

## Surface Mount Schottky Barrier Rectifier



DO-214AC (SMA)

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	2 A
$V_{RRM}$	20 V, 30 V, 40 V
$I_{FSM}$	40 A
$V_F$ at $I_F = 2.0$ A	0.517 V
$T_J$ max.	150 °C

### FEATURES

- Low profile package
- Ideal for automated placement
- Low forward voltage drop, low power losses
- High efficiency
- 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.

(Note: These devices are not Q101 qualified.)

### 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

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

MAXIMUM RATINGS ( $T_A = 25$ °C unless otherwise noted)					
PARAMETER	SYMBOL	SS22S	SS23S	SS24S	UNIT
Device marking code		22S	23S	24S	V
Maximum repetitive peak reverse voltage	$V_{RRM}$	20	30	40	V
Maximum average forward rectified current (Fig. 1)	$I_{F(AV)}$	2.0			A
Peak forward surge current 10 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/ $\mu$ s
Operating junction and storage temperature range	$T_J, T_{STG}$	- 55 to + 150			°C



ELECTRICAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)						
PARAMETER	TEST CONDITIONS		SYMBOL	TYP	MAX.	UNIT
Instantaneous forward voltage <sup>(1)</sup>	I <sub>F</sub> = 1 A, I <sub>F</sub> = 2 A,	T <sub>J</sub> = 25 °C	V <sub>F</sub>	0.436 0.517	- 0.55	V
Reverse current <sup>(2)</sup>	rated V <sub>R</sub>	T <sub>J</sub> = 25 °C T <sub>J</sub> = 100 °C	I <sub>R</sub>	13 1.65	200 8	μA mA
Typical junction capacitance	4.0 V, 1 MHz		C <sub>J</sub>	130	-	pF

**Notes:**

- (1) Pulse test: 300 μs pulse width, 1 % duty cycle
- (2) Pulse test: Pulse width ≤ 40 ms

THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)					
PARAMETER	SYMBOL	SS22S	SS23S	SS24S	UNIT
Typical thermal resistance <sup>(1)</sup>	R <sub>θJA</sub> R <sub>θJL</sub>	75 25			°C/W

**Note:**

- (1) P.C.B. mounted with 0.4 x 0.4" (10 x 10 mm) copper pad areas

ORDERING INFORMATION (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
SS24S-E3/61T	0.064	61T	1800	7" diameter plastic tape and reel
SS24S-E3/5AT	0.064	5AT	7500	13" diameter plastic tape and reel

**RATINGS AND CHARACTERISTICS CURVES**

(T<sub>A</sub> = 25 °C unless otherwise noted)

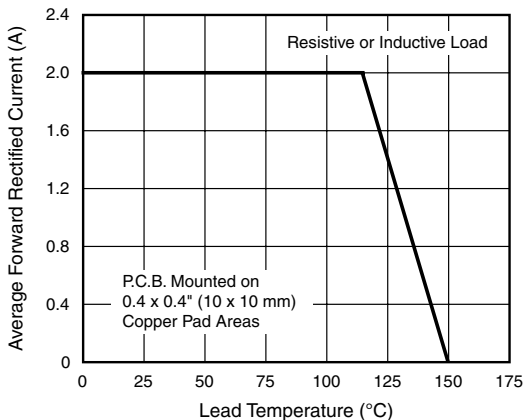


Figure 1. Forward Current Derating Curve

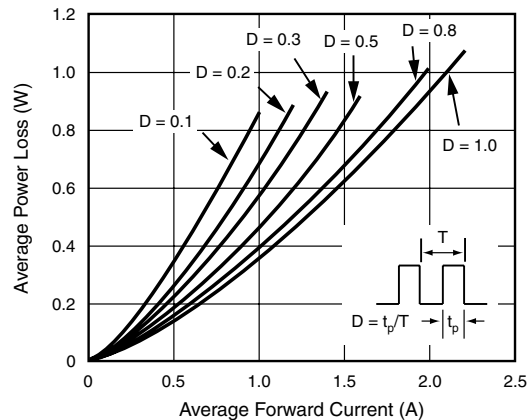


Figure 2. Forward Power Loss Characteristics

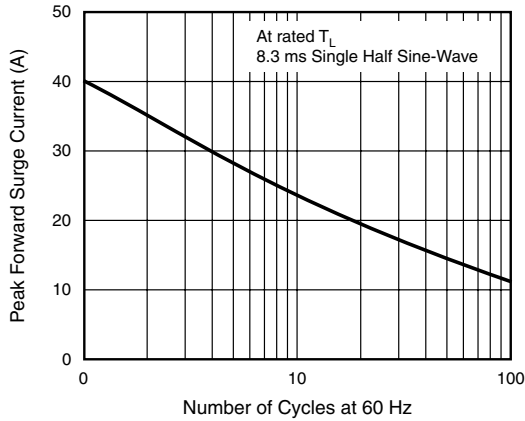


Figure 3. Maximum Non-Repetitive Peak Forward Surge Current

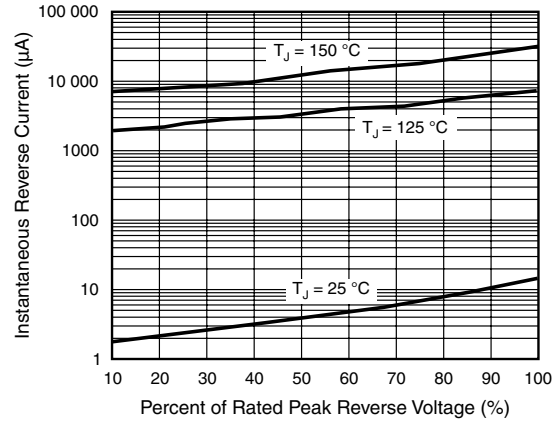


Figure 5. Typical Reverse Leakage Characteristics

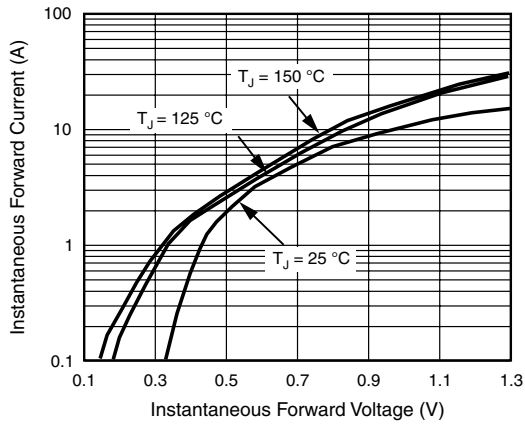


Figure 4. Typical Instantaneous Forward Characteristics

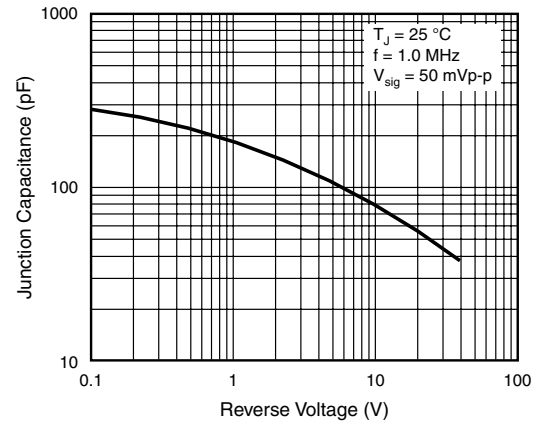
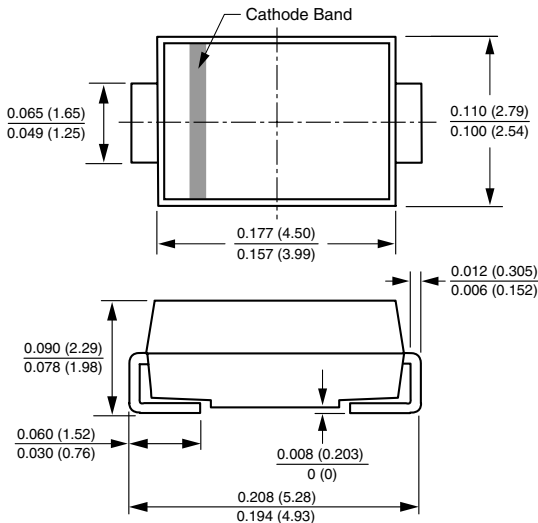


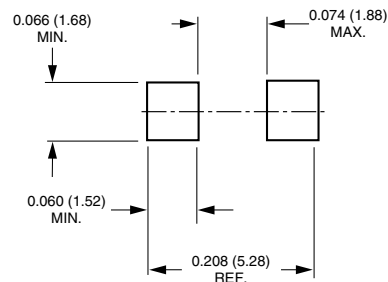
Figure 6. Typical Junction Capacitance

**PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)

**DO-214AC (SMA)**



**Mounting Pad Layout**





## Disclaimer

All product specifications and data are subject to change without notice.

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