

# MP10005 THRU MP1010

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# MP10005 THRU MP1010

## 10.0A Plastic Passivated Single-Phase Bridge Rectifiers-50-1000V

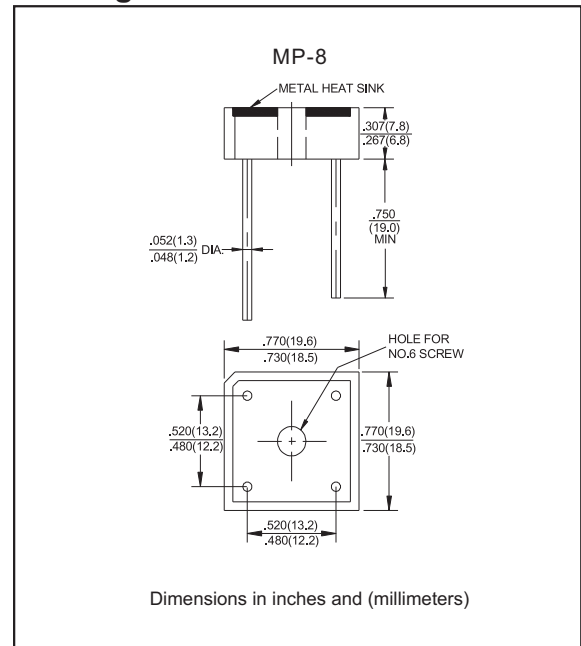
### Features

- Recommended for non-automatic applications.
- Ideal for & save space on printed circuit board.
- Applicable for automatic insertion.
- Reliable low cost construction utilizing molded plastic technology results in inexpensive product.
- Lead-free parts meet RoHS requirements.
- UL recognized file # E321971
- Suffix "-H" indicates Halogen-free part, ex.MP10005-H.

### Mechanical data

- Epoxy:UL94-V0 rated flame retardant
- Case : Molded plastic, MP-8
- 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<sub>A</sub>=25°C unless otherwise noted)

PARAMETER	CONDITIONS	Symbol	MIN.	TYP.	MAX.	UNIT
Forward rectified current	See Fig.1	I <sub>O</sub>			10.0	A
Forward surge current	8.3ms single half sine-wave superimposed on rate load (JEDEC methode)	I <sub>FSM</sub>			240	A
Reverse current	V <sub>R</sub> = V <sub>RRM</sub> T <sub>J</sub> = 25°C	I <sub>R</sub>			10	uA
	V <sub>R</sub> = V <sub>RRM</sub> T <sub>J</sub> = 100°C				1000	
Storage temperature		T <sub>STG</sub>	-65		+175	°C

SYMBOLS	V <sub>RRM</sub> <sup>*1</sup> (V)	V <sub>RMS</sub> <sup>*2</sup> (V)	V <sub>R</sub> <sup>*3</sup> (V)	V <sub>F</sub> <sup>*4</sup> (V)	Operating temperature T <sub>J</sub> (°C)
MP10005	50	35	50	1.0	-55 to +125
MP1001	100	70	100		
MP1002	200	140	200		
MP1004	400	280	400		
MP1006	600	420	600		
MP1008	800	560	800		
MP1010	1000	700	1000		

\*1 Repetitive peak reverse voltage

\*2 RMS voltage

\*3 Continuous reverse voltage

\*4 Maximum forward voltage @I<sub>F</sub>=5.0A

## Rating and characteristic curves (MP10005 THRU MP1010)

FIG.1-DERATING CURVE  
OUTPUT RECTIFIED CURRENT

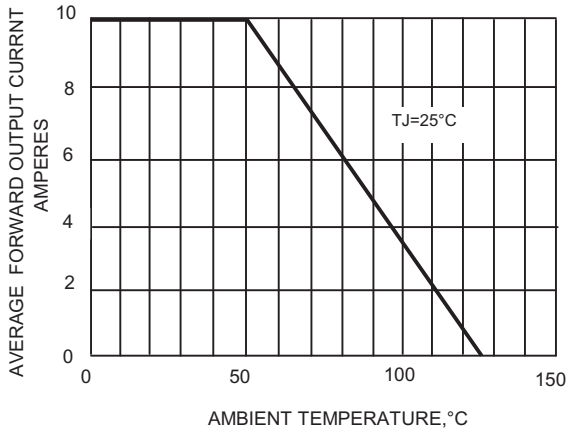


FIG.2-MAXIMUM FORWARD SURGE CURRENT

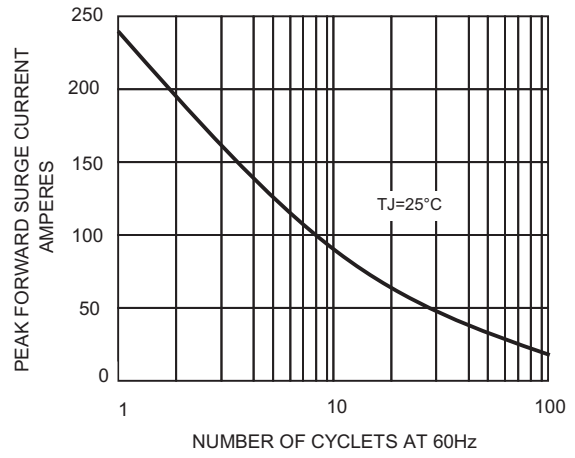


FIG.3-TYPICAL FORWARD CHARACTERISTICS

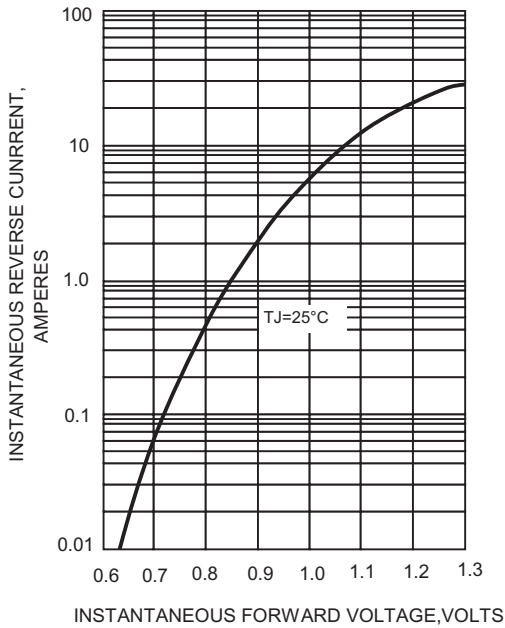
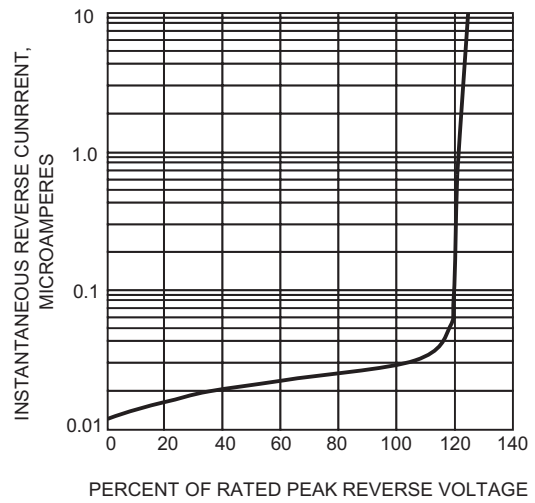
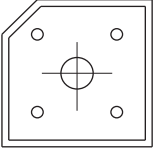
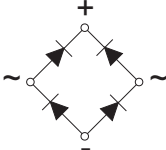


FIG.4-TYPICAL REVERSE CHARACTERISTICS



# MP10005 THRU MP1010

## Pinning information

Simplified outline	Symbol
	

## Marking

Type number	Marking code
MP10005	MP10005
MP1001	MP1001
MP1002	MP1002
MP1004	MP1004
MP1006	MP1006
MP1008	MP1008
MP1010	MP1010

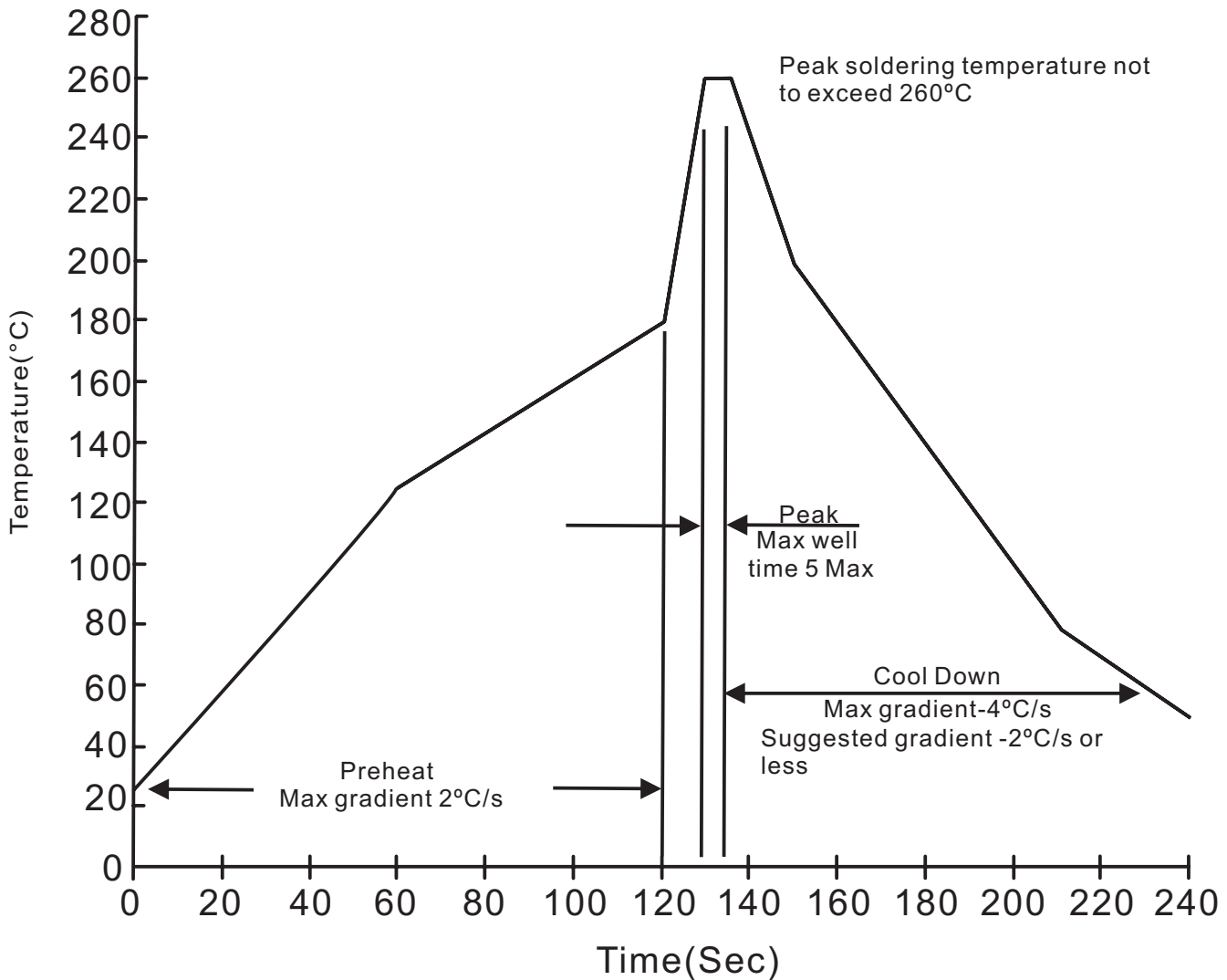
## BULK PACKING

DEVICE CASE TYPE	Q'TY 1 (PCS / BOX)	INNER BOX SIZE (m/m)	CARTON SIZE (m/m)	Q'TY 2 (PCS / CARTON)	APPROX. CROSS WEIGHT(kg)
MP-8	200	230 * 230 * 49	490 * 240 * 49	2,000	15.0

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## Suggested thermal profiles for soldering processes

### 1. Lead free temperature profile wave-soldering



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## High reliability test capabilities

Item Test	Conditions	Reference
1. Solder Resistance	at 260±5°C for 10±2sec. immerse body into solder 1/16"±1/32"	MIL-STD-750D METHOD-2031
2. Solderability	at 245±5°C for 5 sec.	MIL-STD-202F METHOD-208
3. High Temperature Reverse Bias	V <sub>R</sub> =80% rate at T <sub>J</sub> =125°C for 168 hrs.	MIL-STD-750D METHOD-1038
4. Forward Operation Life	Rated average rectifier current at T <sub>A</sub> =25°C for 500hrs.	MIL-STD-750D METHOD-1027
5. Intermittent Operation Life	T <sub>A</sub> = 25°C, I <sub>F</sub> = I <sub>O</sub> On state: power on for 5 min. off state: power off for 5 min. on and off for 500 cycles.	MIL-STD-750D METHOD-1036
6. Pressure Cooker	15P <sub>SIG</sub> at T <sub>A</sub> =121°C for 4 hrs.	JESD22-A102
7. Temperature Cycling	-55°C to +125°C dwelled for 30 min. and transferred for 5min. total 10 cycles.	MIL-STD-750D METHOD-1051
8. Thermal Shock	0°C for 5 min. rise to 100°C for 5 min. total 10 cycles.	MIL-STD-750D METHOD-1056
9. Forward Surge	8.3ms single half sine-wave superimposed on rated load, one surge.	MIL-STD-750D METHOD-4066-2
10. Humidity	at T <sub>A</sub> =85°C, RH=85% for 1000hrs.	MIL-STD-750D METHOD-1021
11. High Temperature Storage Life	at 175°C for 1000 hrs.	MIL-STD-750D METHOD-1031