

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.

(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

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	1.0 A
V_{RRM}	20 V to 60 V
I_{FSM}	30 A
V_F	0.52 V, 0.75 V
T_J max.	125 °C, 150 °C

MAXIMUM RATINGS ($T_A = 25$ °C unless otherwise noted)							
PARAMETER	SYMBOL	B120	B130	B140	B150	B160	UNIT
Device marking code		B12	B13	B14	B15	B16	V
Maximum repetitive peak reverse voltage	V_{RRM}	20	30	40	50	60	V
Maximum average forward rectified current (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}	30					A
Voltage rate of change (rated V_R)	dV/dt	10 000					V/ μ 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 noted)									
PARAMETER	TEST CONDITIONS		SYMBOL	B120	B130	B140	B150	B160	UNIT
Maximum instantaneous forward voltage ⁽¹⁾	1.0 A		V _F	0.52			0.75		V
Maximum reverse current at rated V _R ⁽²⁾		T _A = 25 °C	I _R	0.2					mA
		T _A = 100 °C		6.0		5.0			

Notes:

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

THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)								
PARAMETER	SYMBOL	B120	B130	B140	B150	B160	UNIT	
Typical thermal resistance ⁽¹⁾	R _{θJA}				95		°C/W	
	R _{θJL}				30			

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
B140-E3/61T	0.064	61T	1800	7" diameter plastic tape and reel
B140-E3/5AT	0.064	5AT	7500	13" diameter plastic tape and reel

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

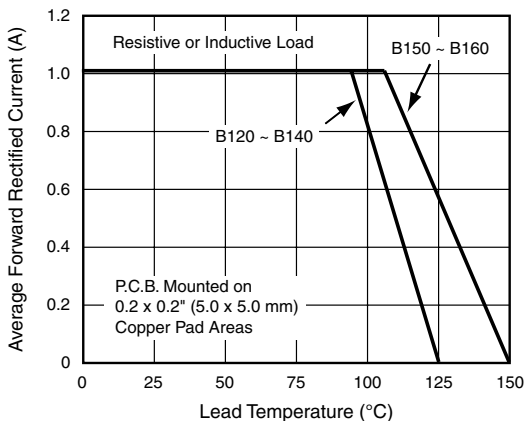


Figure 1. Maximum Forward Current Derating Curve

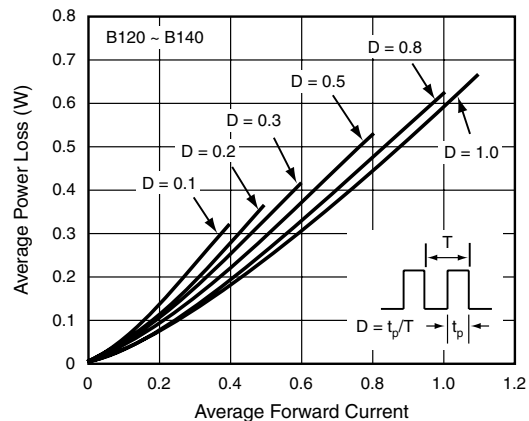


Figure 2. Forward Power Loss Characteristics

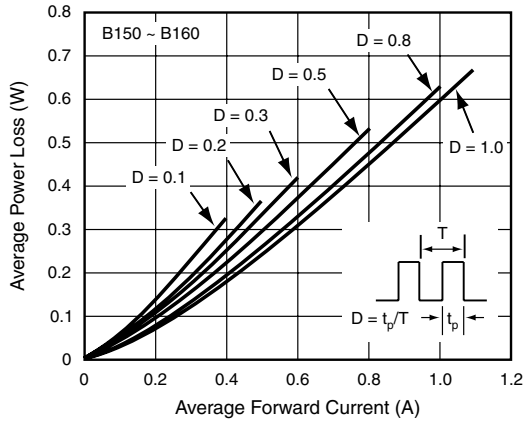


Figure 3. Forward Power Loss Characteristics

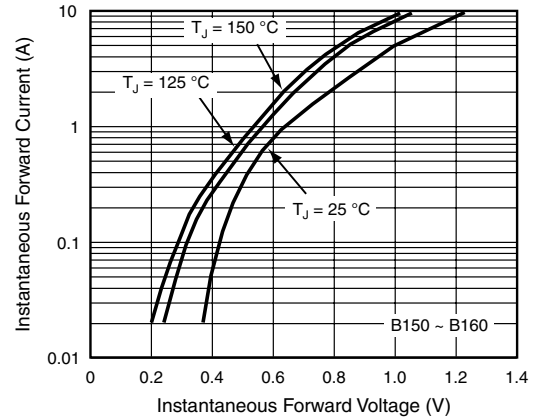


Figure 6. Typical Instantaneous Forward Characteristics

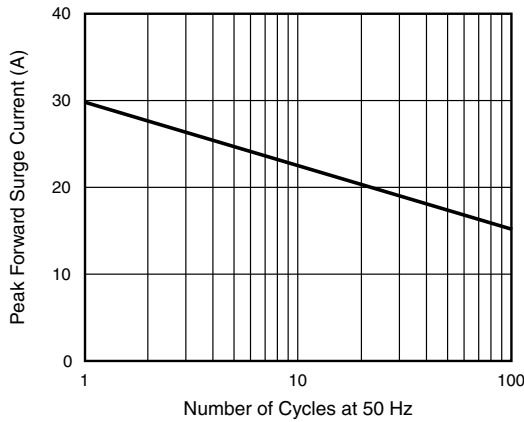


Figure 4. Typical Instantaneous Forward Characteristics

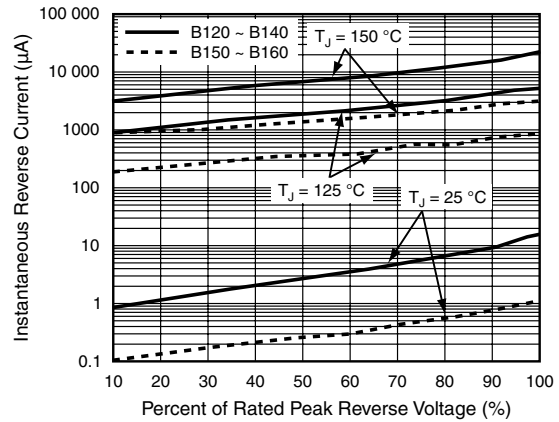


Figure 7. Typical Reverse Leakage Characteristics

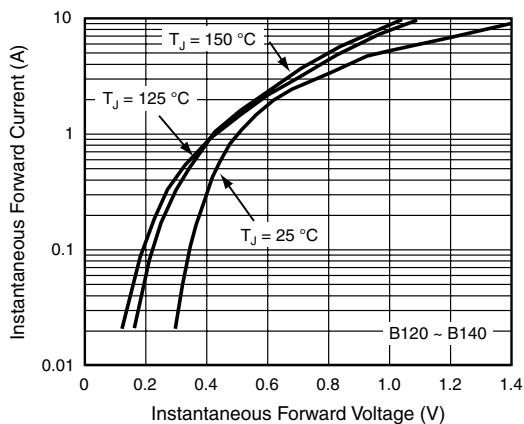


Figure 5. Typical Instantaneous Forward Characteristics

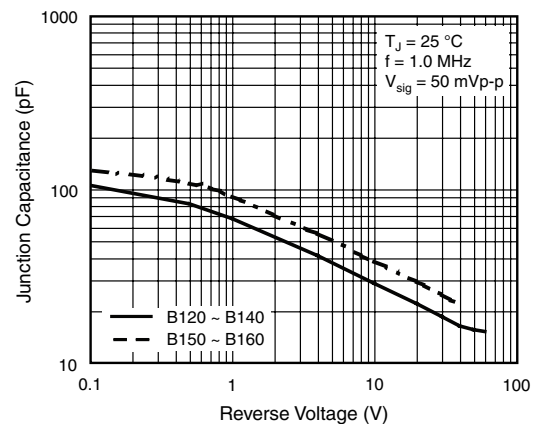
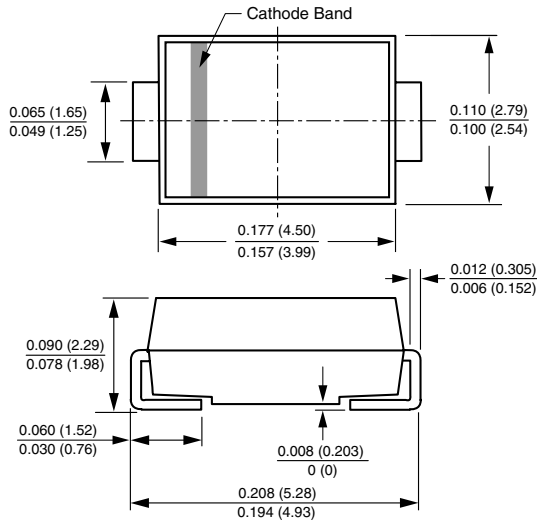


Figure 8. Typical Junction Capacitance

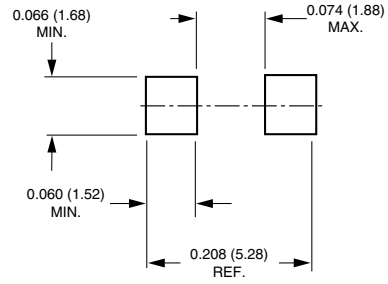


PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-214AC (SMA)



Mounting Pad Layout





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

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