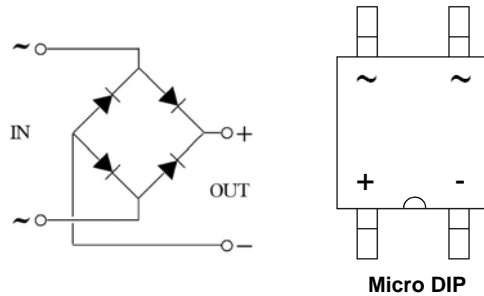


# MDB6S / MDB8S / MDB10S

## 1A, MicroDIP, Single-Phase Bridge Rectifiers

### Features

- Low Package Profile: 1.45 mm (max)
- Requires Only 35 mm<sup>2</sup> of Board Space
- High Surge Current Capability: 30A (max)
- Glass Passivated Junction Rectifiers
- UL Certification : E352360



### Absolute Maximum Ratings $T_A = 25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Value			Units
		MDB6S	MDB8S	MDB10S	
$V_{RRM}$	Maximum Repetitive Peak Reverse Voltage	600	800	1000	V
$V_{RMS}$	Maximum RMS Voltage	420	560	700	V
$V_{DC}$	Maximum DC Blocking Voltage	600	800	1000	V
$I_{F(AV)}$	Average Rectified Forward Current *	1.0			A
$I_{FSM}$	Peak Forward Surge Current **	30			A
$I^2t$	$I^2t$ Rating for fusing ( $t < 8.3\text{ms}$ )	3.735			A <sup>2</sup> S
$T_J$	Operating Junction Temperature Range	-55 to +150			°C
$T_{STG}$	Storage Temperature Range	-55 to +150			°C

\* 60Hz sine wave, R-load,  $T_A = 25^\circ\text{C}$  on FR-4 PCB.

\*\* 60Hz sine wave, Non-repetitive 1 cycle peak value,  $T_J = 25^\circ\text{C}$ .

### Thermal Characteristics\*

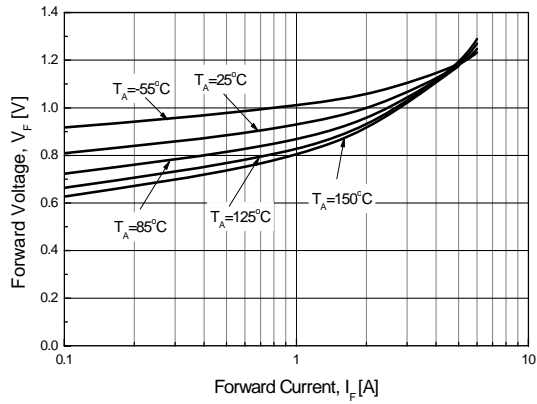
Symbol	Parameter	Typ.	Units
$R_{\theta JA}$	Thermal Resistance, Junction-Ambient		
	- Measurement with Dual Dice - Measurement with Single Die	250 150	°C/W °C/W
$\psi_{JL}$	Thermal Characterization, Junction to Lead		
	- Measured at Anode pin - Measured at Cathode pin	57 15	°C/W °C/W

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

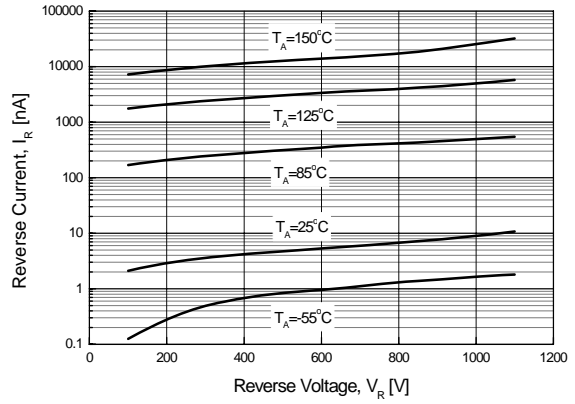
### Electrical Characteristics $T_A = 25^\circ\text{C}$ unless otherwise specified

Symbol	Parameter	Test condition	Value	Units
$V_F$	Maximum Forward Voltage	$I_F = 1\text{A}$ , Pulse measurement, Per diode	1.1	V
$I_R$	Maximum Reverse Current	@ $V_{RRM}$ , Pulse measurement, Per diode	10	μA
$C_J$	Typical Junction Capacitance	$V_R = 4\text{V}$ , $f = 1\text{MHz}$	10	pF

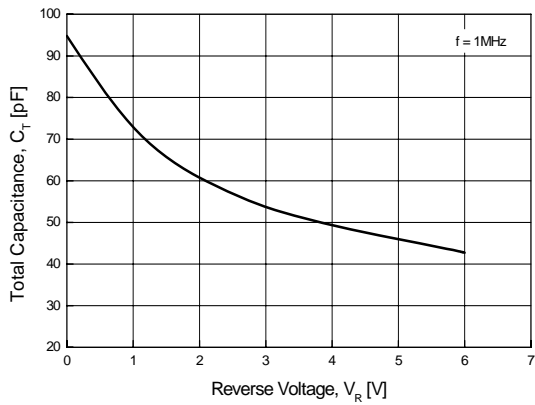
## Typical Performance Characteristics



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



**Figure 2. Reverse Current vs Reverse Voltage (Per diode)**






**Figure 3. Total Capacitance**



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| BitSiC™  | GreenBridge™                                   | QFET®  | TinyBuck™   |
| Build it Now™  | Green FPS™                                     | QS™  | TinyCalc™   |
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| CTL™   | IntelliMAX™                                    | Saving our world, 1mW/W/kW at a time™  | TinyPWM™  |
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