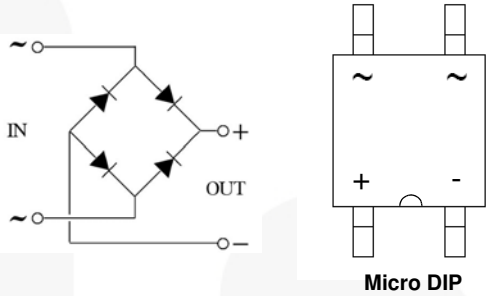
FAIRCHILD SEMICONDUCTOR®

May 2013

MDB10SS
1 A, MicroDIP, Single-Phase Bridge Rectifiers

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



Micro DIP

Absolute Maximum Ratings

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only. Values are at T_A = 25°C unless otherwise noted.

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(1)	1.0	A
I_{FSM}	Peak Forward Surge Current(2)	30	A
I^2t	I^2t Rating for fusing (t<8.3ms)	3.735	A^2S
T_J	Operating Junction Temperature Range	-55 to +150	°C
T_{STG}	Storage Temperature Range	-55 to +150	°C

Notes:

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(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

Note:

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

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 V_{RRM}, Pulse measurement, Per diode	10	μA
C_J	Typical Junction Capacitance	V_R = 4 V, f = 1 MHz	10	pF

Typical Performance Characteristics

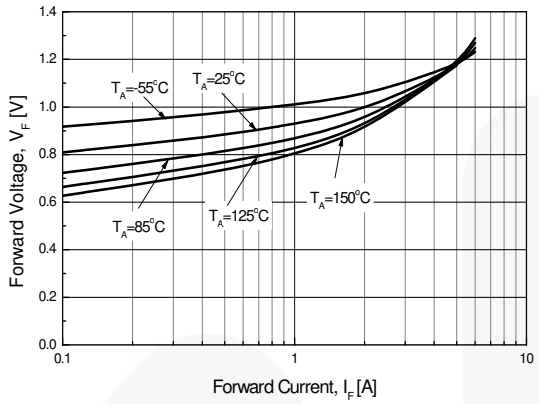


Figure 1. Forward Voltage vs Forward Current (Per diode)

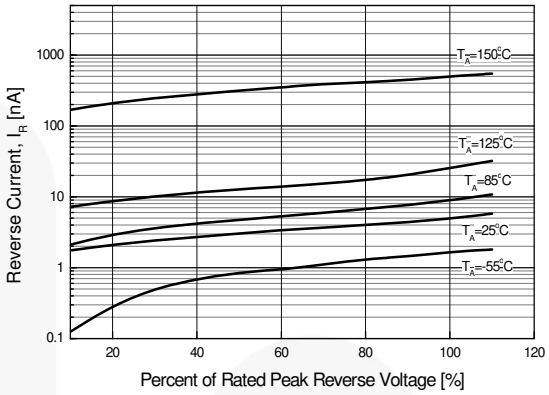


Figure 2. Typical Reverse Current Characteristics (Per Diode)

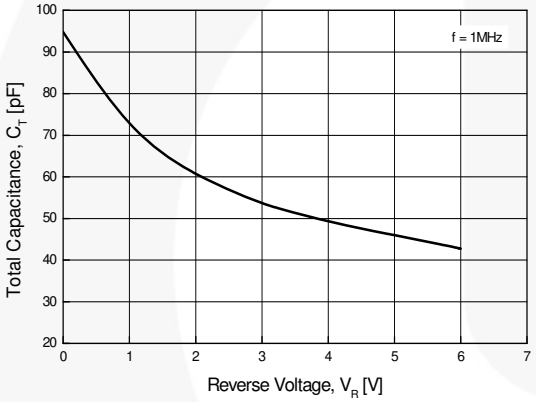
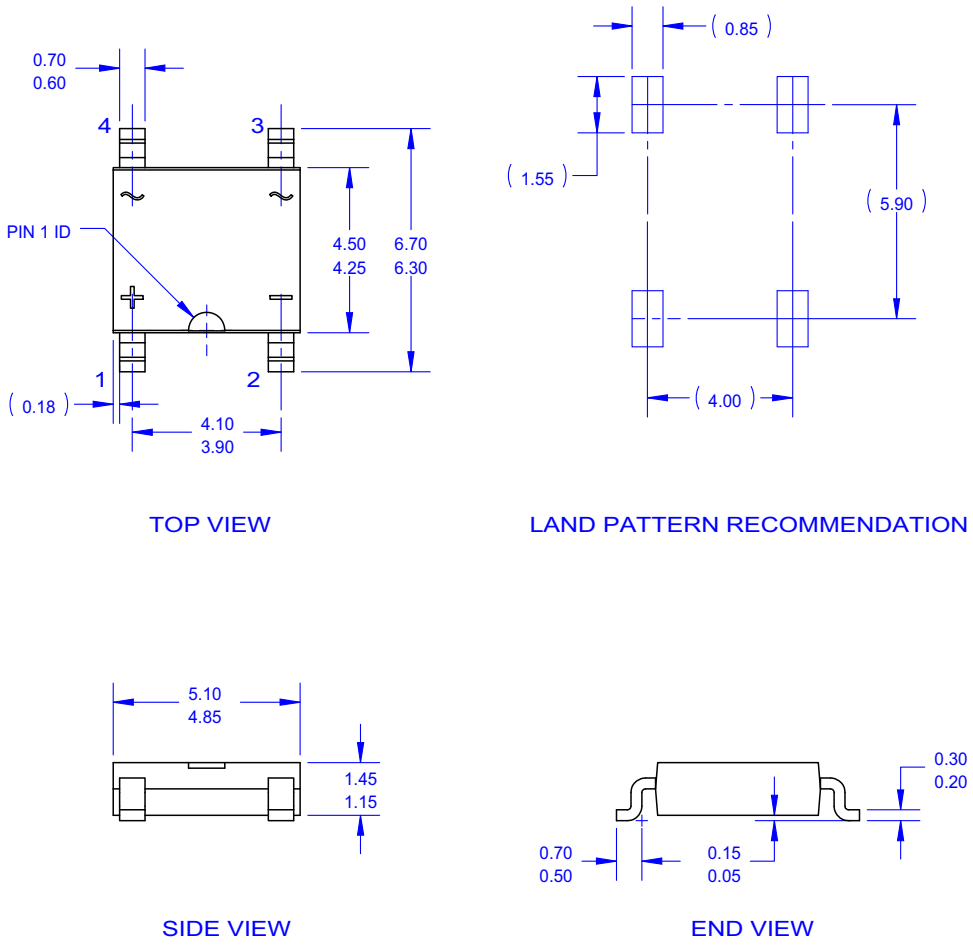


Figure 3. Total Capacitance

Physical Dimensions

Micro-DIP



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C. DIMENSIONS ARE EXCLUSIVE OF BURRS, MOLD FLASH AND TIE BAR PROTRUSIONS.
G. DRAWING FILE NAME: MKT-TDI04BREV1.

Figure 4. 4-LEAD, MICRO SURFACE MOUNT (Active)

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