Vishay General Semiconductor

# **High-Current Density Surface-Mount Schottky Rectifier**



www.vishay.com

SMA (DO-214AC)

Cathode O Anode

### LINKS TO ADDITIONAL RESOURCES



PRIMARY CHARACTERISTICS				
I <sub>F(AV)</sub>	2.0 A			
V <sub>RRM</sub>	30 V, 40 V			
I <sub>FSM</sub>	50 A			
V <sub>F</sub>	0.50 V, 0.55 V			
T <sub>J</sub> max.	150 °C			
Package	SMA (DO-214AC)			
Circuit configuration	Single			

#### **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
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

#### **TYPICAL APPLICATIONS**

For use in low voltage, high frequency inverters, freewheeling, DC/DC converters, and polarity protection applications.

#### **MECHANICAL DATA**

Case: SMA (DO-214AC)

Molding compound meets UL 94 V-0 flammability rating Base P/N-M3 - halogen-free, RoHS-compliant, and commercial grade

Terminals: matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

M3 suffix meets JESD 201 class 2 whisker test

Polarity: color band denotes the cathode end

<b>MAXIMUM RATINGS</b> ( $T_A = 25 \text{ °C}$ unless otherwise noted)					
PARAMETER	SYMBOL	B230LA	B240A	UNIT	
Device marking code		B23	B24		
Maximum repetitive peak reverse voltage	V <sub>RRM</sub>	30	40	V	
Maximum RMS voltage	V <sub>RMS</sub>	21	28	V	
Maximum DC blocking voltage	V <sub>DC</sub>	30	40	V	
Maximum average forward rectified current at T <sub>L</sub> (fig. 1)	I <sub>F(AV)</sub>	2.0		А	
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I <sub>FSM</sub>	50		А	
Voltage rate of change (rated V <sub>R</sub> )	dV/dt	10 000		V/µs	
Operating junction and storage temperature range	T <sub>J</sub> , T <sub>STG</sub>	-65 to +150		°C	

<b>ELECTRICAL CHARACTERISTICS</b> ( $T_A = 25 \text{ °C}$ unless otherwise noted)						
PARAMETER	TEST CONDITIONS		SYMBOL	B230LA	B240A	UNIT
Maximum instantaneous forward voltage	2.0 A	T <sub>J</sub> = 25 °C	V <sub>F</sub> <sup>(1)</sup>	0.5	0.55	V
Maximum reverse current at rated $\ensuremath{V_{R}}$		T <sub>J</sub> = 25 °C	I <sub>R</sub> <sup>(2)</sup>	0.5	0.5	mA

#### Notes

<sup>(1)</sup> Pulse test: 300 µs pulse width, 1 % duty cycle

<sup>(2)</sup> Pulse test: Pulse width  $\leq$  40 ms

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FREE



## B230LA-M3, B240A-M3

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<b>THERMAL CHARACTERISTICS</b> ( $T_A = 25 \text{ °C}$ unless otherwise noted)						
PARAMETER	SYMBOL	B230LA B240A		UNIT		
Typical thermal resistance	R <sub>0JA</sub> <sup>(1)</sup>	110		°C/W		
	R <sub>θJL</sub> <sup>(1)</sup>	28				

Note

<sup>(1)</sup> Aluminum substrate mounted

ORDERING INFORMATION (Example)					
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE	
B230LA-M3/61T	0.064	61T	1800	7" diameter plastic tape and reel	
B230LA-M3/5AT	0.064	5AT	7500	13" diameter plastic tape and reel	

#### RATINGS AND CHARACTERISTICS CURVES (T<sub>A</sub> = 25 °C unless otherwise noted)

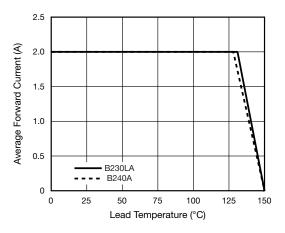


Fig. 1 - Forward Current Derating Curve

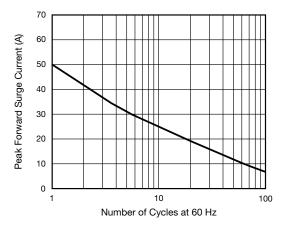


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

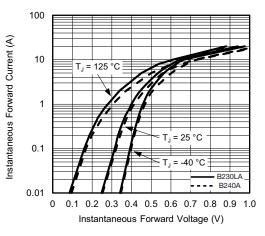


Fig. 3 - Typical Instantaneous Forward Characteristics

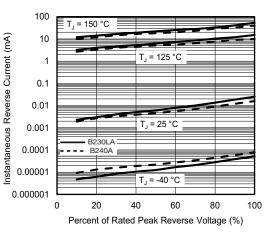


Fig. 4 - Typical Reverse Characteristics

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### B230LA-M3, B240A-M3

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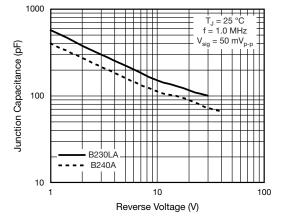
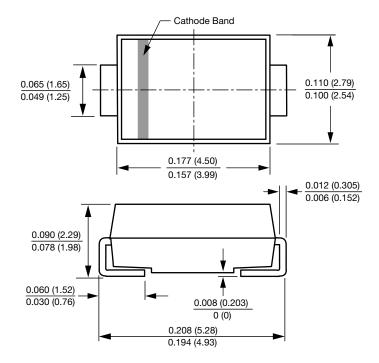
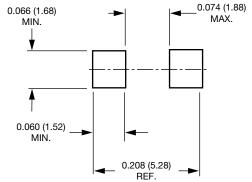


Fig. 5 - Typical Junction Capacitance

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



#### SMA (DO-214AC)



**Mounting Pad Layout** 

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