



DESCRIPTION

The MBD914 is available in SOT-23 Package.

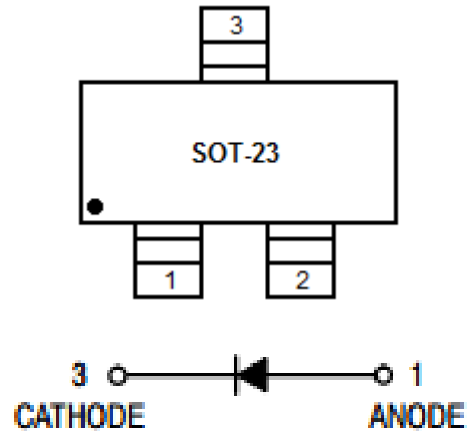
FEATURES

- Available in SOT-23 Package

ORDERING INFORMATION

Package Type	Part Number
SOT-23	MBD914
Note	SPQ: 3,000pcs/Reel
AiT provides all RoHS Compliant Products	

PIN DESCRIPTION





ABSOLUTE MAXIMUM RATINGS

V_R , Reverse Voltage	100Vdc
I_F , Forward Current	200mAdc
$I_{FM(surge)}$, Peak Forward Surge Current	500mAdc

Stresses above may cause permanent damage to the device. These are stress ratings only and functional operation of the device at these or any other conditions beyond those indicated in the Electrical Characteristics are not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

THERMAL CHARACTERISTICS

Parameter	Symbol	Max	Unit
Total Device Dissipation FR-5 Board, ^{NOTE1} $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	225 1.8	mW mW/ $^\circ\text{C}$
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	556	$^\circ\text{C}/\text{W}$
Total Device Dissipation Alumina Substrate ^{NOTE2} $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	300 2.4	mW mW/ $^\circ\text{C}$
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	417	$^\circ\text{C}/\text{W}$
Junction and Storage Temperature	T_J, T_{STG}	-55 ~ +150	$^\circ\text{C}$

NOTE1: FR-5 = 1.0 x 0.75 x 0.062 in.

NOTE2: Alumina = 0.4 x 0.3 x 0.024 in. 99.5% alumina.

ELECTRICAL CHARACTERISTICS

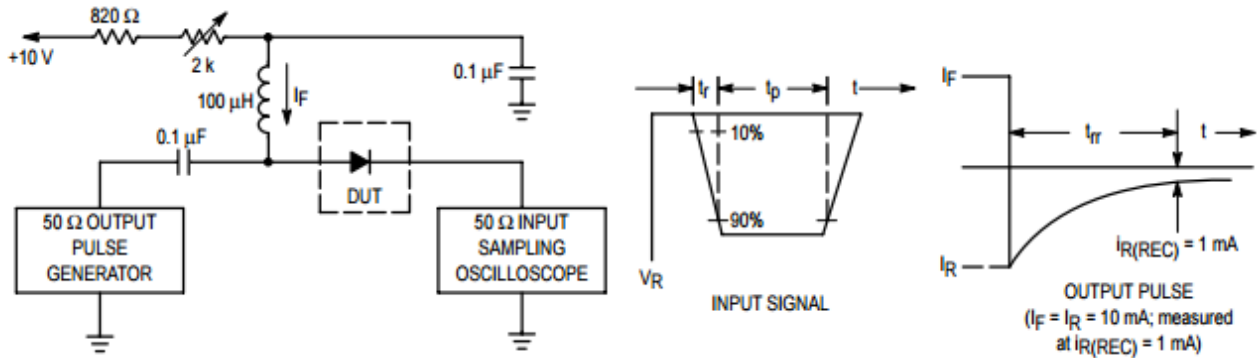
$T_A = 25^\circ\text{C}$, unless otherwise noted.

Parameter	Symbol	Conditions	Min	Max	Unit
OFF CHARACTERISTICS					
Reverse Breakdown Voltage	$V_{(BR)}$	$I_R = 100\mu\text{Adc}$	100	-	Vdc
Reverse Voltage Leakage Current	I_R	$V_R = 20\text{Vdc}$	-	25	nAdc
		$V_R = 75\text{Vdc}$	-	5.0	μAdc
Diode Capacitance	C_T	$V_R = 0\text{V}$, $f = 1.0\text{ MHz}$	-	4.0	pF
Forward Voltage	V_F	$I_F = 10\text{mAdc}$	-	1.0	Vdc
Reverse Recovery Time	t_{rr}	$I_F = I_R = 10\text{mAdc}$ (Figure.1)	-	4.0	ns



TYPICAL PERFORMANCE CHARACTERISTICS

Figure. 1 Recovery Time Equivalent Test Circuit



NOTE1: A 2.0kΩ variable resistor adjusted for a Forward Current (I_F) of 10mA.
NOTE2: Input pulse is adjusted so $I_{R(peak)}$ is equal to 10mA.
NOTE3: $t_p \gg t_{rr}$

Figure. 2 Forward Voltage

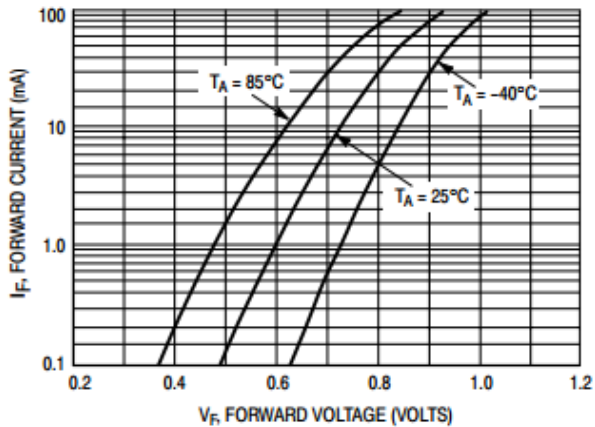


Figure. 3 Leakage Current

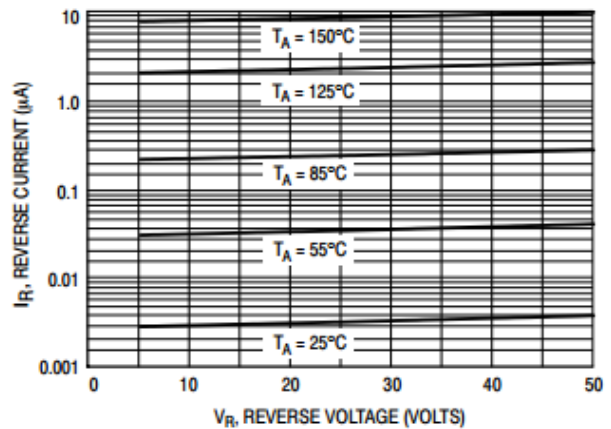
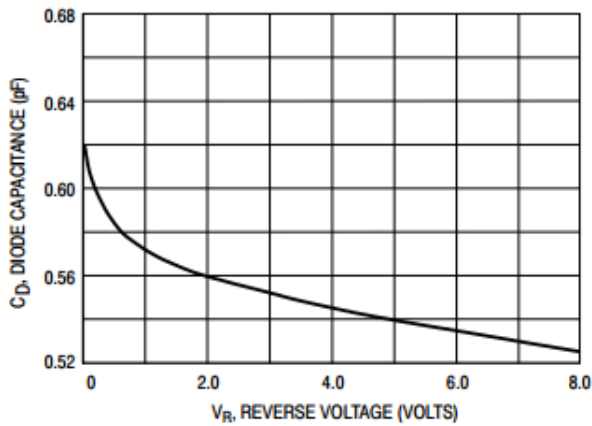


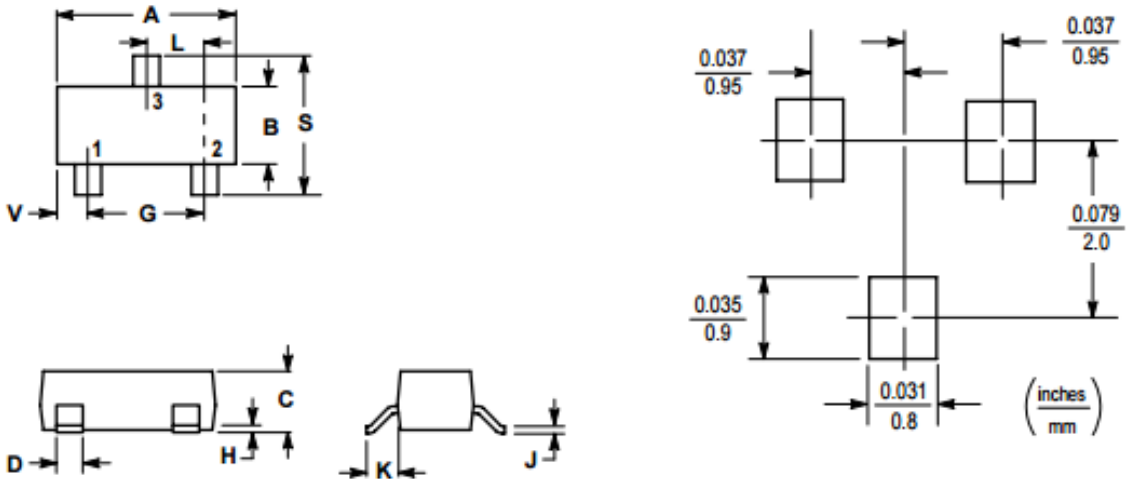
Figure. 4 Capacitance





PACKAGE INFORMATION

Dimension in SOT-23 Package (Unit: mm)



DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.1102	0.1197	2.80	3.04
B	0.0472	0.0551	1.20	1.40
C	0.0350	0.0440	0.89	1.11
D	0.0150	0.0200	0.37	0.50
G	0.0701	0.0807	1.78	2.04
H	0.0005	0.0040	0.013	0.100
J	0.0034	0.0070	0.085	0.177
K	0.0140	0.0285	0.35	0.69
L	0.0350	0.0401	0.89	1.02
S	0.0830	0.1039	2.10	2.64
V	0.0177	0.0236	0.45	0.60



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