



DESCRIPTION

The MSD103A~MSD103C are available in SOD-123 package.

ORDERING INFORMATION

Package Type	Part Number
SOD-123	MSD103A
	MSD103B
	MSD103C
Note	3,000pcs/ Reel
AiT provides all RoHS Compliant Products	

PIN DESCRIPTION



FEATURES

- Low Forward Voltage Drop
- Guard Ring Construction for Transient Protection
- Negligible Reverse Recovery Time
- Low Reverse Capacitance
- Also Available in Lead Free Version
- Available in SOD-123 package

MECHANICAL DATA

- Case: SOD-123, Plastic
- Case material - UL Flammability Rating Classification 94V-0
- Moisture sensitivity: Level 1 per J-STD-020A
- Polarity: Cathode Band
- Leads: Solderable per MIL-STD-202, Method 208
- Also Available in Lead Free Plating (Matte Tin Finish).
- Weight: 0.01 grams (approx.)



ABSOLUTE MAXIMUM RATINGS

@ T_A = 25°C, unless otherwise specified

Parameter	Symbol	MSD103A	MSD103B	MSD103C	Unit
Peak Repetitive Reverse Voltage	V _{RRM}				
Working Peak Reverse Voltage	V _{RWM}	40	30	20	V
DC Blocking Voltage	V _R				
RMS Reverse Voltage	V _{R(RMS)}	28	21	14	V
Forward Continuous Current ^{NOTE1}	I _{FM}	350			mA
Non-Repetitive Peak Forward Surge Current @ t ≤ 1.0s	I _{FSM}	1.5			A
Power Dissipation ^{NOTE1}	P _D	400			mW
Thermal Resistance, Junction to Ambient A _{ir} ^{NOTE1}	R _{θJA}	300			°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-65 to +125			°C

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.

NOTE1: Part mounted on FR-4 board with recommended pad layout, which can be found on our website

ELECTRICAL CHARACTERISTICS

@ T_A = 25°C, unless otherwise specified

Parameter	Symbol	Conditions	Min	Typ.	Max	Units	
Reverse Breakdown Voltage ^{NOTE2}	V _{(BR)R}	MSD103A	40	-	-	V	
		MSD103B	30	-	-		
		MSD103C	20	-	-		
Forward Voltage Drop ^{NOTE2}	V _{FM}	I _F = 20mA	-	-	0.37	V	
		I _F = 200mA	-	-	0.60		
Peak Reverse Current ^{NOTE2}	I _{RM}	V _R = 30V	MSD103A	-	-	5.0	μA
		V _R = 20V	MSD103B	-	-		
		V _R = 10V	MSD103C	-	-		
Total Capacitance	C _T	V _R = 0V, f = 1.0MHz		28		pF	
Reverse Recovery Time	t _{rr}	I _F = I _R = 200mA, I _{rr} = 0.1 x I _R , R _L = 100Ω		10		ns	

NOTE2: Short duration test pulse used to minimize self-heating effect.



TYPICAL CHARACTERISTICS

Figure 1. Power Derating Curve

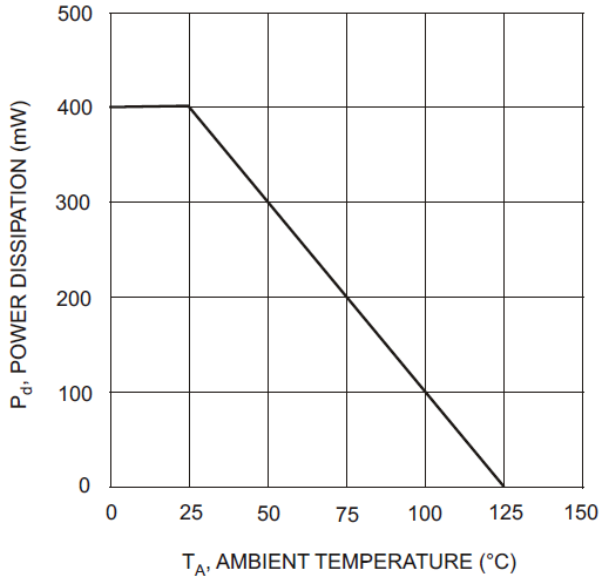


Figure 2. Typical Forward Characteristics

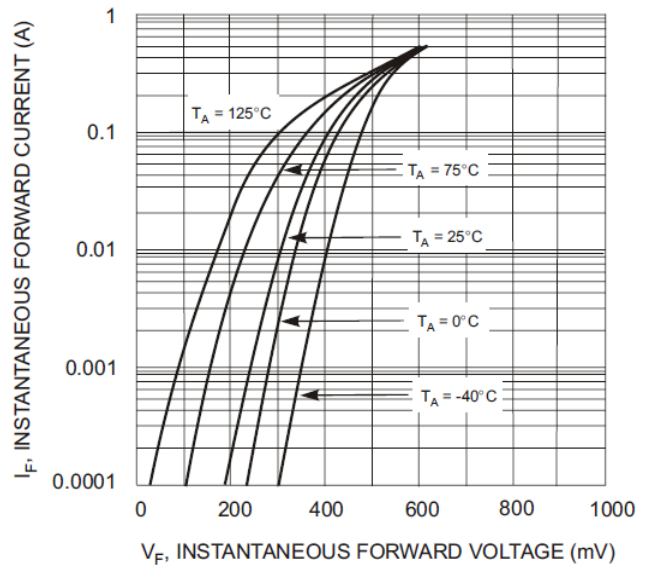


Figure 3. Typical Reverse Characteristics

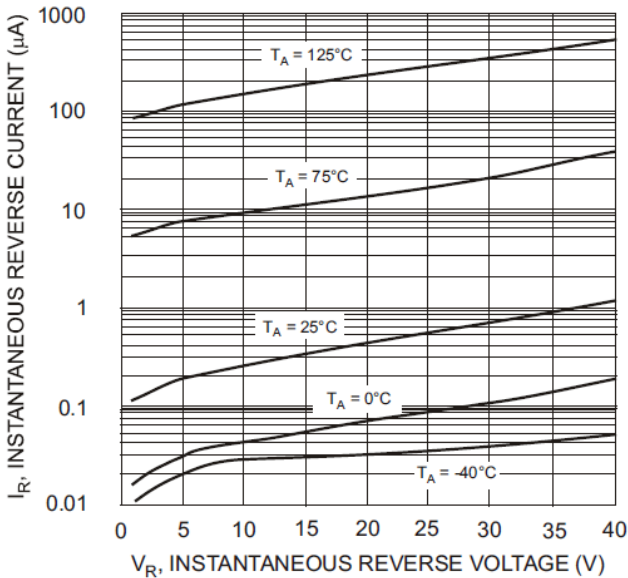
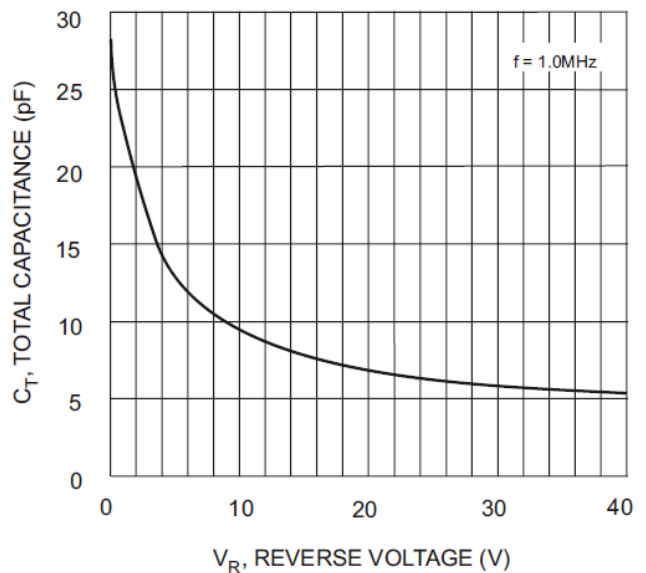


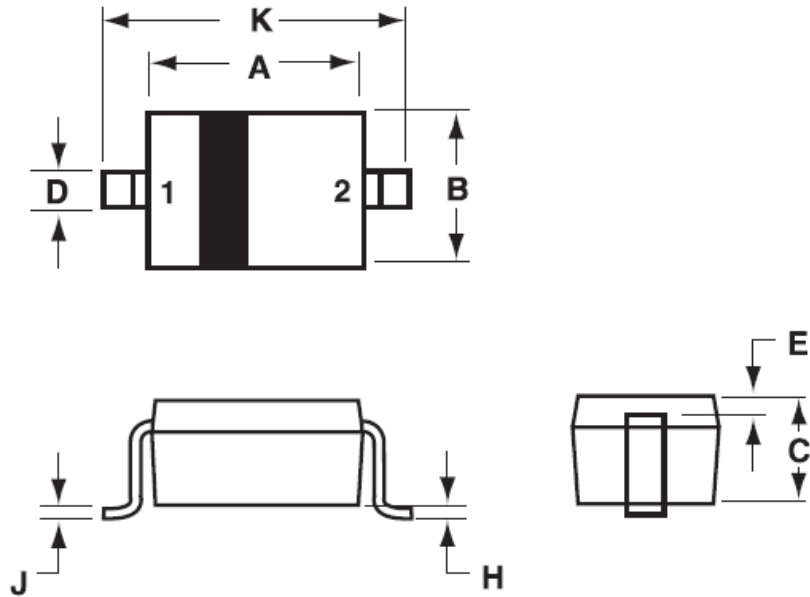
Figure 4. Typ. Total Capacitance vs. Reverse Voltage





PACKAGE INFORMATION

Dimension in SOD-123 Package (Unit: mm)



DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	2.55	2.85	0.0995	0.1112
B	1.40	1.80	0.0546	0.0702
C	0.95	1.35	0.0371	0.0527
D	0.50	0.70	0.0195	0.0273
E	0.30REF		0.0117REF	
H	-	0.10	-	0.0039
J	-	0.15	-	0.0056
K	3.55	3.85	0.1385	0.1502



IMPORTANT NOTICE

AiT Semiconductor Inc. (AiT) reserves the right to make changes to any its product, specifications, to discontinue any integrated circuit product or service without notice, and advises its customers to obtain the latest version of relevant information to verify, before placing orders, that the information being relied on is current.

AiT Semiconductor Inc.'s integrated circuit products are not designed, intended, authorized, or warranted to be suitable for use in life support applications, devices or systems or other critical applications. Use of AiT products in such applications is understood to be fully at the risk of the customer. As used herein may involve potential risks of death, personal injury, or severe property, or environmental damage. In order to minimize risks associated with the customer's applications, the customer should provide adequate design and operating safeguards.

AiT Semiconductor Inc. assumes to no liability to customer product design or application support. AiT warrants the performance of its products of the specifications applicable at the time of sale.