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 _{F(AV)}	2.0 A			
V _{RRM}	30 V, 40 V			
I _{FSM}	50 A			
V _F	0.50 V, 0.55 V			
T _J 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

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

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

Notes

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

⁽²⁾ Pulse test: Pulse width \leq 40 ms

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FREE



B230LA-M3, B240A-M3

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

Note

⁽¹⁾ 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_A = 25 °C unless otherwise noted)

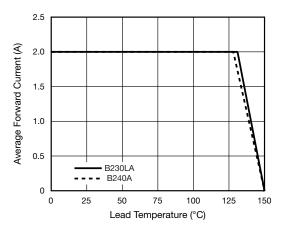


Fig. 1 - Forward Current Derating Curve

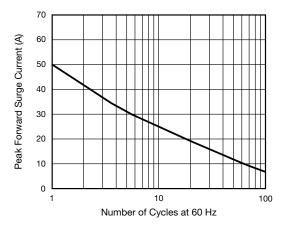


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

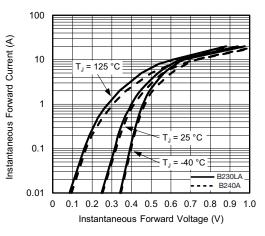


Fig. 3 - Typical Instantaneous Forward Characteristics

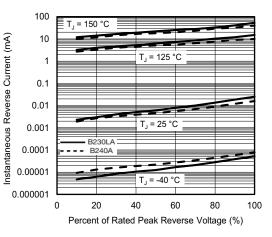


Fig. 4 - Typical Reverse Characteristics

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B230LA-M3, B240A-M3

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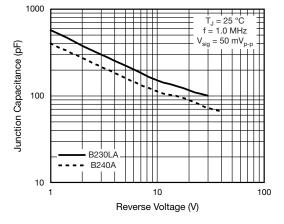
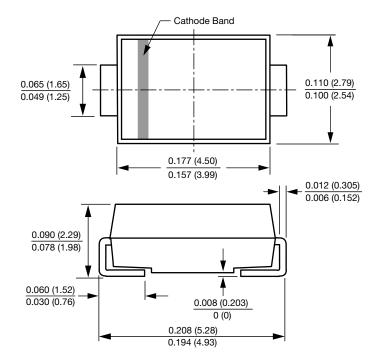
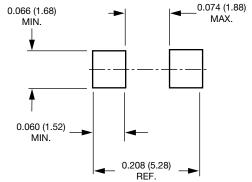


Fig. 5 - Typical Junction Capacitance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)



SMA (DO-214AC)



Mounting Pad Layout

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