



Micro Commercial Components

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# MB05S THRU MB10S

## Features

- Glass Passivated Diode Construction
- High Temperature Soldering Guaranteed: 260°C/10 Second
- Saves Space On Printed Circuit Board

## Mechanical Data

- Lead Free Finish/RoHS Compliant (NOTE 1) ("P" Suffix designates RoHS Compliant. See ordering information)
- Epoxy meets UL 94 V-0 flammability rating and MSL Rating 1 per J-STD-020C
- Terminals: Plated leads Solderable per MIL-STD-750, Method 2026
- UL Recognized File # E165989

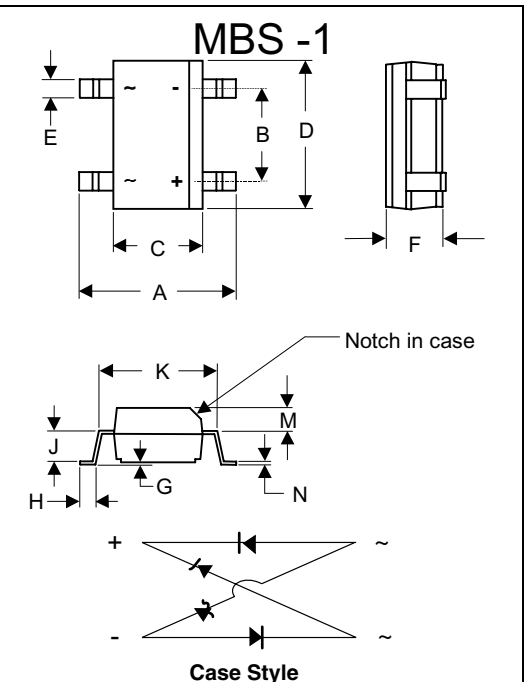
| MCC Part Number | Device Marking | Maximum Recurrent Peak Reverse Voltage | Maximum RMS Voltage | Maximum DC Blocking Voltage |
|-----------------|----------------|----------------------------------------|---------------------|-----------------------------|
| MB05S           | MB05S          | 50V                                    | 35V                 | 50V                         |
| MB1S            | MB1S           | 100V                                   | 70V                 | 100V                        |
| MB2S            | MB2S           | 200V                                   | 140V                | 200V                        |
| MB4S            | MB4S           | 400V                                   | 280V                | 400V                        |
| MB6S            | MB6S           | 600V                                   | 420V                | 600V                        |
| MB8S            | MB8S           | 800V                                   | 480V                | 800V                        |
| MB10S           | MB10S          | 1000V                                  | 700V                | 1000V                       |

## Electrical Characteristics @ 25°C Unless Otherwise Specified

|                                                         |                                        |                                                                         |                                           |
|---------------------------------------------------------|----------------------------------------|-------------------------------------------------------------------------|-------------------------------------------|
| Average Forward Current                                 | $I_{F(AV)}$                            | 0.5 A <sup>(2)</sup><br>0.8 A <sup>(3)</sup>                            | See Fig.1                                 |
| Peak Forward Surge Current                              | $I_{FSM}$                              | 35A                                                                     | 8.3ms, half sine                          |
| Maximum Instantaneous Forward Voltage                   | $V_F$                                  | 1.0V                                                                    | $I_{FM} = 0.4A$ ;<br>$T_A = 25^\circ C$   |
| Maximum DC Reverse Current At Rated DC Blocking Voltage | $I_R$                                  | 5uA<br>100uA                                                            | $T_A = 25^\circ C$<br>$T_A = 125^\circ C$ |
| Typical Thermal Resistance                              | $R_{thJA}$<br>$R_{thJA}$<br>$R_{thJL}$ | 85°C/W <sup>(2)</sup><br>70°C/W <sup>(3)</sup><br>20°C/W <sup>(2)</sup> | per leg                                   |
| Typical Junction Capacitance                            | $C_J$                                  | 13pF                                                                    | Measured at 1.0MHz, $V_R = 4.0V$          |
| Rating For Fusing                                       | $I^2t$                                 | 5.0A <sup>2</sup> s                                                     | $t < 8.30ms$                              |
| Operating Junction and Storage Temperature Range        | $T_J$<br>$T_{STG}$                     | -55to+150<br>°C                                                         |                                           |

- Notes:
1. High Temperature Solder Exemption Applied, see EU Directive Annex Notes 7
  2. On glass epoxy P.C.B. mounted on 0.05 x 0.05" (1.3 x 1.3mm) pads
  3. On aluminum substrate P.C.B. with an area of 0.8" x 0.8" (20 x 20mm) mounted on 0.05 x 0.05" (1.3 x 1.3mm) solder pad

## 0.5 Amp Single Phase Glass Passivated Bridge Rectifier 50 to 1000 Volts



| DIM | INCHES |      | MM   |      | NOTE |
|-----|--------|------|------|------|------|
|     | MIN    | MAX  | MIN  | MAX  |      |
| A   | .252   | .272 | 6.40 | 6.90 |      |
| B   | .095   | .106 | 2.41 | 2.70 |      |
| C   | .150   | .165 | 3.80 | 4.20 |      |
| D   | .179   | .195 | 4.55 | 4.95 |      |
| E   | .019   | .031 | 0.50 | 0.80 |      |
| F   | .090   | .106 | 2.30 | 2.70 |      |
| G   | .004   | .008 | 0.10 | 0.20 |      |
| H   | .027   | .043 | 0.70 | 1.10 |      |
| J   | .058   | .062 | 1.47 | 1.57 |      |
| K   | .195   | .205 | 4.95 | 5.21 |      |
| M   | .039   | .049 | 0.99 | 1.24 |      |
| N   | .006   | .016 | 0.15 | 0.41 |      |

### Mounting Pad Layout

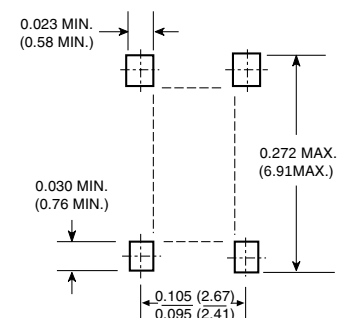


Figure 1. Derating Curve for Output Rectified Current

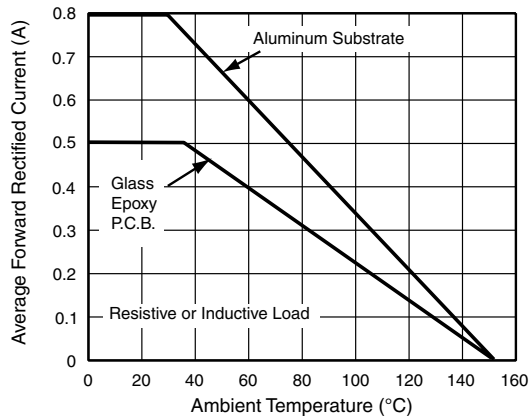
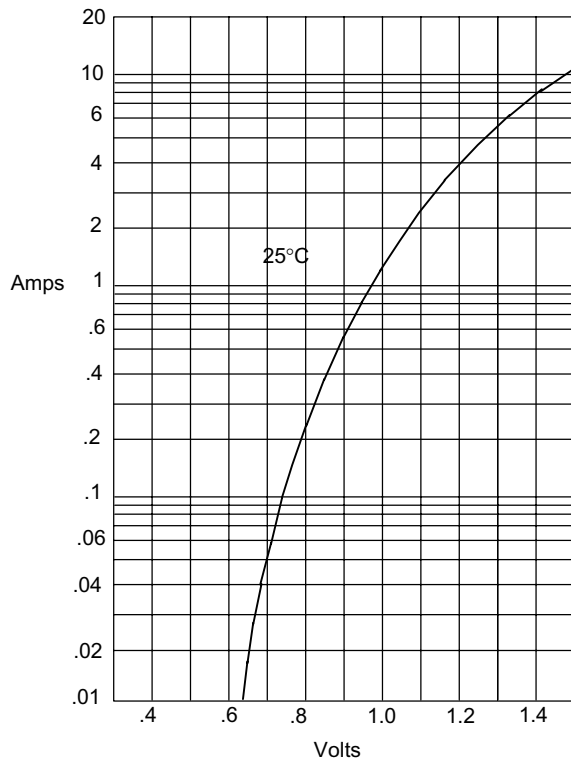
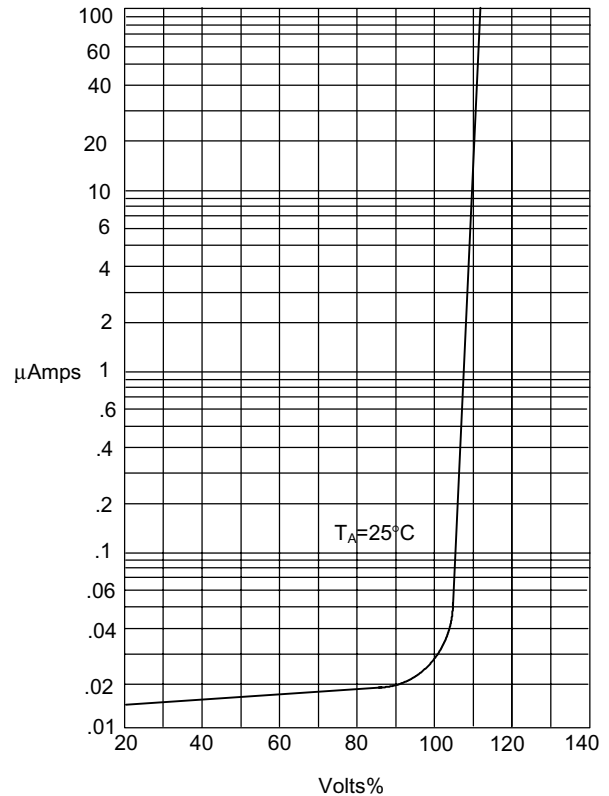


Figure 3  
Typical Forward Characteristics



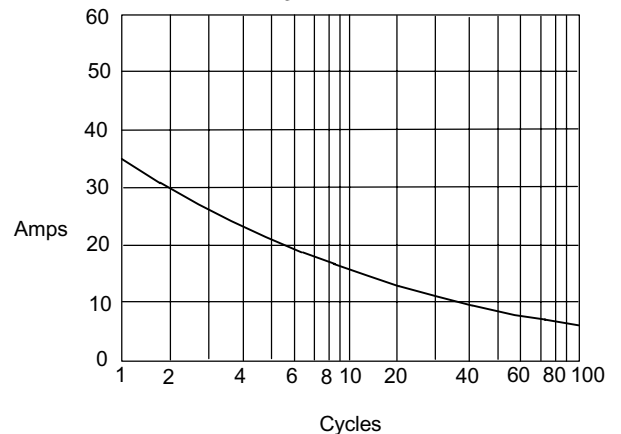
Instantaneous Forward Current - Amperes *versus*  
Instantaneous Forward Voltage - Volts

Figure 2  
Typical Reverse Characteristics



Instantaneous Reverse Leakage Current - MicroAmperes *versus*  
Percent Of Rated Peak Reverse Voltage - Volts%

Figure 5  
Peak Forward Surge Current



Peak Forward Surge Current - Amperes *versus*  
Number Of Cycles At 50Hz - Cycles

## Ordering Information

| Device           | Packing              |
|------------------|----------------------|
| (Part Number)-TP | Tape&Reel;3Kpcs/Reel |

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