



Surface Mount GaAs Schottky Detector and Mixer Diode

Description

BHWS582 is a Schottky diode designed in advanced Gallium Arsenide (GaAs) process and optimized for operation in the 300MHz-6GHz frequency range. It is ideal for a wide range of applications including RFID, ETC, detector, mixer, as well as other high-frequency signal detection and RF-to-DC conversion applications. The device has integrated ESD (1500V HBM) and reverse over-voltage protection, and offered in ultra-small SOD-882 packages.

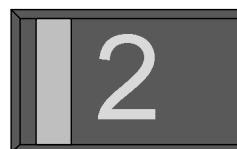
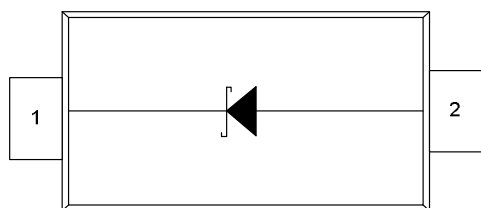
Key Features

- Advanced GaAs Process
- Broadband 0.3- 6GHz Operation
- Detection Sensitivity $<-60\text{dBm}$ at 5.8GHz
- $V_F \sim 0.65\text{V}$ at 1mA Forward Current
- Integrated ESD Protection for $\pm 1.5\text{KV}$ HBM
- Integrated Reverse Over-Voltage Protection
- Ultra-Compact 1.0x0.6mm SOD-882 Package

Key Applications

- RFID, RF Tag
- Electronic Toll Collection (ETC)
- RF/Microwave Mixer
- RF/Microwave Detector
- Low-Noise Receiver
- RF-to-DC Conversion
- Generic Radio Design

Functional Block and Package Information

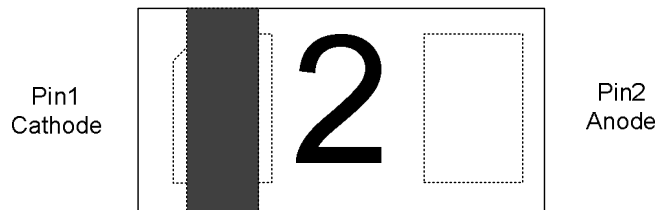


1.0x0.6x0.51mm SOD-882



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Pin Assignment and Pin Description



(Top “See-Through” View)

Pin Number	Pin Name	Description
1	Cathode	Cathode of the diode
2	Anode	Anode of the diode

Absolute Maximum Ratings

Parameter	Rating	Unit
Maximum Reverse Voltage	4	V
Maximum Forward Current	50	mA
Maximum Power Dissipation	75	mW
Junction Temperature	+150	°C
Operation Temperature	-40 to +85	°C
Storage Temperature	-65 to +150	°C
Moisture Sensitivity Level	MSL1	
ESD (HBM)	+/-1500	V

Note: Do not exceed any single or combination of the above parameters. Sustained operation at or above the Absolute Maximum Ratings may result in permanent damage to the device.

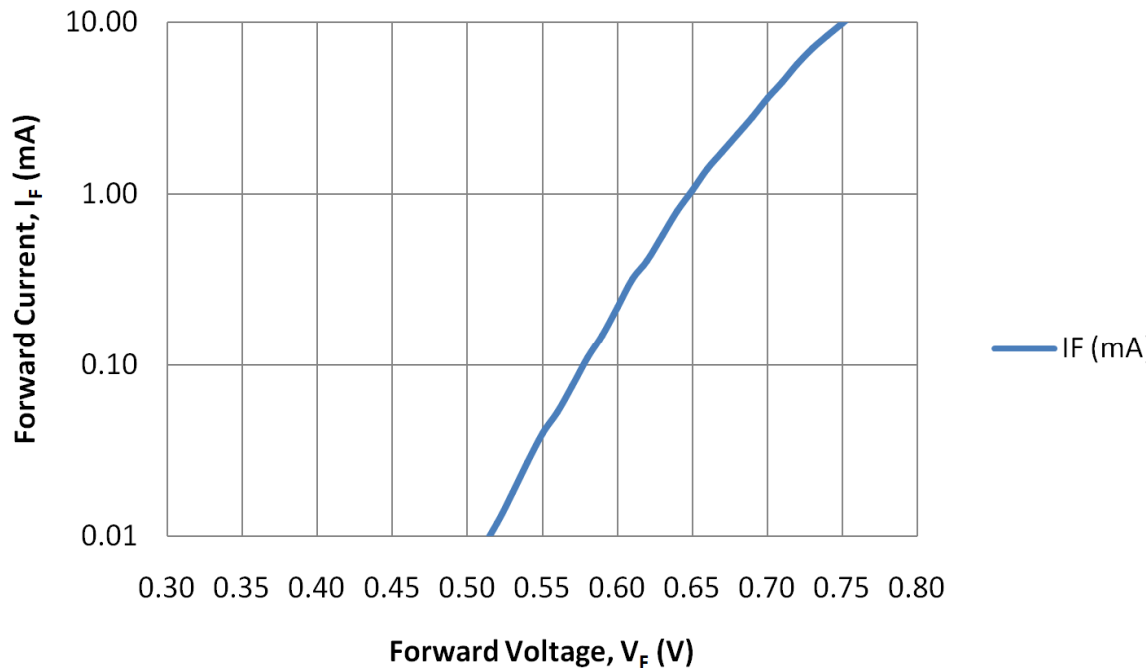


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Electrical Specifications

Parameter	Condition	Specification			Unit
		Min.	Typ.	Max.	
Forward Voltage V_F	$I_F=0.1\text{mA}$		0.58		V
Forward Voltage V_F	$I_F=1\text{mA}$		0.65		V
Reverse Breakdown Voltage	$I_R=10\text{uA}$		3		V
Reverse Leakage Current	$V_R=3\text{V}$		10		μA
Reverse Leakage Current	$V_R=3.6\text{V}$		1		mA

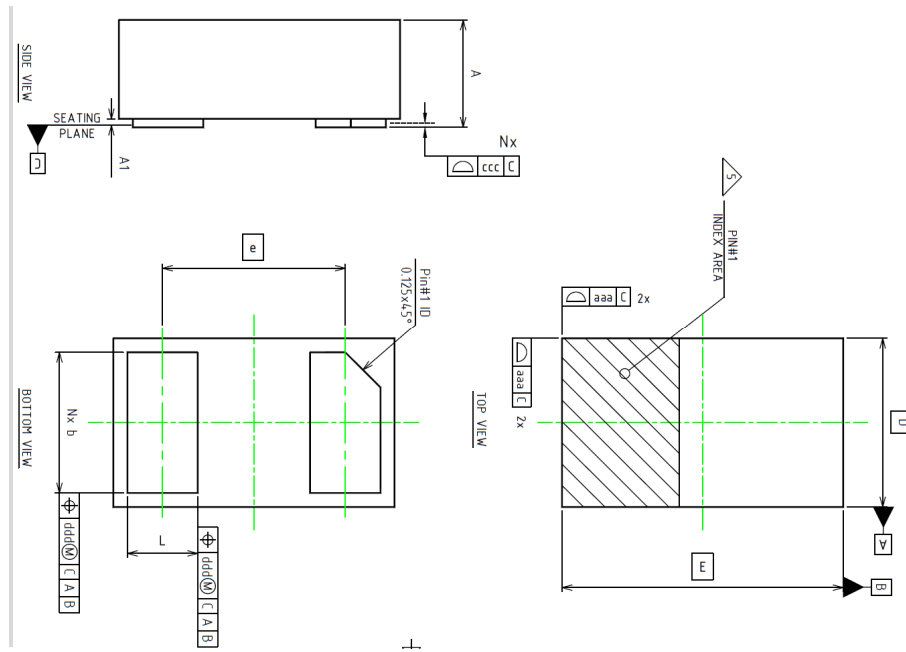
Typical Forward Current vs Forward Voltage





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Package Drawing and Dimensions (SOD-882)



Dimension Table										
Variation Symbol	UT1			X1			X2			NOTE
	MINIMUM	NOMINAL	MAXIMUM	MINIMUM	NOMINAL	MAXIMUM	MINIMUM	NOMINAL	MAXIMUM	
A	0.47	0.51	0.55	0.41	0.45	0.50	0.31	0.38	0.40	6
A1	0.00	0.02	0.05	0.00	0.02	0.05	0.00	0.02	0.05	7
b	0.45	0.50	0.55	0.45	0.50	0.55	0.45	0.50	0.55	
D	0.60 BSC			0.60 BSC			0.60 BSC			
E	1.00 BSC			1.00 BSC			1.00 BSC			
e	0.65 BSC			0.65 BSC			0.65 BSC			3
L	0.20	0.25	0.30	0.20	0.25	0.30	0.20	0.25	0.30	
aaa	0.05			0.05			0.05			
ccc	0.03			0.03			0.03			
ddd	0.10			0.10			0.10			
N	2			2			2			4

Ordering Information

BHWS582 SOD-882: 10,000 pcs per 7" Reel