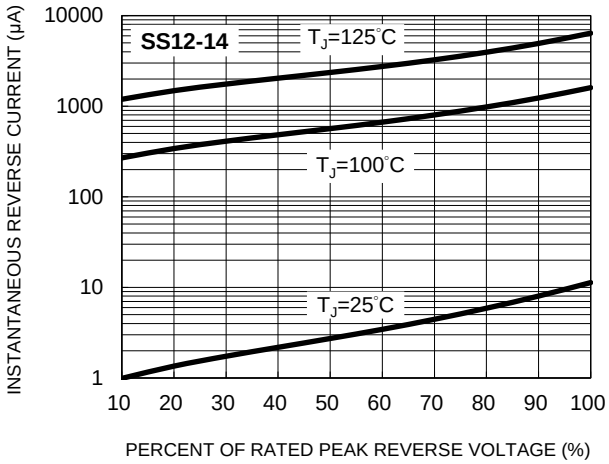


Fig.4 Typical Forward Characteristics

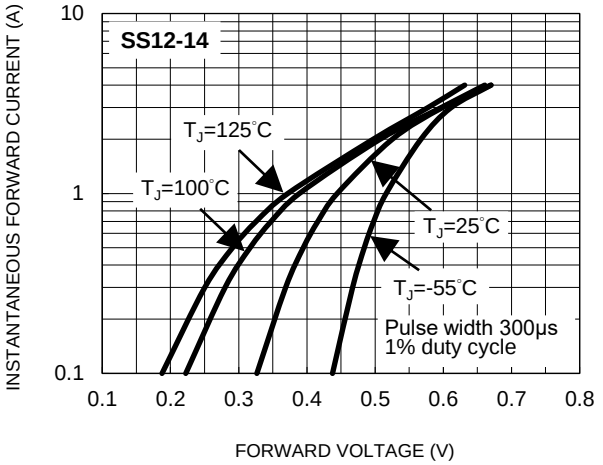


Fig.5 Typical Reverse Characteristics

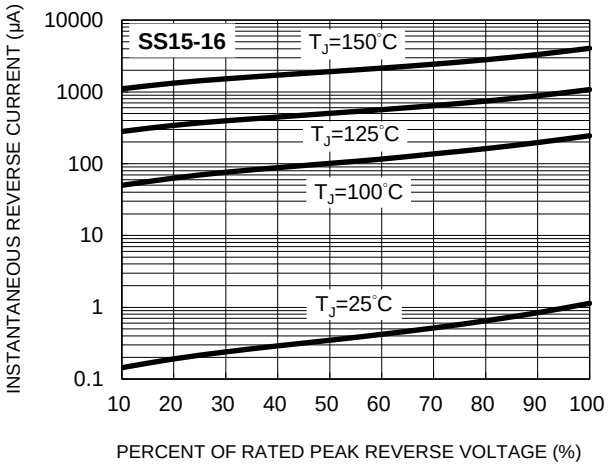
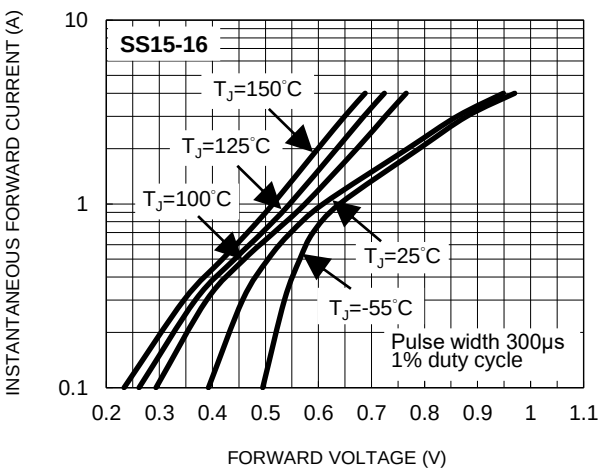


Fig.6 Typical Forward Characteristics



CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.7 Typical Reverse Characteristics

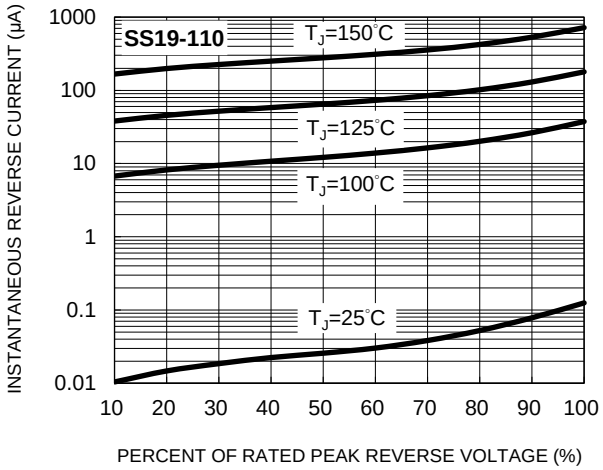


Fig.8 Typical Forward Characteristics

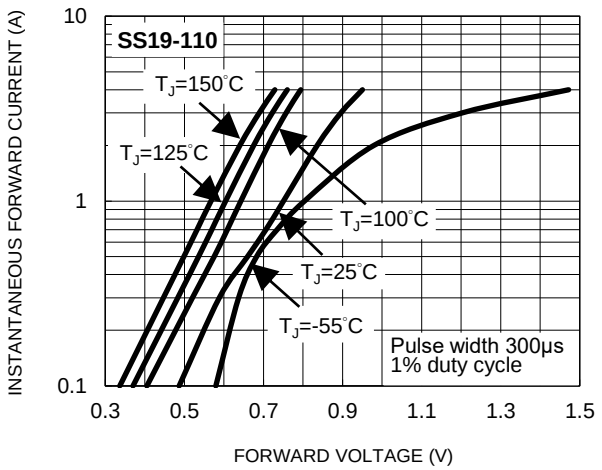


Fig.9 Typical Reverse Characteristics

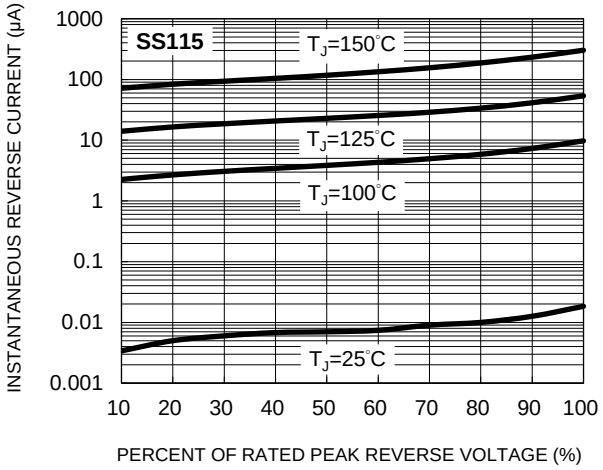


Fig.10 Typical Forward Characteristics

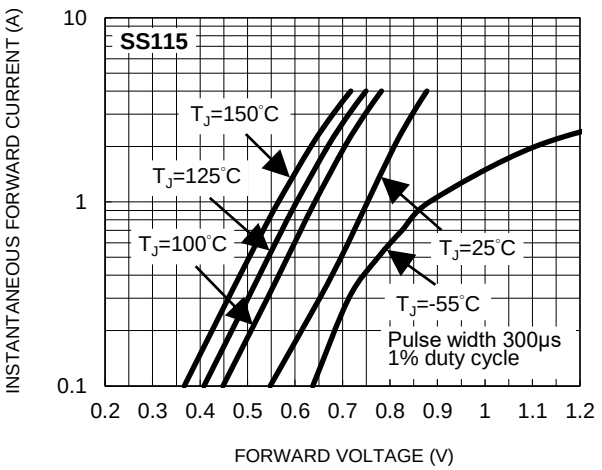
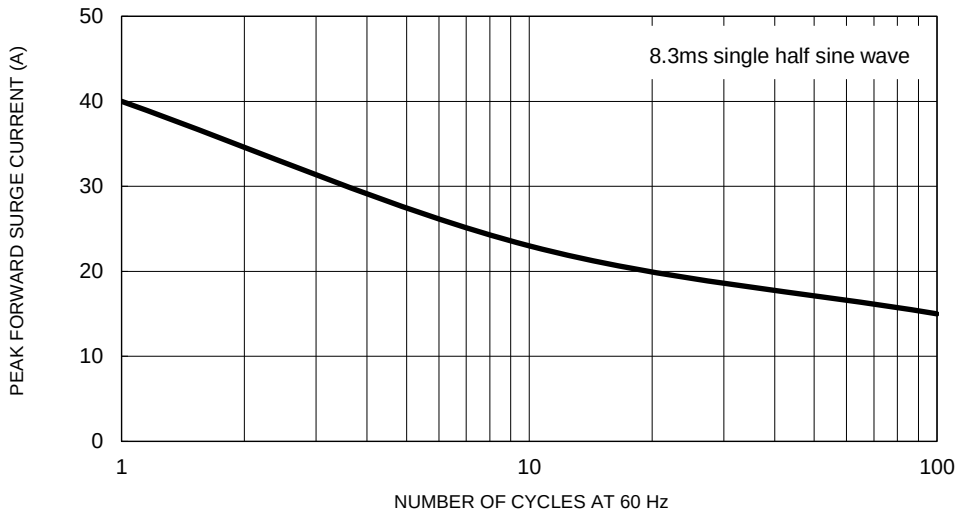


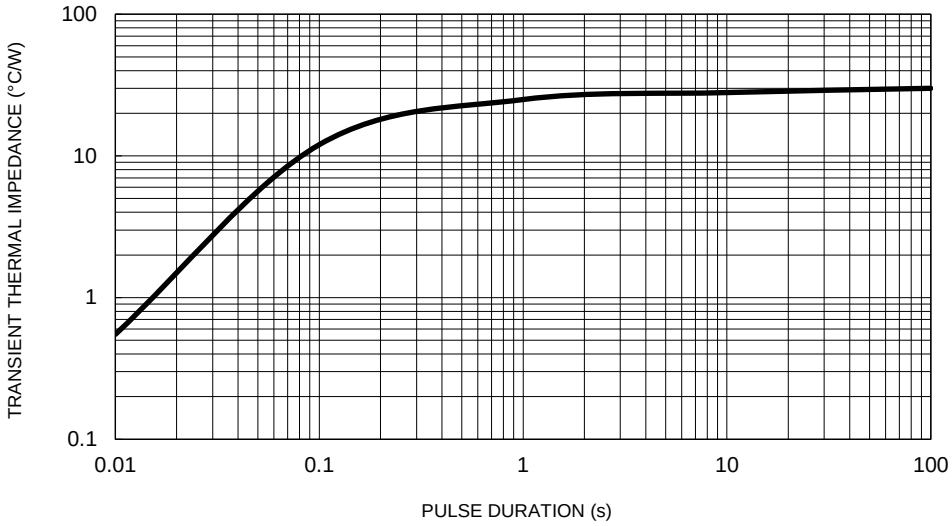
Fig.11 Maximum Non-Repetitive Forward Surge Current



CHARACTERISTICS CURVES

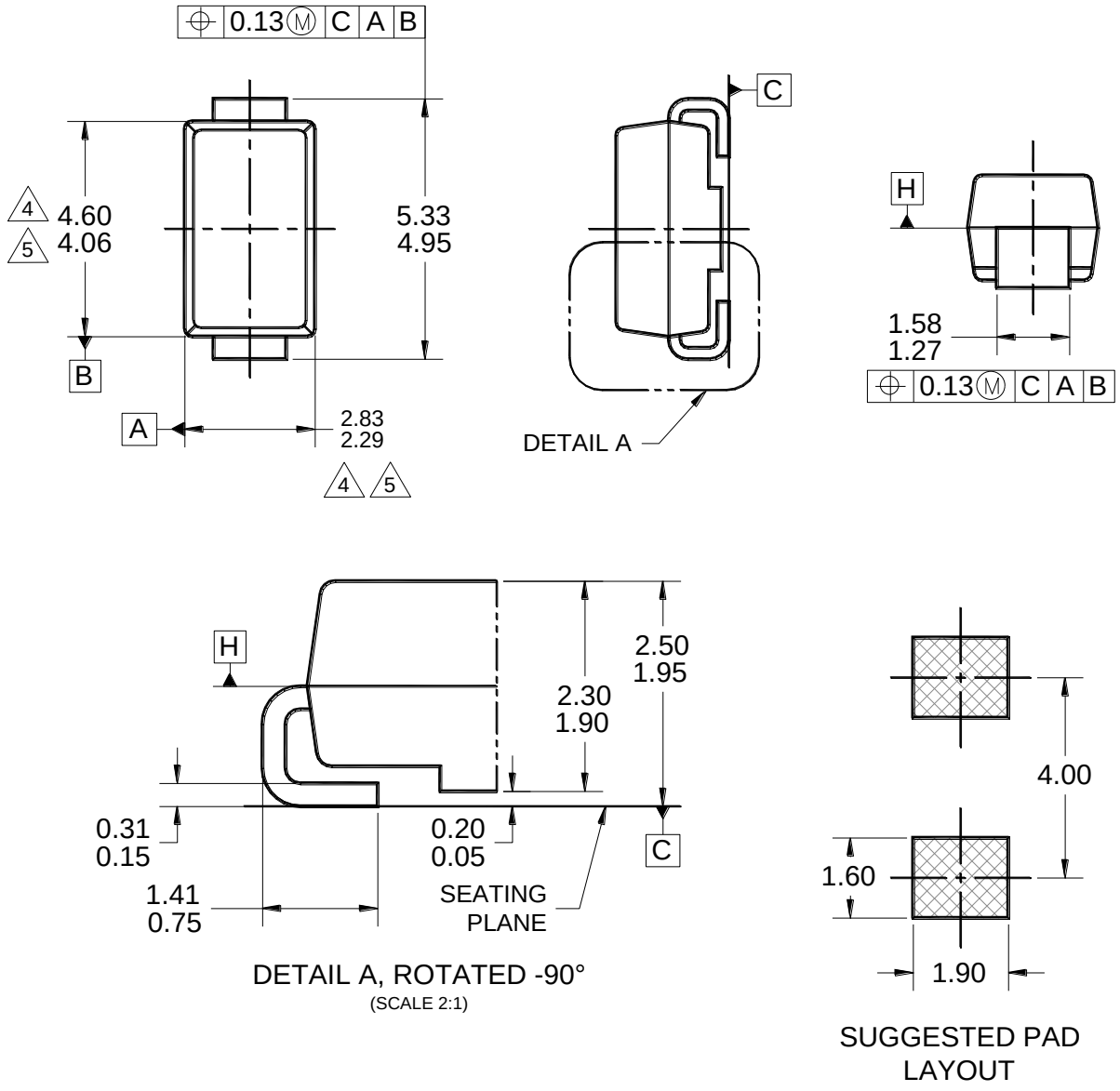
(T_A = 25°C unless otherwise noted)

Fig.12 Typical Transient Thermal Characteristics



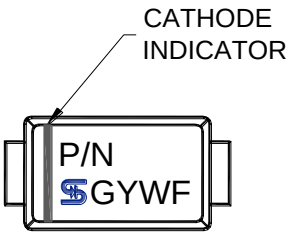
PACKAGE OUTLINE DIMENSIONS

DO-214AC (SMA)



DETAIL A, ROTATED -90°
(SCALE 2:1)

SUGGESTED PAD LAYOUT



MARKING DIAGRAM

P/N = MARKING CODE
G = GREEN COMPOUND
YW = DATE CODE
F = FACTORY CODE

NOTES: UNLESS OTHERWISE SPECIFIED

1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. DIMENSIONING AND TOLERANCING PER ASME Y14.5M-1994.
3. PACKAGE OUTLINE REFERENCE: JEDEC DO-214, VARIATION AC, ISSUE D.
4. MOLDED PLASTIC BODY DIMENSIONS DO NOT INCLUDE MOLD FLASH.
5. MOLDED PLASTIC BODY LATERAL DIMENSIONS TO BE DETERMINED AT DATUM PLANE H.
6. DWG NO. REF: HQ2SD07-DO214SMC-034 REV A.

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