

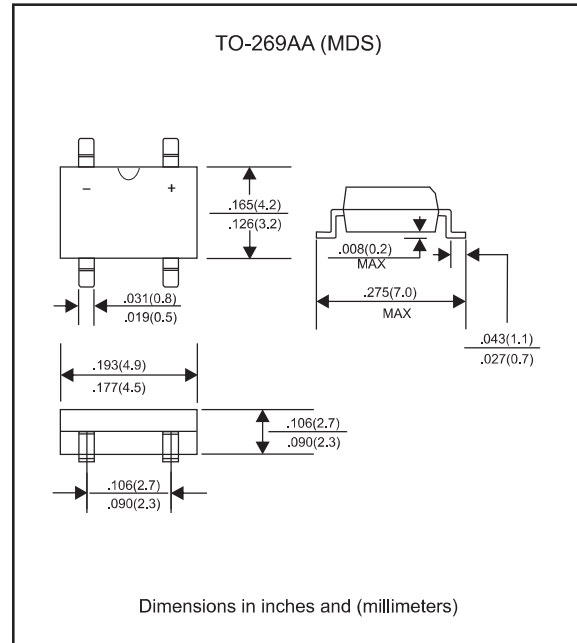
### Features

- Surge overload ratings to 30 amperes peak.
- Save space on printed circuit board.
- Ideal for automated replacement.
- Reliable low cost construction utilizing molded plastic technology results in inexpensive product.
- Glass passivated chip junctions.
- Lead-free parts meet RoHS requirements.
- UL recognized file # E321971
- Suffix "-H" indicates Halogen free part, ex. MB05S-H.

### Mechanical data

- Epoxy:UL94-V0 rated flame retardant
- Case : Molded plastic, TO-269AA (MDS)
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity : marked on body
- Mounting Position : Any

### Package outline



### Maximum ratings and Electrical Characteristics (AT $T_A=25^{\circ}\text{C}$ unless otherwise noted)

PARAMETER	CONDITIONS	Symbol	MIN.	TYP.	MAX.	UNIT
Forward rectified current	On glass-epoxy P.C.B. On aluminum substrate	$I_O$			0.5 0.8	A
Forward surge current	8.3ms single half sine-wave superimposed on rate load (JEDEC method)	$I_{FSM}$			30	A
Reverse current	$V_R = V_{RRM}$ $T_J = 25^{\circ}\text{C}$	$I_R$			5.0	uA
	$V_R = V_{RRM}$ $T_J = 125^{\circ}\text{C}$				200	
Thermal resistance	Junction to ambient	$R_{\theta JA}$		85		$^{\circ}\text{C}/\text{W}$
Diode junction capacitance	f=1MHz and applied 4V DC reverse voltage	$C_J$		13		pF
Storage temperature		$T_{STG}$	-55		+150	$^{\circ}\text{C}$

SYMBOLS	$V_{RRM}^{*1}$ (V)	$V_{RMS}^{*2}$ (V)	$V_R^{*3}$ (V)	$V_F^{*4}$ (V)	Operating temperature $T_J$ ( $^{\circ}\text{C}$ )
MB05S	50	35	50	1.00	-55 to +150
MB1S	100	70	100		
MB2S	200	140	200		
MB4S	400	280	400		
MB6S	600	420	600		
MB8S	800	560	800		
MB10S	1000	700	1000		

- \*1 Repetitive peak reverse voltage
- \*2 RMS voltage
- \*3 Continuous reverse voltage
- \*4 Maximum forward voltage per element at 0.8A peak

## Rating and characteristic curves (MB05S THRU MB10S)

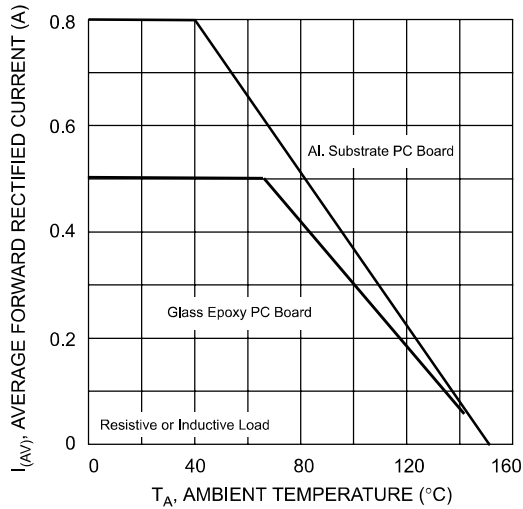


Fig. 1 Output Current Derating Curve

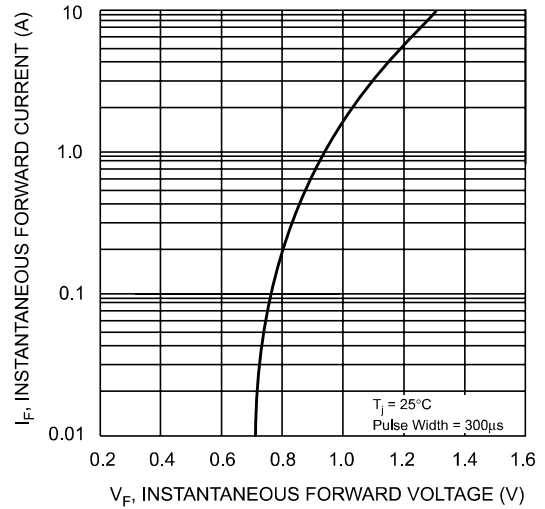


Fig. 2 Typical Forward Characteristics (per leg)

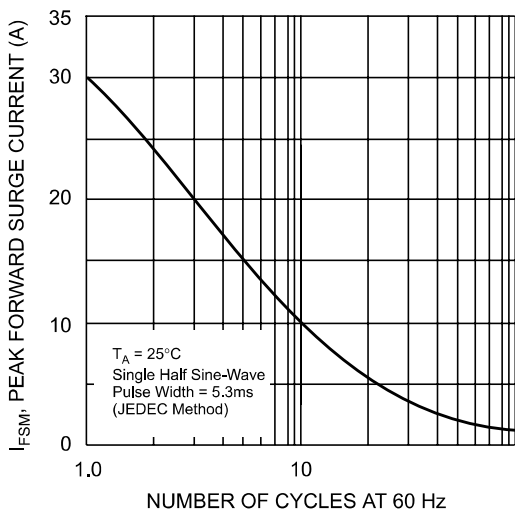


Fig. 3 Maximum Peak Forward Surge Current (per leg)

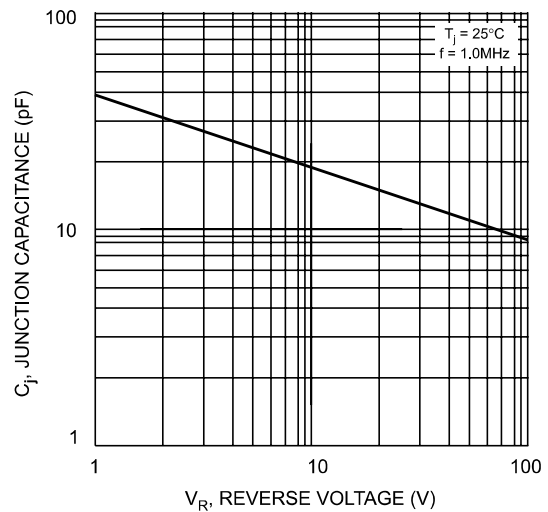


Fig. 4 Typical Junction Capacitance

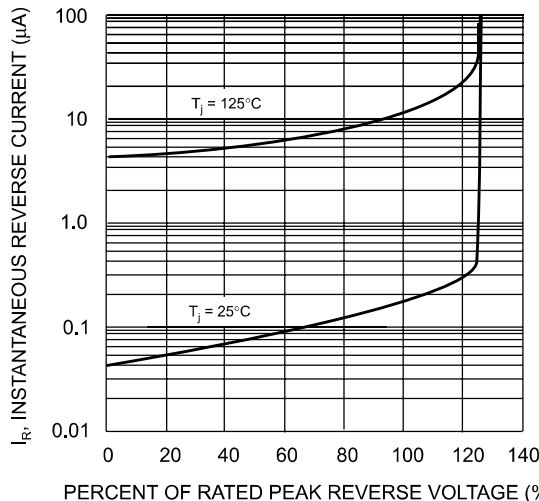


Fig. 5 Typical Reverse Characteristics (per element)

### Pinning information

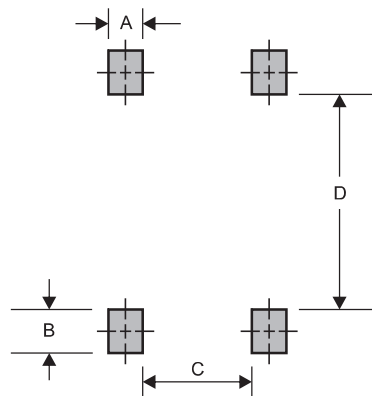
Simplified outline	Symbol

### Marking

Type number	Marking code	Example	
MB05S	MB05S	1. For Halogen Device	2. For Halogen-free Device
MB1S	MB1S		
MB2S	MB2S		
MB4S	MB4S		
MB6S	MB6S		
MB8S	MB8S		
MB8S	MB8S		
MB10S	MB10S		

1st line: ≡ indicate Halogen-Free.  
2nd line: Marking code

### Suggested solder pad layout



Dimensions in inches and (millimeters)

PACKAGE	A	B	C	D
TO-269AA (MDS)	0.023 (0.58)	0.030 (0.76)	0.070 (1.78)	0.226 (5.75)

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