MicroDIP, Single-Phase Bridge Rectifiers

1 A

MDB10SS

Features

- Low Package Profile: 1.45 mm (max)
- Requires Only 35 mm^2 of Board Space
- High Surge Current Capability: 30 A (max)
- Glass Passivated Junction Rectifiers
- Smaller Plastic Body vs MDB10S
- Green Compound
- UL Certification: E352360
- This Device is Pb−Free, Halogen Free/BFR Free and is RoHS Compliant

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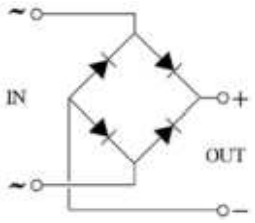
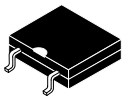




TSSOP4 4.975x4.375
CASE 948BT

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Units
V_{RRM}	Maximum Repetitive Peak Reverse Voltage	1000	V
V_{RMS}	Maximum RMS Voltage	700	V
V_{DC}	Maximum DC Blocking Voltage	1000	V
$I_{F(AV)}$	Average Rectified Forward Current (Note 1)	1.0	A
I_{FSM}	Peak Forward Surge Current (Note 2)	30	A
I^2t	I^2t Rating for fusing (t<8.3 ms)	3.735	A^2S
T_J	Operating Junction Temperature Range	−55 to +150	°C
T_{STG}	Storage Temperature Range	−55 to +150	°C

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

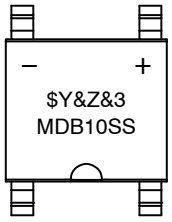
1. 60 Hz sine wave, R−load, T_A = 25°C on FR−4 PCB.
2. 60 Hz sine wave, Non−repetitive 1 cycle peak value, T_J = 25°C.

THERMAL CHARACTERISTICS (Note 3)

Symbol	Parameter		Typ.	Units
$R_{\theta JA}$	Thermal Resistance, Junction−Ambient	Measurement with Dual Dice	250	°C/W
		Measurement with Single Die	150	°C/W
ψ_{JL}	Thermal Characterization, Junction to Lead	Measured at Anode pin	57	°C/W
		Measured at Cathode pin	15	°C/W

3. Device mounted on FR−4 PCB with board size = 76.2 mm x 114.3 mm (JESD51−3 standards).

MARKING DIAGRAM



MDB10SS = Specific Device Code
$Y = ON Semiconductor Logo
&Z = Assembly Plant Code
&3 = Data Code (Year & Week)

ORDERING INFORMATION

Device	Package	Shipping
MDB10SS	TSSOP−4 (Pb−Free)	5000 / Tape & Reel

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification Brochure, BRD8011/D.

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ELECTRICAL CHARACTERISTICS Values are at T_A = 25°C unless otherwise specified.

Symbol	Parameter	Test condition	Value	Units
V_F	Maximum Forward Voltage	I_F = 1 A,Pulse measurement, Per diode	1.0	V
I_R	Maximum Reverse Current	At VRRM,Pulse measurement, Per diode	10	μA
C_J	Typical Junction Capacitance	V_R = 4 V, f = 1 MHz	10	pF

TYPICAL PERFORMANCE CHARACTERISTICS

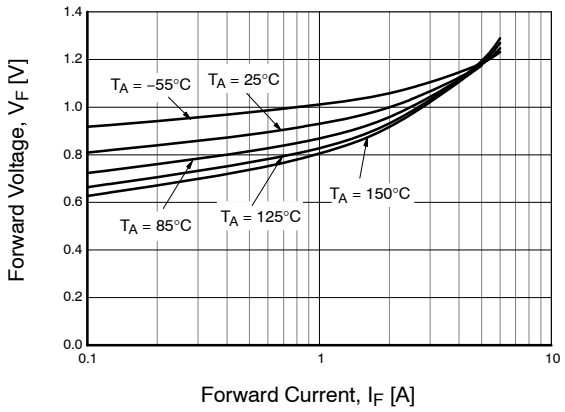

Figure 1. Forward Voltage vs Forward Current (Per diode)

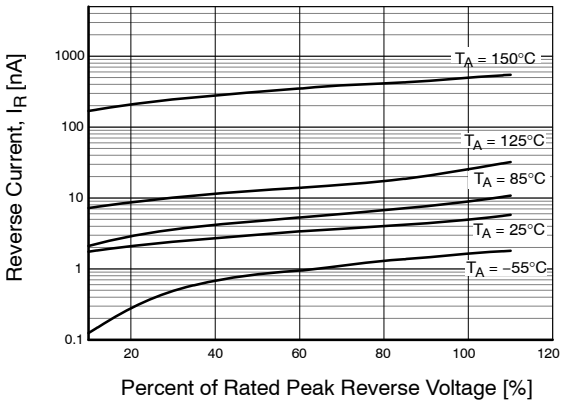

Figure 2. Typical Reverse Current Characteristics (Per Diode)

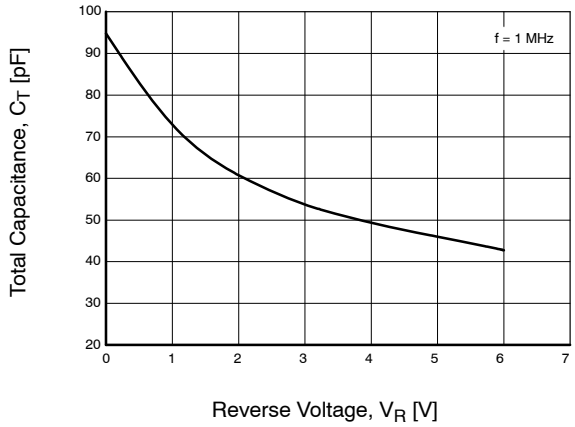

Figure 3. Total Capacitance

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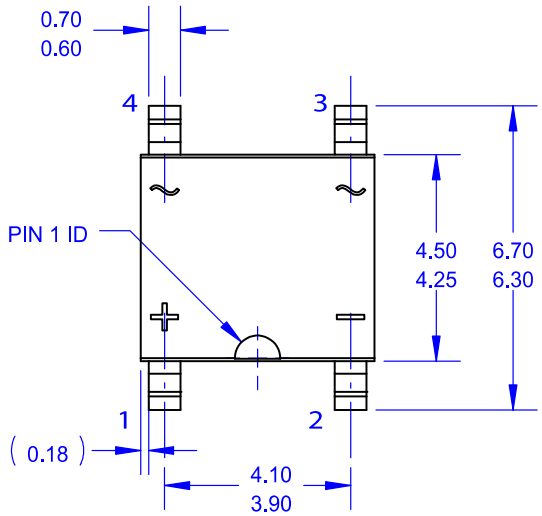
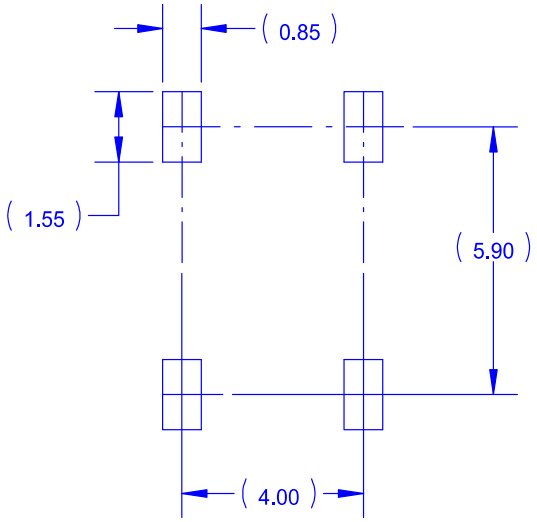
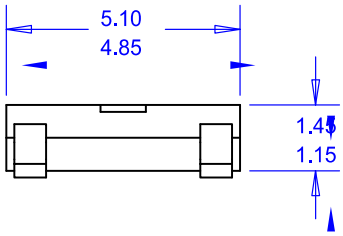


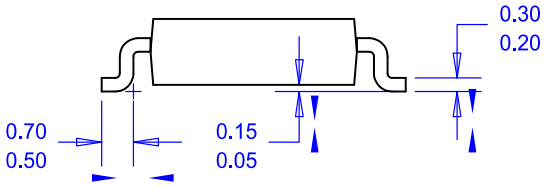
TOP VIEW



LAND PATTERN RECOMMENDATION



SIDE VIEW



END VIEW

NOTES:

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