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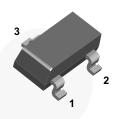
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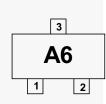
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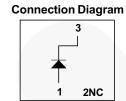
February 2015

BAS16 Small Signal Diode



SOT-23





Ordering Information

Part Number	Top Mark	Package	Packing Method
BAS16	A6	SOT-23 3L	Tape and Reel, 7 inch Reel, 3000 pcs
BAS16_D87Z	A6	SOT-23 3L	Tape and Reel, 13 inch Reel, 10000 pcs

Absolute Maximum Ratings(1), (2)

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only. Values are at $T_A = 25^{\circ}\text{C}$ unless otherwise noted.

Symbol	Parameter		Value	Unit
V _{RRM}	Maximum Repetitive Reverse Voltage		85	V
I _{F(AV)}	Average Rectified Forward Current		200	mA
	Non-Repetitive Peak Forward Surge Current	Pulse Width = 1.0 second	1.0	Α
		Pulse Width = 1.0 microsecond	2.0	_ ^
T _{STG}	Storage Temperature Range		-55 to +150	°C
TJ	Operating Junction Temperature		-55 to +150	°C

Notes

- 1. These ratings are based on a maximum junction temperature of 150°C.
- 2. These are steady-state limits. Fairchild Semiconductor should be consulted on applications involving pulsed or low-duty-cycle operations.

Thermal Characteristics

Values are at $T_A = 25^{\circ}C$ unless otherwise noted.

Symbol	Parameter	Value	Unit
P_{D}	Power Dissipation	350	mW
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	357	°C/W

Electrical Characteristics

Values are at $T_A = 25$ °C unless otherwise noted.

Symbol	Parameter	Conditions	Min.	Max.	Unit
V _R	Breakdown Voltage	I _R = 5.0 μA	85		V
V _F	Forward Voltage	I _F = 1.0 mA		715	mV
		I _F = 10 mA		855	mV
		I _F = 50 mA		1.0	V
		I _F = 150 mA		1.25	V
I _R	Reverse Current	V _R = 75 V		1.0	μА
		V _R = 25 V, T _A = 150°C		30	
		V _R = 75 V, T _A = 150°C		50	
C _T	Total Capacitance	V _R = 0, f = 1.0 MHz		2.0	pF
t _{rr}	Reverse Recovery Time	$I_F = I_R = 10 \text{ mA}, I_{RR} = 1.0 \text{ mA}, R_L = 100 \Omega$		6.0	ns

Typical Performance Characteristics

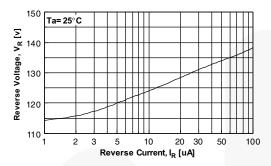


Figure 1. Reverse Voltage vs. Reverse Current BV - 1.0 to 100 μA

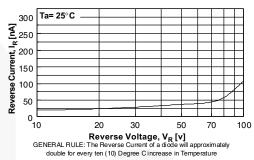


Figure 2. Reverse Current vs. Reverse Voltage

I_R - 10 to 100 V

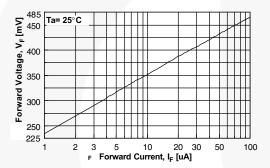


Figure 3. Forward Voltage vs. Forward Current V_F - 1.0 to 100 μA

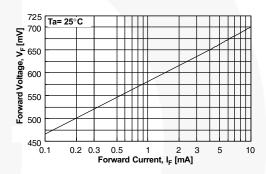


Figure 4. Forward Voltage vs. Forward Current V_F - 1.0 to 100 mA

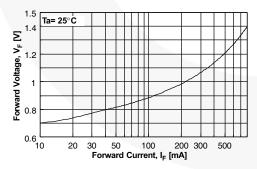


Figure 5. Forward Voltage vs. Forward Current V_F - 10 to 800 mA

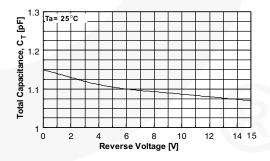


Figure 6. Total Capacitance

Typical Performance Characteristics (Continued)

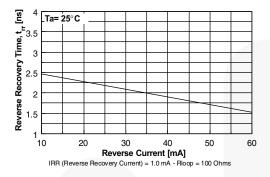


Figure 7. Reverse Recovery Time vs. Reverse Current

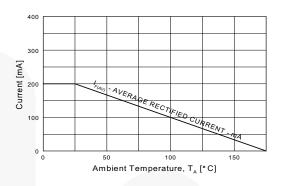


Figure 8. Average Rectified Current($I_{F(AV)}$) vs. Ambient Temperature(T_A)

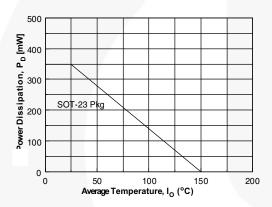


Figure 9. Power Derating Curve

Physical Dimensions 0.95 2.92±0.20 3 1.40 1.30^{+0.20}_{-0.15} 2.20 2 0.60 0.37 (0.29) -0.95 ⊕ 0.20 M A B -1.00 1.90 1.90 LAND PATTERN RECOMMENDATION SEE DETAIL A 1.20 MAX 0.10 (0.93)0.10(M) C С 2.40±0.30 NOTES: UNLESS OTHERWISE SPECIFIED **GAGE PLANE** A) REFERENCE JEDEC REGISTRATION TO-236, VARIATION AB, ISSUE H. B) ALL DIMENSIONS ARE IN MILLIMETERS. 0.23 0.08 C) DIMENSIONS ARE INCLUSIVE OF BURRS, 0.25 MOLD FLASH AND TIE BAR EXTRUSIONS. D) DIMENSIONING AND TOLERANCING PER ASME Y14.5M - 1994. 0.20 MIN E) DRAWING FILE NAME: MA03DREV10 SEATING **PLANE** (0.55)**DETAIL A** SCALE: 2X

Figure 10. 3-LEAD, SOT23, JEDEC TO-236, LOW PROFILE





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Preliminary	First Production	Datasheet contains preliminary data; supplementary data will be published at a later date. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve design.
No Identification Needed	Full Production	Datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve the design.
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