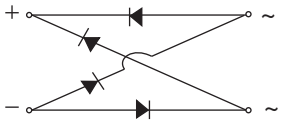
Single-Phase Bridge Rectifier in MBF

Features

- MBF(SOP-4) package
- Saves space on printed circuit boards
- Ideal for automated placement
- Middle surge current capability
- Low leakage current



Mechanical Data

- **Case:** TO-269AA (plastic package). RoHS compliant
- **Molding Compound Flammability Rating:** UL 94 V-0
- **Terminals:** High temperature soldering guaranteed: 260 °C/10 sec. at terminals

Applications

- Battery charger
- Mobile phone adapter
- Lighting ballaster
- Power supply
- Home, office, telecom applications
- Other AC/DC rectification application

Absolute Maximum Ratings

Ratings at 25 °C, ambient temperature unless otherwise specified

Parameter	Symbol	MB2F	MB4F	MB6F	MB8F	MB10F	Unit
Maximum repetitive peak reverse voltage	V_{RRM}	200	400	600	800	1000	V
Maximum RMS voltage	V_{RMS}	140	280	420	560	700	V
Maximum DC blocking voltage	V_{DC}	200	400	600	800	1000	V
Maximum average forward output rectified current (fig. 1) on glass-epoxy PCB (1) / on aluminum substrate (2)	$I_{F(AV)}$	0.5 0.8					A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	30					A
Rating for fusing (t < 8.3 ms)	I^2t	5.0					A^2s
Operating junction and storage temperature range	T_J, T_{STG}	- 55 to + 150					°C

Thermal Characteristics

Ratings at 25 °C, ambient temperature unless otherwise specified

Parameter	Symbol	MB2F	MB4F	MB6F	MB8F	MB10F	Unit
Typical thermal resistance (junction to ambient)	$R_{\theta JA}$ (1)	85					°C/W
Typical thermal resistance (junction to ambient)	$R_{\theta JA}$ (2)	70					°C/W
Typical thermal resistance (junction to lead)	$R_{\theta JL}$ (1)	20					°C/W

Electrical Characteristics

(T_A = 25 °C unless otherwise specified)

Parameter	Condition	Symbol	MB2F	MB4F	MB6F	MB8F	MB10F	Unit
Maximum instantaneous forward voltage per diode	I_F = 0.6 A	V_F	1.1					V
Maximum DC reverse current at rated DC blocking voltage per diode	T_A = 25 °C	I_R	10					µA
	T_A = 125 °C	I_R	100					µA
Typical junction capacitance per diode	4.0 V, 1 MHz	C_J	10					pF

Notes

(1) On glass epoxy PCB mounted on 0.05" x 0.05" (1.3 mm x 1.3 mm) pads

(2) On aluminum substrate PCB with an area of 0.8" x 0.8" (20 mm x 20 mm) mounted on 0.05" x 0.05" (1.3 mm x 1.3 mm) solder pad

Typical Characteristics (T_{amb} = 25 °C unless otherwise specified)

Fig. 1 - Derating Curve for Output Rectified Current

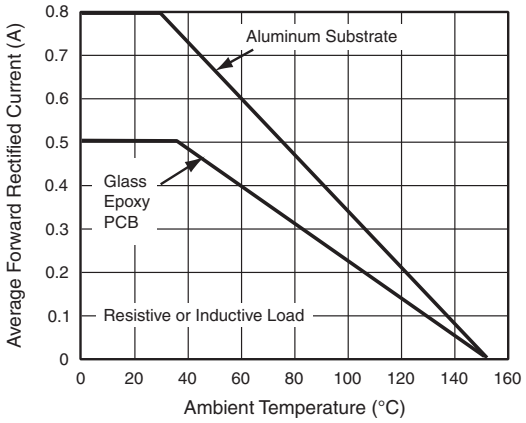


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

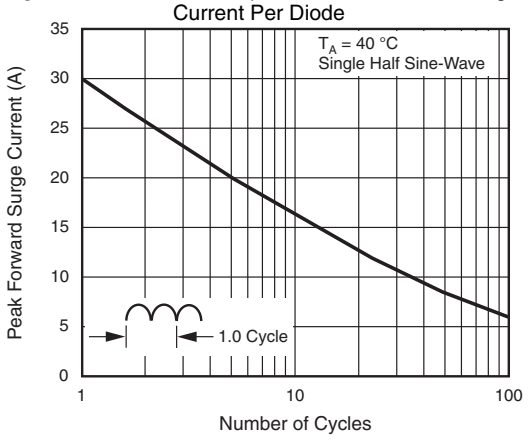


Fig. 3 - Typical Forward Voltage Characteristics Per Diode

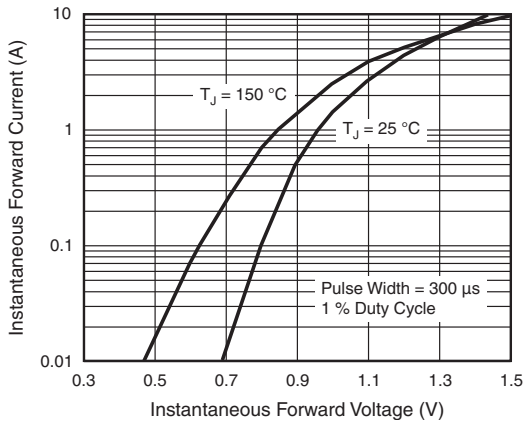
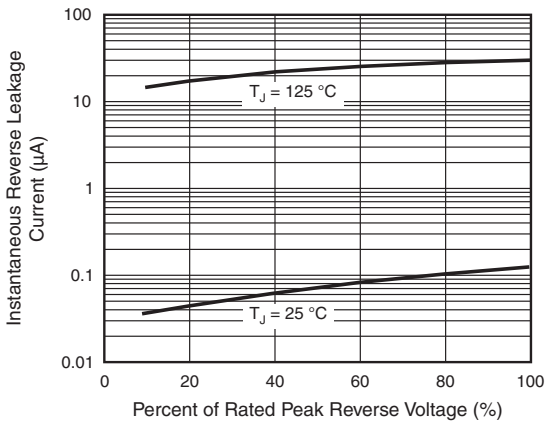
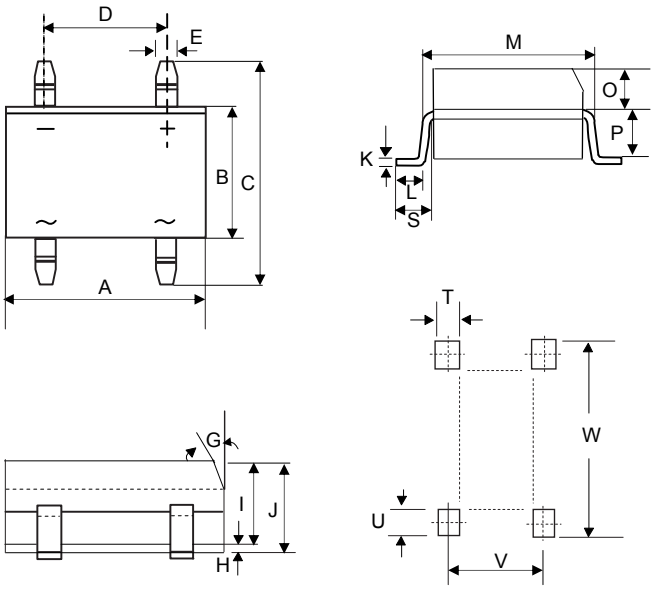


Fig. 4 - Typical Reverse Leakage Characteristics Per Diode

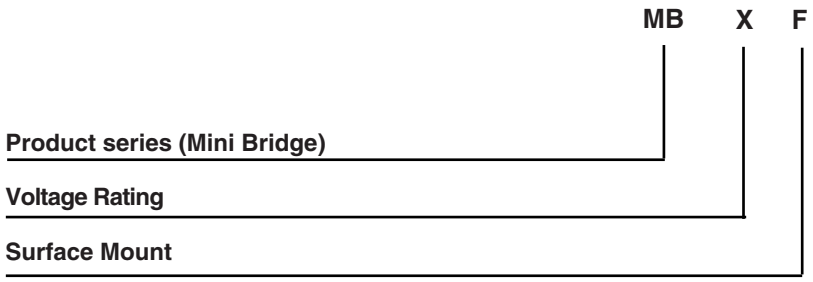


Package Dimensions

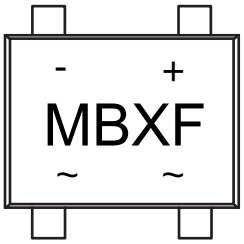


Dim	millmeters	
	min	max
A	4.50	4.95
B	3.60	4.10
C	6.50	7.05
D	2.30	2.70
E	0.43	0.74
G	0°	8°
H	0.16	0.19
I	1.20	1.60
J	1.50	2.10
K	0.15	0.35
L	0.48	0.96
M	4.75	4.95
O	0.59	0.70
P	0.60	0.80
S	1.37	1.47
T	0.56	-
U	0.70	-
V	2.41	2.60
W	-	7.01

Part number system



Marking



MBXF : Part Number

Ordering information

Order code	Package	Packaging option	Base quantity	Packaging specification
MBXF	MBF(SOP-4)	Tape and reel	5000pcs / reel	EIA STD RS-481

Revision history

Date	Revision	Changes
23-May-2020	1.0	Initial release

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