

## 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-020C
- Solder Dip 260 °C, 40 seconds



### TYPICAL APPLICATIONS

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

### MECHANICAL DATA

**Case:** DO-214AC (SMA)

Epoxy meets UL 94V-0 flammability rating

**Terminals:** Matte tin plated leads, solderable per J-STD-002B and JESD22-B102D

E3 suffix for commercial grade, HE3 suffix for high reliability grade (AEC Q101 qualified)

**Polarity:** Color band denotes the cathode end

### MAJOR RATINGS AND CHARACTERISTICS

$I_{F(AV)}$	1.0 A
$V_{RRM}$	20 V to 60 V
$I_{FSM}$	40 A
$V_F$	0.50 V, 0.70 V
$T_j$ max.	125 °C, 150 °C

### MAXIMUM RATINGS ( $T_A = 25$ °C unless otherwise specified)

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 $T_L$ (see 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	10000					V/ $\mu$ s
Operating junction temperature range	$T_J$	- 65 to + 125			- 65 to + 150		°C
Storage temperature range	$T_{STG}$	- 65 to + 150					°C

### ELECTRICAL CHARACTERISTICS ( $T_A = 25$ °C unless otherwise specified)

PARAMETER	TEST CONDITION	SYMBOL	SS12	SS13	SS14	SS15	SS16	UNIT
Maximum instantaneous forward voltage	at 1.0 A <sup>(1)</sup>	$V_F$	0.50			0.75		V
Maximum DC reverse current at rated DC blocking voltage <sup>(1)</sup>	$T_A = 25$ °C	$I_R$	0.2					mA
	$T_A = 100$ °C		6.0		5.0			

**Note:**

(1) Pulse test: 300  $\mu$ s pulse width, 1 % duty cycle

THERMAL CHARACTERISTICS ( $T_A = 25\text{ }^\circ\text{C}$ unless otherwise specified)							
PARAMETER	SYMBOL	SS12	SS13	SS14	SS15	SS16	UNIT
Typical thermal resistance <sup>(1)</sup>	$R_{\theta JA}$			88			$^\circ\text{C/W}$
	$R_{\theta JL}$			28			

Note:

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

## RATINGS AND CHARACTERISTICS CURVES

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

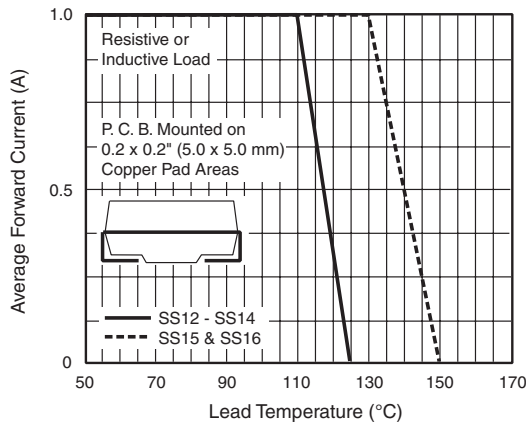


Figure 1. Forward Current Derating Curve

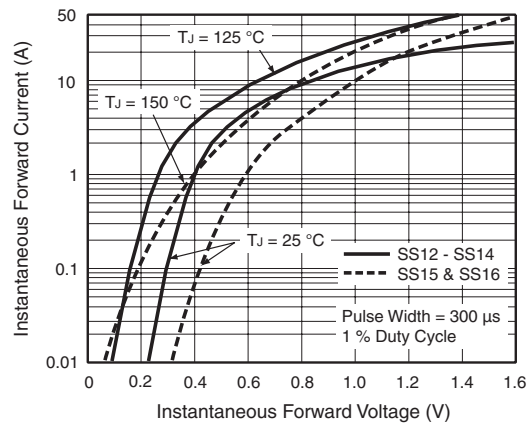


Figure 3. Typical Instantaneous Forward Characteristics

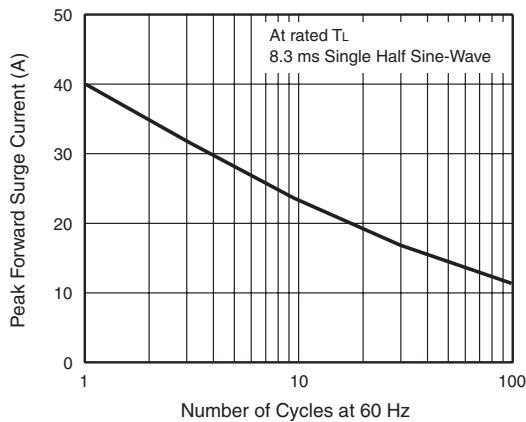


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

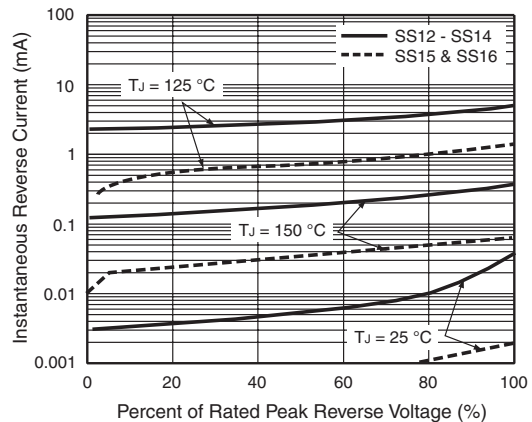


Figure 4. Typical Reverse Characteristics

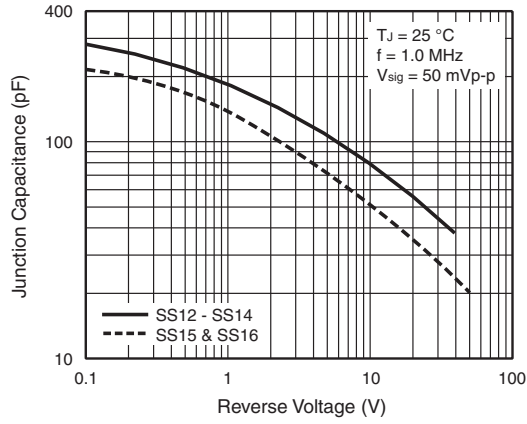
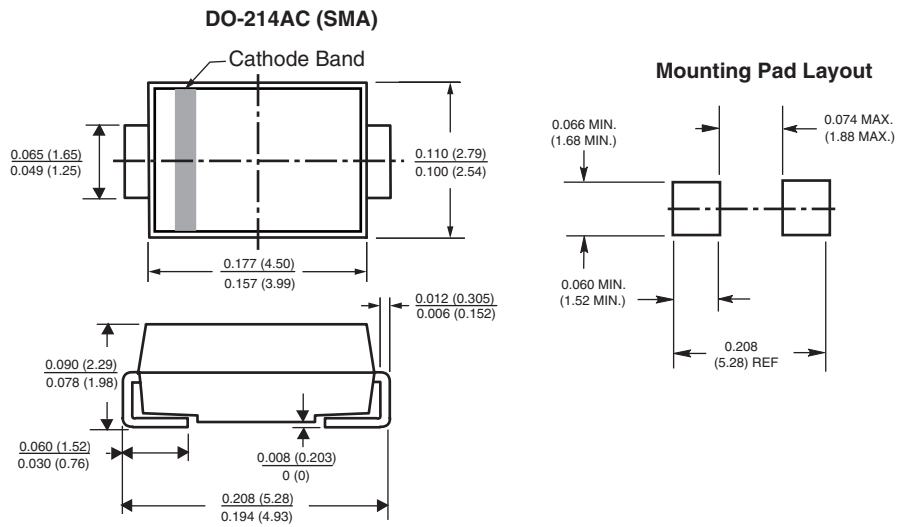


Figure 5. Typical Junction Capacitance

## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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