

FEATURES

- | Ideal For Surface Mount Application
- | The Plastic Material Used Carries Underwriters Laboratory Flammability Recognition 94V-0
- | Surge Overload Ratings to 30 Amperes



MBS

MECHANICAL DATA

- | Case: Molded Plastic
- | Polarity: Marked On Body
- | Mounting Position: Any

APPROVALS

| | |
|-------------|----------------------------|
| RoHS | Compliance with 2011/65/EU |
|-------------|----------------------------|

MAXIMUM RATINGS AND CHARACTERISTICS (T_A=25°C)

| Parameter | Symbol | MB05SA | MB1SA | MB2SA | MB4SA | MB6SA | MB8SA | MB10SA | Unit |
|---|----------------------------------|-------------|-------|-------|-------|-------|-------|--------|--------------------|
| Marking | | MB05S | MB1S | MB2S | MB4S | MB6S | MB8S | MB10S | |
| Maximum Repetitive Peak Reverse Voltage | V _{RRM} | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | V |
| Maximum RMS Bridge Input Voltage | V _{RMS} | 35 | 70 | 140 | 280 | 420 | 560 | 700 | |
| Maximum DC Blocking Voltage | V _{DC} | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | |
| Maximum Average Forward Rectified Output Current At T _A =40°C | I _{F(AV)} | 1.0 | | | | | | | A |
| Peak Forward Surge Current Single Sine-wave Superimposed On Rated Load (Jedec Method) | I _{FSM} | 30 | | | | | | | |
| Maximum Instantaneous Forward Voltage Drop Per Leg at 0.5A | V _F | 1.1 | | | | | | | V |
| Maximum Dc Reverse Current at Rated Dc Blocking Voltage Per Element | I _R | 10 | | | | | | | μA |
| | | 500 | | | | | | | |
| Typical Thermal Resistance Per Element (1) | R _{θJA} | 110 | | | | | | | °C/W |
| Rating For Fusing (T<8.3ms) | I ² t | 10 | | | | | | | A ² sec |
| Typical Junction Capacitance Per Element (2) | C _J | 25.0 | | | | | | | pF |
| Operating Junction And Storage Temperature Range | T _J ,T _{STG} | -55 to +150 | | | | | | | °C |

Notes: (1) Thermal resistance from Junction to Ambient on P.C.board mounting.
 (2) Measured at 2.0MHz and applied reverse voltage of 4.0 Volts.

CHARACTERISTIC CURVES

Fig. 1- Derating Curve for Output Rectified Current

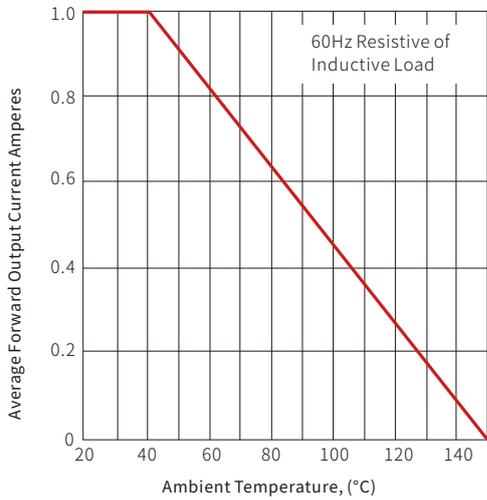


Fig. 2- Maximum Non-repetitive Peak Forward Surge Current

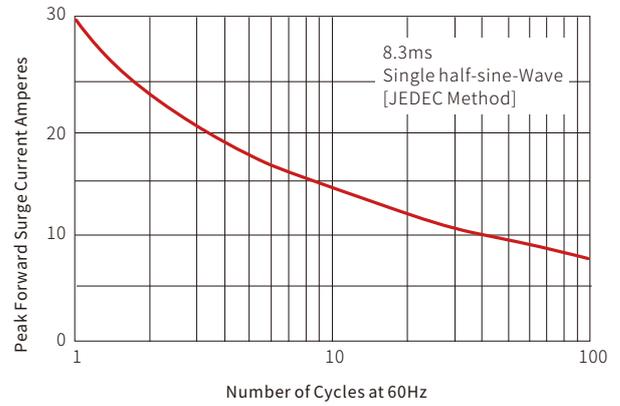


Fig. 3- Typical Instantaneous Forward Characteristics

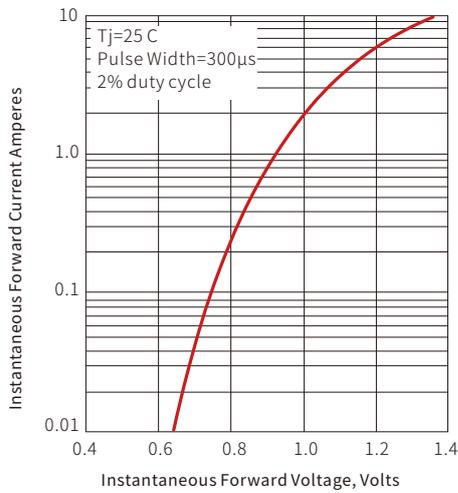


Fig. 4- Typical Revers Characteristics

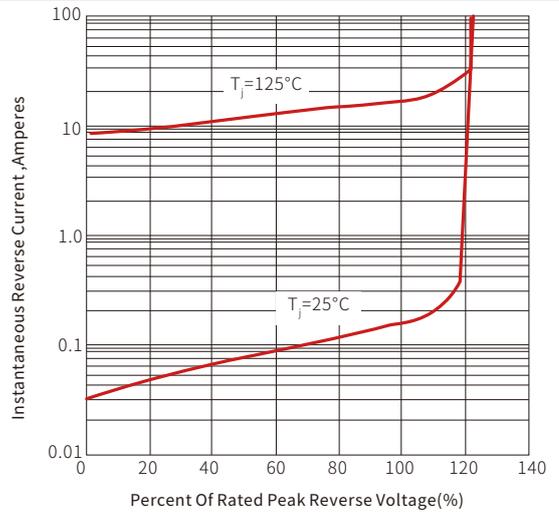
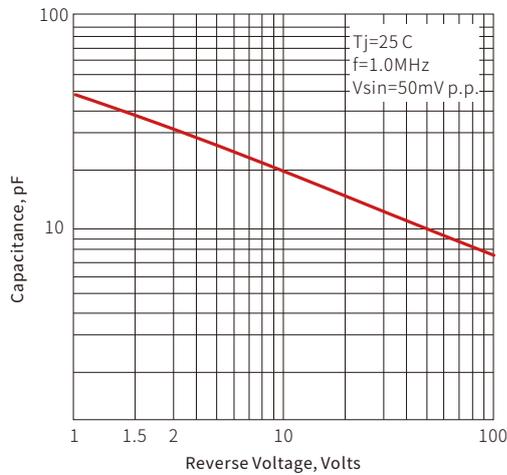
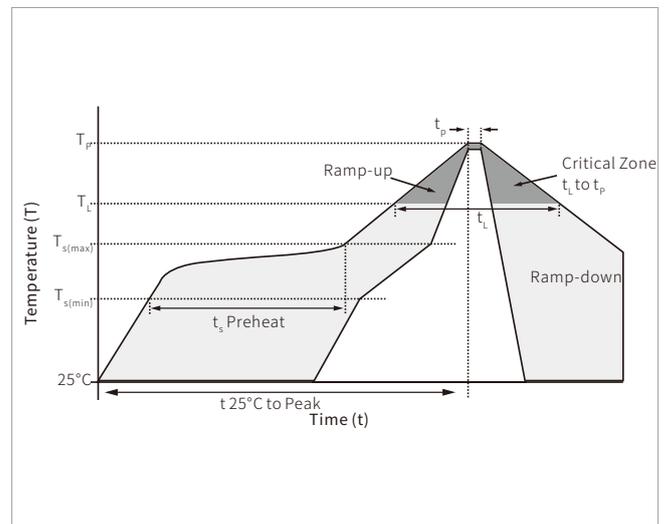


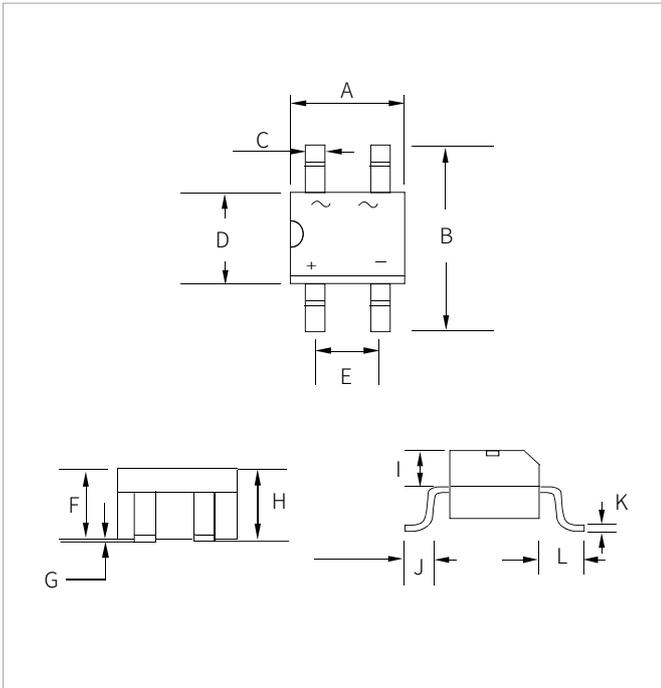
Fig. 5-Typical Junction Capacitance


SOLDERING PARAMETERS

| Reflow Condition | | Lead-free assembly |
|--|---|--------------------|
| Pre Heat | Temperature Max ($T_{s(\text{min})}$) | 150°C |
| | Temperature Max ($T_{s(\text{max})}$) | 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 |
| $T_{s(\text{max})}$ to T_L - Ramp-up Rate | | 3°C/second max |
| Reflow | Temperature (T_L) (Liquidus) | 217°C |
| | Time (min to max) (t_L) | 60 – 150 seconds |
| Peak Temperature (T_p) | | 260°C |
| Time within 5°C of actual peak Temperature (t_p) | | 20 – 40 seconds |
| Ramp-down Rate | | 6°C/second max |
| Time 25°C to peak Temperature (T_p) | | 8 minutes max. |
| Do not exceed | | 260°C |



MBS PACKAGE INFORMATION



| Ref. | Millimeters | | Inches | |
|------|-------------|------|-----------|-------|
| | Min. | Max. | Min. | Max. |
| A | 4.50 | 4.90 | 0.177 | 0.193 |
| B | 7.00Max. | | 0.276Max. | |
| C | 0.56 | 0.84 | 0.022 | 0.033 |
| D | 3.60 | 4.00 | 0.142 | 0.157 |
| E | 2.20 | 2.60 | 0.087 | 0.102 |
| F | 2.30 | 2.70 | 0.090 | 0.106 |
| G | 0.20Max. | | 0.008Max. | |
| H | 3.0Max. | | 0.118Max. | |
| I | 0.95 | 1.53 | 0.037 | 0.053 |
| J | 0.70 | 1.10 | 0.028 | 0.043 |
| K | 0.15 | 0.35 | 0.006 | 0.014 |
| L | 1.10 | 2.12 | 0.043 | 0.083 |

ORDERING INFORMATION

| Part Number | Component Package | QTY/Reel | Reel Size |
|---------------|-------------------|----------|-----------|
| MB05SA-MB10SA | MBS | 3000PCS | 11" |

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