Surface Mount Schottky Barrier Rectifier



DO-214AC (SMA)

FEATURES

- Low profile package
- Ideal for automated placement
- Guardring for overvoltage protection
- Low power losses, high efficiency
- Low forward voltage drop
- High surge capability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- Solder dip 260 °C, 40 s
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC

RoHS COMPLIANT

TYPICAL APPLICATIONS

For use in low voltage, high frequency inverters, freewheeling, dc-to-dc converters, and polarity protection applications.

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	1.0 A
V_{RRM}	20 V to 60 V
I_{FSM}	40 A
V_F	0.50 V, 0.75 V
T_J max.	125 °C, 150 °C

MECHANICAL DATA

Case: DO-214AC (SMA)

Epoxy meets UL 94V-0 flammability rating

Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD22-B102

E3 suffix for consumer grade, meets JESD 201 class 1A whisker test, HE3 suffix for high reliability grade (AEC Q101 qualified), meets JESD 201 class 2 whisker test

Polarity: Color band denotes the cathode end

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

PARAMETER	SYMBOL	SS12	SS13	SS14	SS15	SS16	UNIT
Device marking code		S2	S3	S4	S5	S6	V
Maximum repetitive peak reverse voltage	V_{RRM}	20	30	40	50	60	V
Maximum RMS voltage	V_{RMS}	14	21	28	35	42	V
Maximum DC blocking voltage	V_{DC}	20	30	40	50	60	V
Maximum average forward rectified current at T_L (Fig. 1)	$I_{F(AV)}$	1.0					A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	40					A
Voltage rate of change (rated V_R)	dV/dt	10 000					V/µs
Operating junction temperature range	T_J	- 65 to + 125			- 65 to + 150		°C
Storage temperature range	T_{STG}	- 65 to + 150					°C

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ELECTRICAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)								
PARAMETER	**TEST CONDITIONS**	**SYMBOL**	**SS12**	**SS13**	**SS14**	**SS15**	**SS16**	**UNIT**
Maximum instantaneous forward voltage (1)	1.0 A	V_F	0.50			0.75		V
Maximum DC reverse current at rated DC blocking voltage (1)	T_A = 25 °C	I_R	0.2					mA
	T_A = 100 °C		6.0			5.0		

Note:

(1) Pulse test: 300 µs pulse width, 1 % duty cycle

THERMAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)							
PARAMETER	**SYMBOL**	**SS12**	**SS13**	**SS14**	**SS15**	**SS16**	**UNIT**
Typical thermal resistance (1)	$R_{\theta JA}$	88					°C/W
	$R_{\theta JL}$	28					

Note:

(1) P.C.B. mounted with 0.2 x 0.2" (5.0 x 5.0 mm) copper pad areas

ORDERING INFORMATION (Example)				
PREFERRED P/N	**UNIT WEIGHT (g)**	**PREFERRED PACKAGE CODE**	**BASE QUANTITY**	**DELIVERY MODE**
SS14-E3/61T	0.064	61T	1800	7" diameter plastic tape and reel
SS14-E3/5AT	0.064	5AT	7500	13" diameter plastic tape and reel
SS14HE3/61T (1)	0.064	61T	1800	7" diameter plastic tape and reel
SS14HE3/5AT (1)	0.064	5AT	7500	13" diameter plastic tape and reel

Note:

(1) Automotive grade AEC Q101 qualified

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

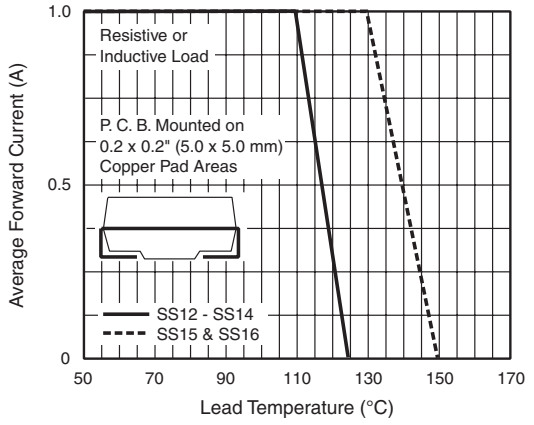


Figure 1. Forward Current Derating Curve

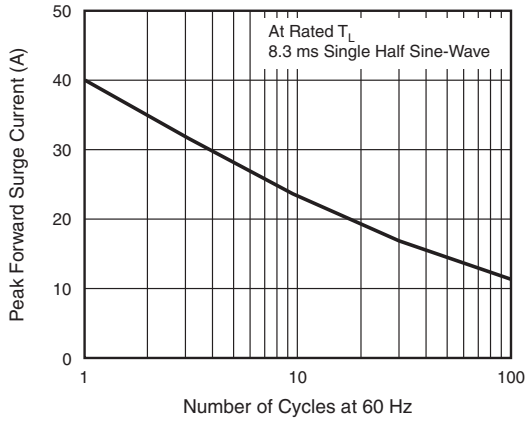


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

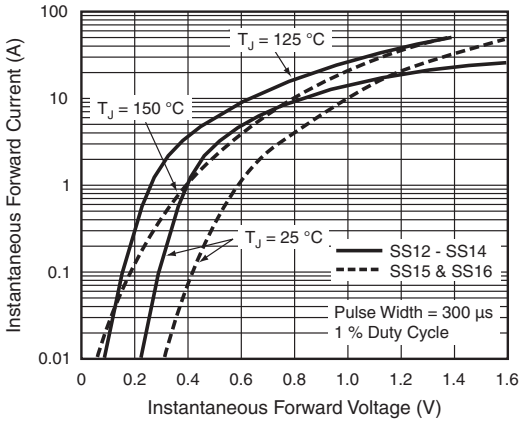


Figure 3. Typical Instantaneous Forward Characteristics

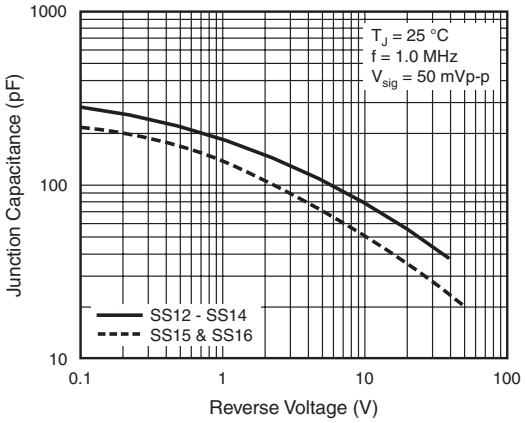


Figure 5. Typical Junction Capacitance

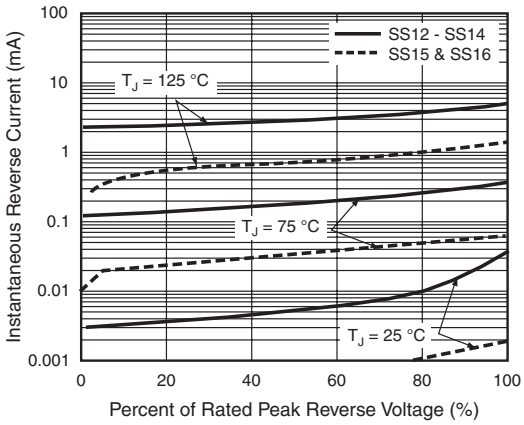
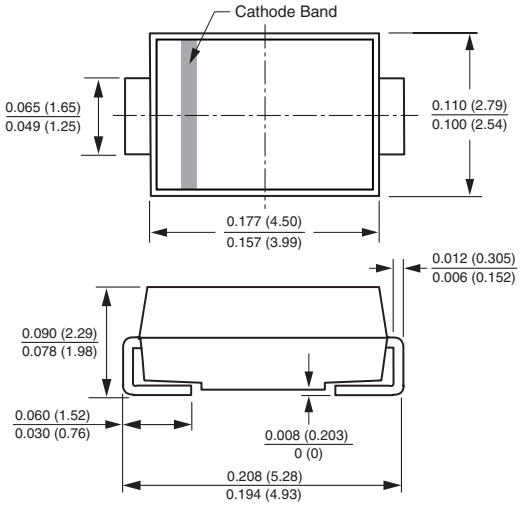


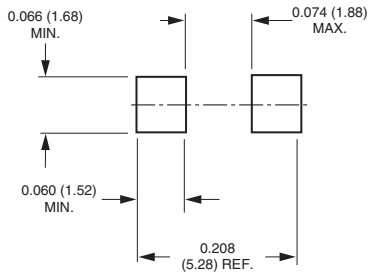
Figure 4. Typical Reverse Characteristics

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-214AC (SMA)



Mounting Pad Layout



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