

# MDB8S Series

## ABSOLUTE MAXIMUM RATINGS

(Values are at  $T_A = 25^\circ\text{C}$  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 (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			$\text{A}^2\text{S}$
$T_J$	Operating Junction Temperature Range	-55 to +150			$^\circ\text{C}$
$T_{STG}$	Storage Temperature Range	-55 to +150			$^\circ\text{C}$

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.

- 60 Hz sine wave, R-load,  $T_A = 25^\circ\text{C}$  on FR-4 PCB.
- 60 Hz sine wave, Non-repetitive 1 cycle peak value,  $T_J = 25^\circ\text{C}$ .

## THERMAL CHARACTERISTICS (Note 3)

Symbol	Parameter	Value	Typ.	Units
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	Measurement with Dual Dice	250	$^\circ\text{C}/\text{W}$
		Measurement with Single Die	150	$^\circ\text{C}/\text{W}$
$\Psi_{JL}$	Thermal Characterization Junction to Lead	Pin 2	57	$^\circ\text{C}/\text{W}$
		Pin 1, 3, 4	15	$^\circ\text{C}/\text{W}$

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

## ELECTRICAL CHARACTERISTICS (Values are at $T_A = 25^\circ\text{C}$ unless otherwise specified)

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

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

## ORDERING INFORMATION

Part Number	Marking	Package	Shipping <sup>†</sup>
MDB6S	MDB6S	TSSOP4 5.0x4.4 / Micro-DIP	5000 / Tape & Reel
MDB8S	MDB8S		
MDB10S	MDB10S		

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## TYPICAL PERFORMANCE CHARACTERISTICS

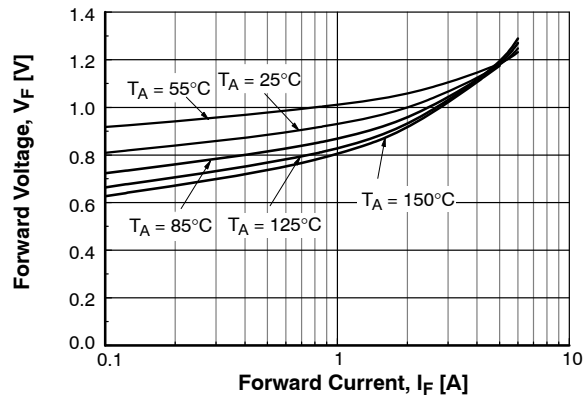


Figure 1. Forward Voltage vs. Forward Current (Per Diode)

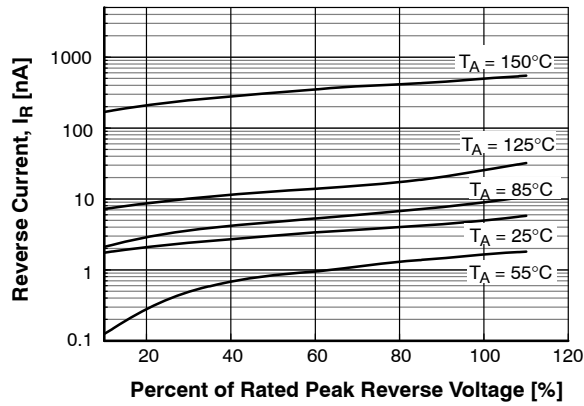


Figure 2. Typical Reverse Current Characteristic (Per Diode)

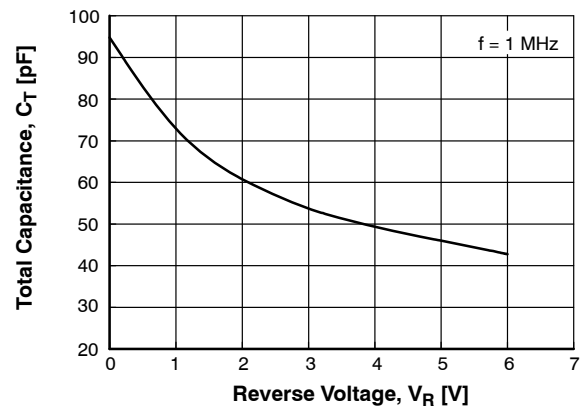


Figure 3. Total Capacitance

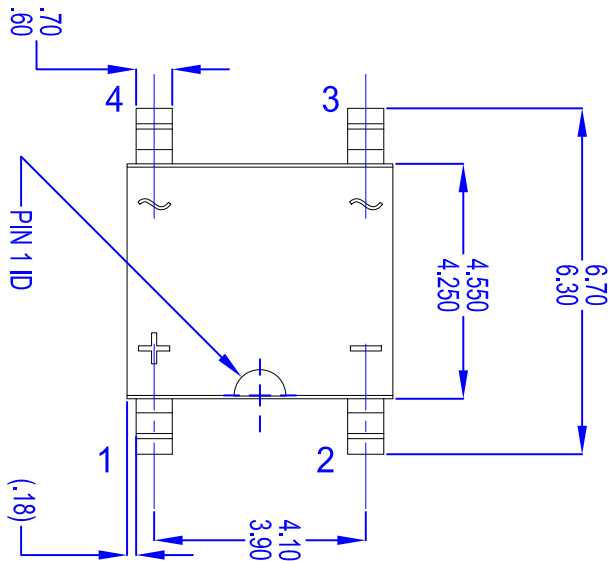
**MECHANICAL CASE OUTLINE**  
**PACKAGE DIMENSIONS**

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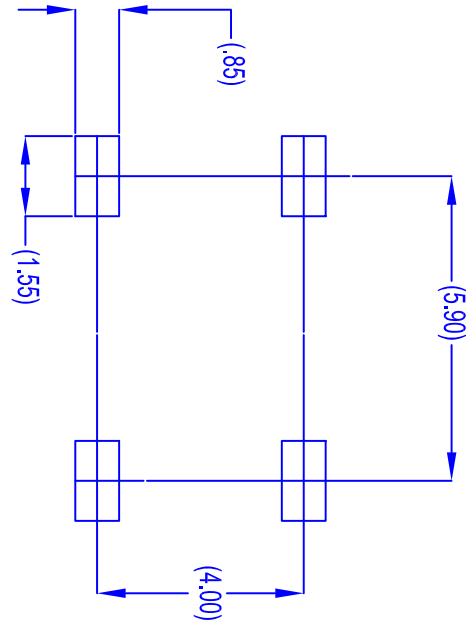


TSSOP4 5.0x4.4 / Micro-DIP  
CASE 948BS  
ISSUE O

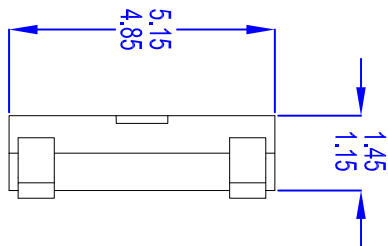
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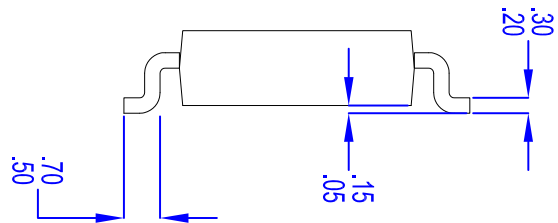
TOP VIEW



LAND PATTERN RECOMMENDATION



SIDE VIEW



END VIEW

NOTES:

- A. THIS PACKAGE DOES NOT CONFORM TO ANY REFERENCE STANDARD.
- B. ALL DIMENSIONS ARE IN MILLIMETERS.
- C. DIMENSIONS ARE EXCLUSIVE OF BURRS, MOLD FLASH AND TIE BAR PROTRUSIONS.

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