BORN SEMICONDUCTOR

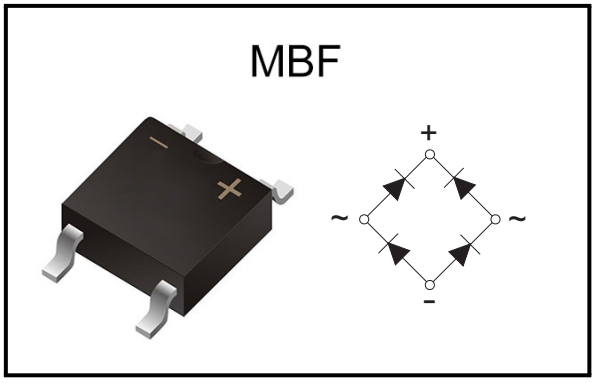
MB05F-10F

Rectifier Bridge

Features

- Glass Passivated Chip Junction
- Reverse Voltage 50 to 1000 V
- Forward Current 0.5A
- High surge current capability
- Designed for Surface Mount Application

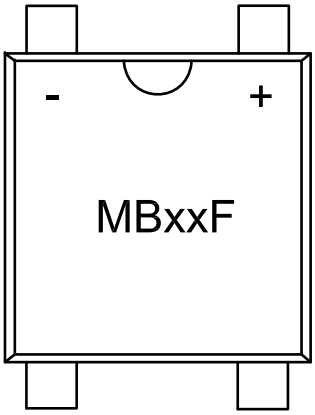
Package



Description

- Case: molded plastic
- Polarity: As marked on bady
- Package: MBF Plastic Package

Making Code



Ordering information

Part Number	MB05F	MB1F	MB2F	MB4F	MB6F	MB8F	MB10F
Marking	MB05F	MB1F	MB2F	MB4F	MB6F	MB8F	MB10F
Base qty	5k	5k	5k	5k	5k	5k	5k

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MB05F-10F

Rectifier Bridge

Maximum Ratings (@T_A=25°C unless otherwise noted)

Symbol	Parameters	MB05F	MB1F	MB2F	MB4F	MB6F	MB8F	MB10F	Unit
V_{RRM}	Maximum Repetitive Peak Reverse Voltage	50	100	200	400	600	800	1000	V
V_{RMS}	Maximum RMS Voltage	35	70	140	280	420	560	700	V
V_{DC}	Maximum DC Blocking Voltage	50	100	200	400	600	800	1000	V
$I_{(O)}$	Average Rectified Output Current at T_A = 40°C(Note1)	0.5							A
	Average Rectified Output Current at T_A = 40°C(Note2)	0.8							
I_{FSM}	Non-repetitive Peak Forward Surge Current 8.3ms Single half-sine-wave (JEDEC Method)	30							A
I^2t	I^2t Rating for Fusing(t < 8.3ms)	5.0							A^2s
$R_{\theta JA}$	Typical Thermal Resistance	60							°C/W
T_J	Operating Junction Temperature Range	-55 to +150							°C
T_{STG}	Storage Temperature Range	-55 to +150							°C

Note1：Mounted on glass epoxy PC board with 1.3mm² solder pad;

Note2：Mounted on aluminum substrate PC board with 1.3mm² solder pad.

Electrical Characteristics (@T_A=25°C unless otherwise noted)

Symbol	Parameters	MB05F	MB1F	MB2F	MB4F	MB6F	MB8F	MB10F	Unit
V_F	Max. Forward Voltage at I_F=0.5A	1.0							V
I_R	Max. Reverse Current T_A = 25°C	5							uA
	Max. Reverse Current T_A = 125°C	500							
C_J	Type Junction Capacitance (Note 1)	13							pF

Note 1: Measured at 1.0 MHz and applied reverse voltage of 4.0V DC.

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MB05F-10F

Rectifier Bridge

Typical Performance Characteristics(T_J = 25 °C, unless otherwise noted)

Figure 1: Output Current Derating Curve

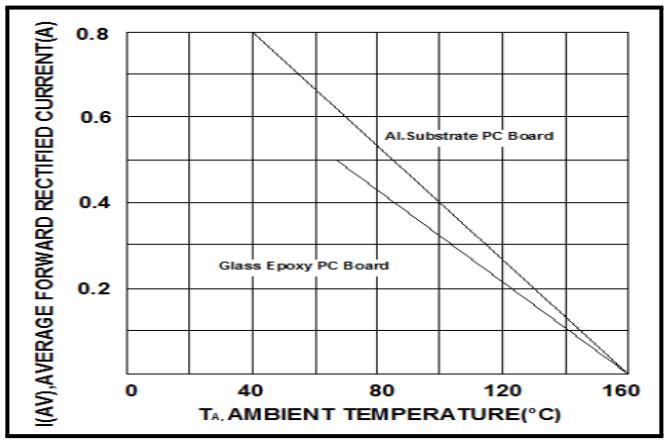


Figure 2: Typical Forward Characteristics(per leg)

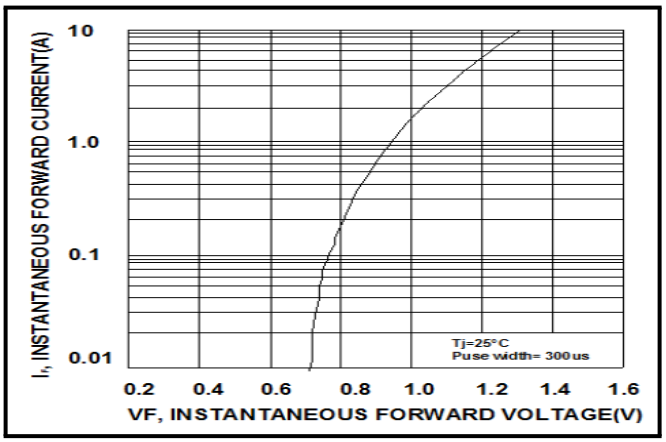


Figure 3: Maximum Peak Forward Surge Current(per leg)

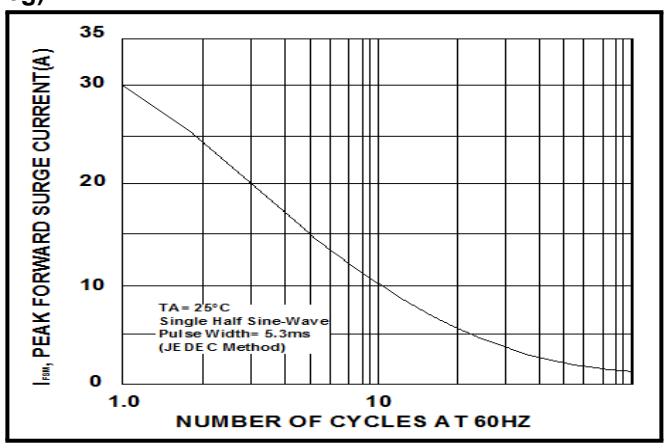


Figure 4: Typical Junction Capacitance

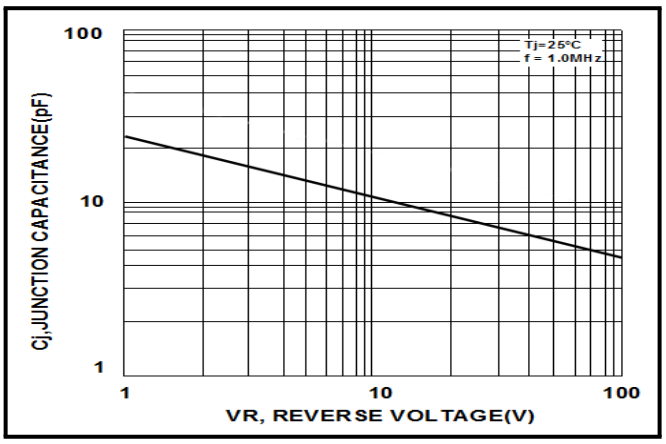
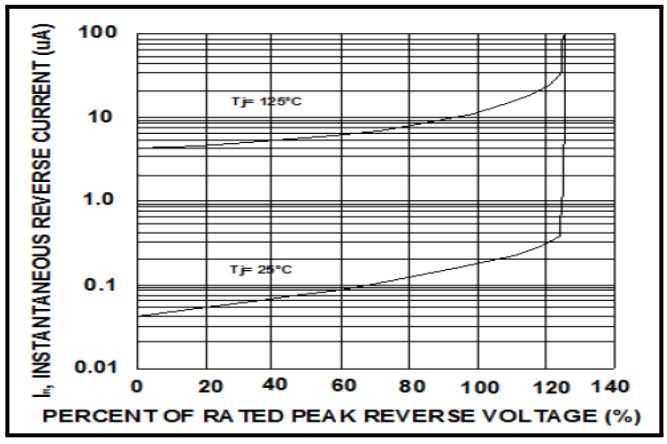


Figure 5: Typical Reverse Characterisitics(per element)

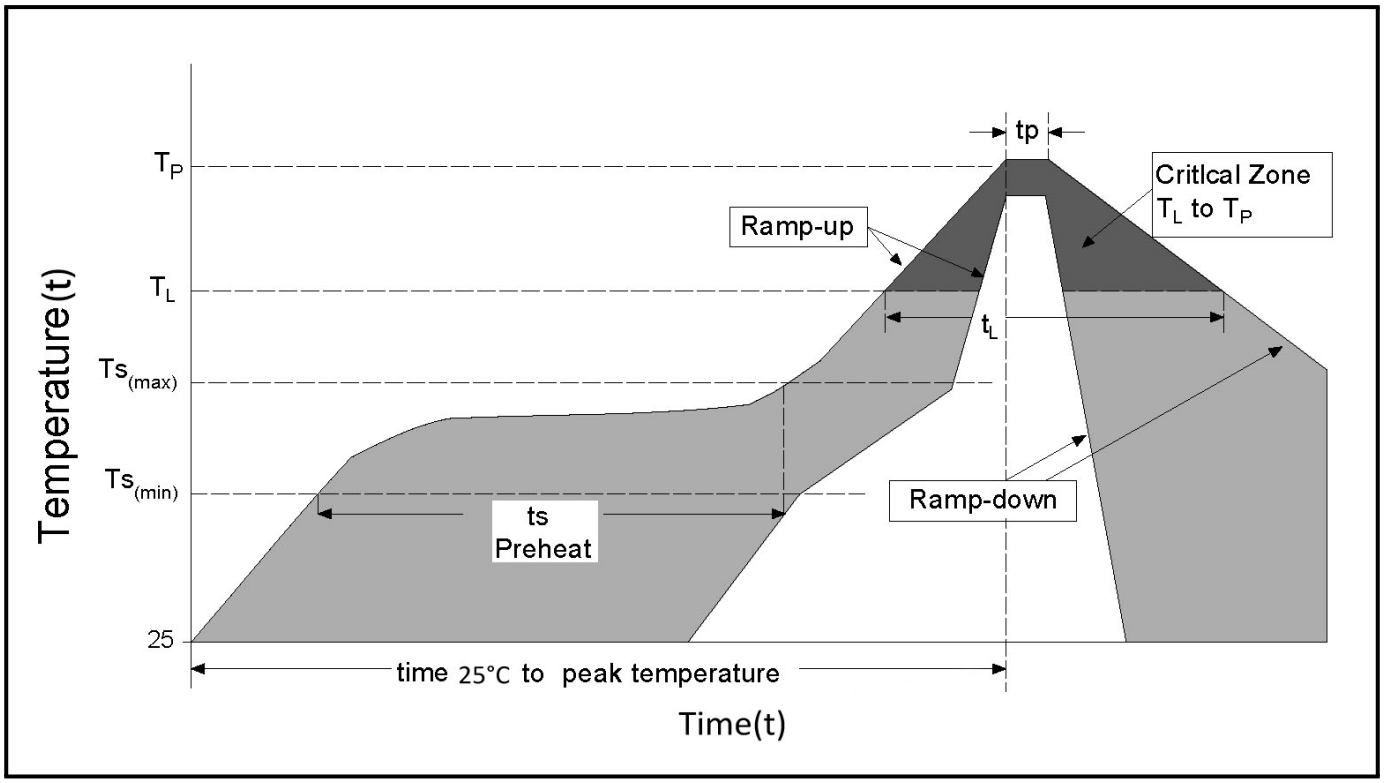


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MB05F-10F

Rectifier Bridge

Soldering Parameters



Reflow Condition		Lead-free assembly
Pre Heat	- Temperature Min (T_S(min))	150°C
	- Temperature Max (T_S(max))	200°C
	- Time (min to max) (t_S)	60 - 180 secs
Average ramp up rate (Liquidus Temp (T_L) to peak)		3°C/second max
T_S(max) to T_L - Ramp-up Rate		3°C/second max
Reflow	- Temperature (T_L) (Liquidus)	217°C
	- Time (t_L)	60 -150 secs
Peak Temperature (T_P)		$260^{+0/-5°C}$
Time within 5°C of actual peak Temperature (t_p)		20 -40 secs
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (t)		8 minutes Max.
Do not exceed		260°C

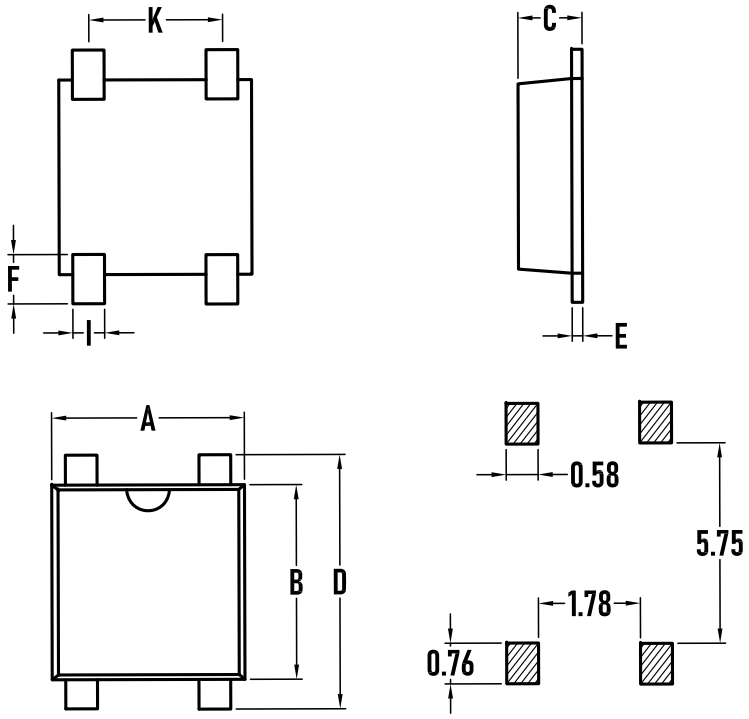
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MB05F-10F

Rectifier Bridge

Package Information–MBF



Dim	MILLIMETER	
	MIN	MAX
A	4.6	5
B	3.6	4.0
C	1.2	1.6
D	6.5	7.0
E	0.15	0.35
F	0.7	1.1
I	0.5	0.8
K	2.3	2.7

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