

BAT165WS

Small-Signal Schottky Barrier Diode



Features

- Moisture sensitivity level 1
- Reverse voltage: 40V
- Average forward current : 750mA

Application

- High frequency and low voltage rectifier

Mechanical data

- **Package:** SOD-323
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102

■ Maximum Ratings ($T_a=25^{\circ}\text{C}$ Unless otherwise specified)

Parameter	Symbol	Unit	Value
Device marking code			2G
Repetitive peak reverse voltage	V_{RRM}	V	40
Forward current	I_F	mA	750
Non-repetitive surge peak forward current @ $t=8.3\text{ms}$ half-sine wave	I_{FSM}	A	10
Non-repetitive surge peak forward current @ $t=1\text{ms}$ square wave			5
Power dissipation	P_D	mW	380
Junction temperature	T_J	$^{\circ}\text{C}$	-55 to +150
Storage temperature	T_{STG}	$^{\circ}\text{C}$	-55 to +150

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■ Electrical Characteristics (T_a=25°C Unless otherwise specified)

Parameter	Symbol	Unit	Conditions	Min	Typ	Max
Breakdown voltage	V _R	V	I _R =1mA	40		
Forward voltage	V _{F1}	V	I _F =10mA		0.29	0.38
	V _{F2}	V	I _F =100mA		0.37	0.47
	V _{F3}	V	I _F =250mA		0.42	0.54
	V _{F4}	V	I _F =500mA		0.48	0.64
	V _{F5}	V	I _F =750mA		0.54	0.74
Reverse leakage current	I _{R1}	uA	V _R =30V		1.2	5
	I _{R2}	uA	V _R =40V		2	8
Junction capacitance	C _j	pF	V _R =10V, f=1MHz		15	

■ Thermal Characteristics

Parameter	Symbol	Unit	Value
Thermal resistance, junction-to-ambient	R _{θJ-A} ⁽¹⁾	°C/W	330
Thermal resistance, junction-to-case	R _{θJ-C} ⁽¹⁾	°C/W	264

Note:

(1) Thermal resistance from junction to ambient and from junction to case mounted on P.C.B. with 8mm*9mm copper pad areas

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■ Characteristics

Fig 1: P_D-T_a Curve

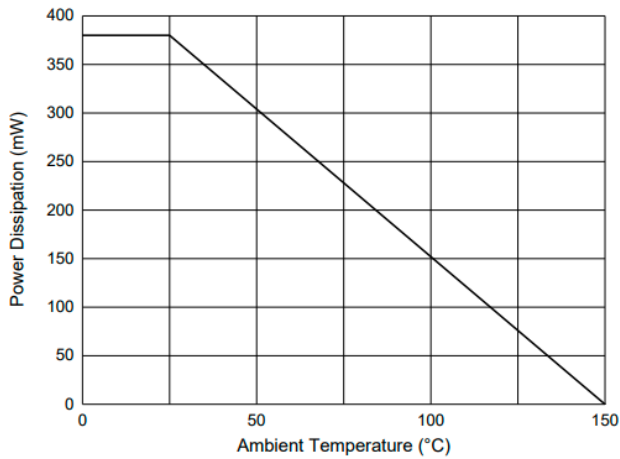


Fig 2: Capacitance Capability

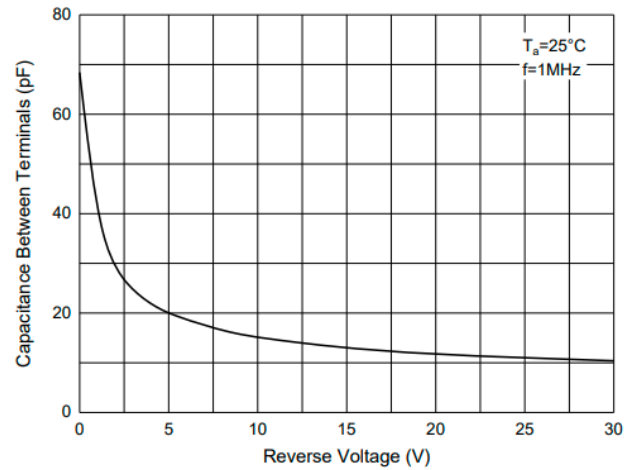


Fig 3: Typical Forward Characteristics

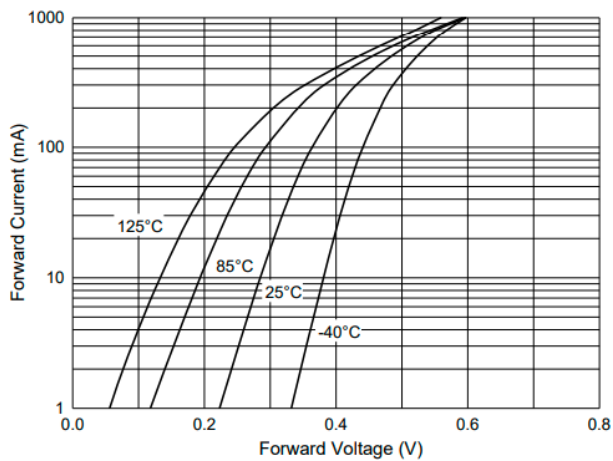
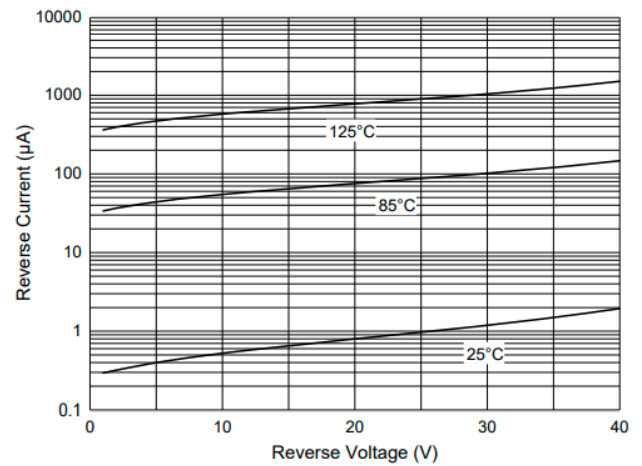


Fig 4: Typical Reverse Characteristics

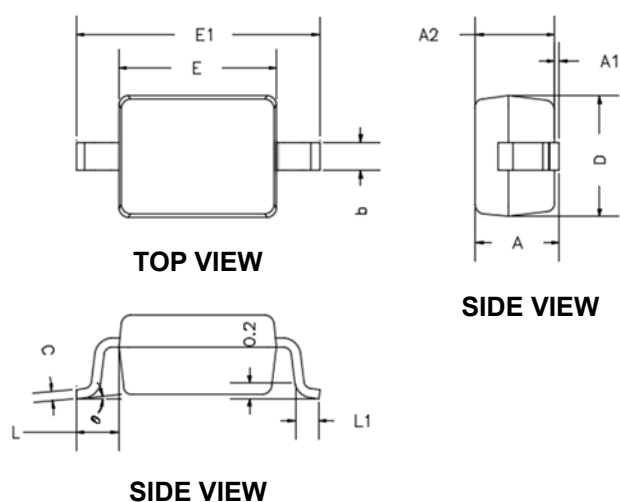


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■ Ordering Information

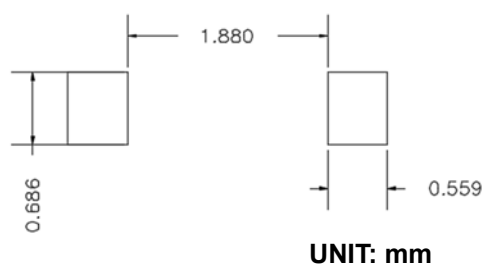
Preferred P/N	Packing code	Unit weight(g)	Minimum package(pcs)	Inner box quantity(pcs)	Outer carton quantity(pcs)	Delivery mode
BAT165WS	F2	Approximate 0.0048	3000	30000	120000	7" reel
BAT165WS	F3	Approximate 0.0048	10000	/	210000	13" reel

■ Outline Dimensions



DIMENSIONS				
DIM	INCHES		MM	
	MIN	MAX	MIN	MAX
A	---	0.0393	---	1.0000
A1	0.0000	0.0039	0.0000	0.1000
A2	0.0314	0.0354	0.8000	0.9000
b	0.0098	0.0157	0.2500	0.4000
c	0.0031	0.0059	0.0800	0.1500
D	0.0472	0.0551	1.2000	1.4000
E	0.0629	0.0709	1.6000	1.8000
E1	0.0984	0.1063	2.5000	2.7000
L	0.0187TYP		0.475TYP	
L1	0.0098	0.0157	0.250	0.400
θ	0°	8°	0°	8°

■ Suggested Pad Layout



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