

Features

- ▶ For use in low voltage, high frequency inverters
- ▶ Free wheeling, and polarity protection applications

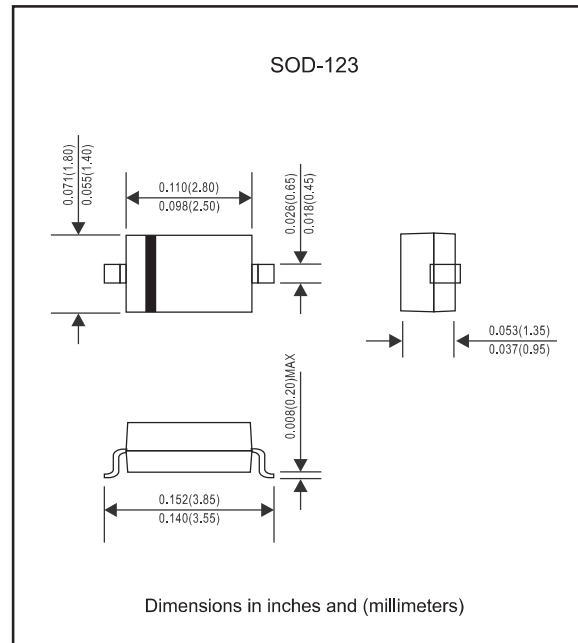
Mechanical data

- ▶ **Case:** JEDEC SOD-123 molded plastic body
- ▶ **Terminals:** Solder plated, solderable per MIL-STD-750, Method 2026
- ▶ **Polarity:** Color band denotes cathode end
- ▶ **Mounting Position:** Any
- ▶ **Marking:**

MBR0520T1G: SD
 MBR0530T1G: SE
 MBR0540T1G: SF



Package outline

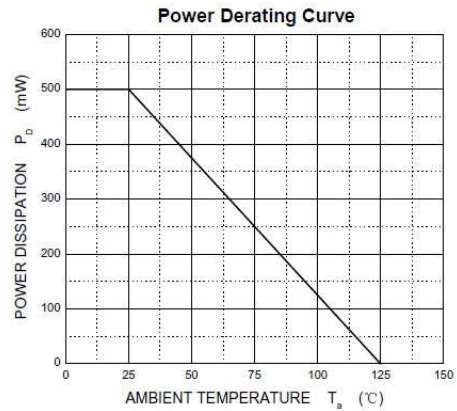
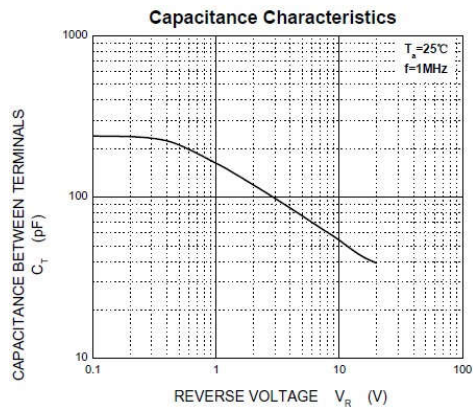
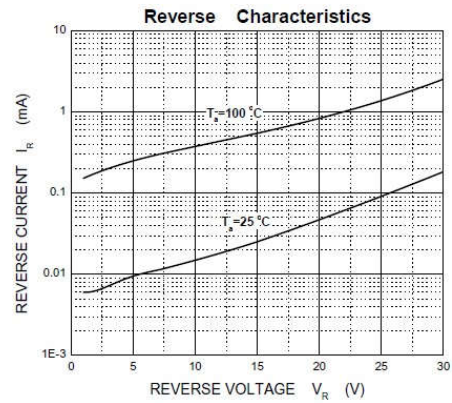
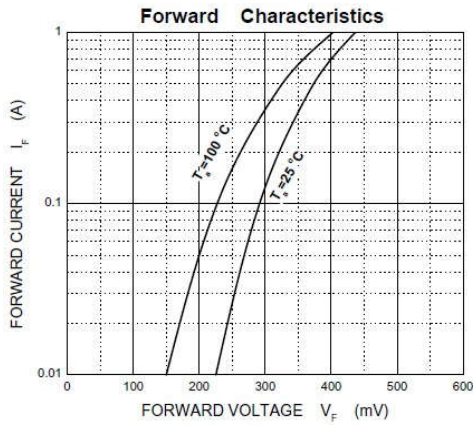


Maximum ratings and Electrical Characteristics (AT $T_A=25^{\circ}\text{C}$ unless otherwise noted)



| PARAMETER | SYMBOLS | MBR0520T1G | MBR0530T1G | MBR0540T1G | UNITS |
|--|--------------------|------------|-------------|------------|--------------------|
| Peak repetitive peak reverse voltage | V_{RRM} | | | | |
| Working peak DC Blocking voltage | V_{RWM} V_R | 20 | 30 | 40 | V |
| RMS Reverse voltage | $V_{R(RMS)}$ | 14 | 21 | 28 | V |
| Average rectified output current | I_o | | 0.5 | | A |
| Peak forward surge current @=8.3ms | I_{FSM} | | 5.5 | | A |
| Power dissipation | P_d | | 500 | | mW |
| Thermal resistance junction to ambient | $R_{\theta JA}$ | | 200 | | K/W |
| Operating junction temperature range | T_J | | -55 to +125 | | $^{\circ}\text{C}$ |
| Storage temperature | T_{STG} | | -55 to +150 | | |
| Non-Repetitive peak reverse voltage | V_{RM} | 20 | 30 | 40 | V |

| PARAMETER | SYMBOLS | Min. | Max. | Unit | Test conditions | |
|---------------------------------|------------|------|-------|---------------|----------------------------------|------------|
| Reverse breakdown voltage | $V_{(BR)}$ | 20 | | V | $I_R=250\mu\text{A}$ | MBR0520T1G |
| | | 30 | | V | $I_R=200\mu\text{A}$ | MBR0530T1G |
| | | 40 | | V | $I_R=20.0\mu\text{A}$ | MBR0540T1G |
| Reverse voltage leakage current | I_R | | 75 | μA | $V_R=10\text{V}$ | MBR0520T1G |
| | | | 20 | μA | $V_R=15\text{V}$ | MBR0530T1G |
| | | | 250 | μA | $V_R=20\text{V}$ | MBR0520T1G |
| | | | 10 | μA | $V_R=20\text{V}$ | MBR0540T1G |
| | | | 130 | μA | $V_R=30\text{V}$ | MBR0530T1G |
| | | | 20 | μA | $V_R=40\text{V}$ | MBR0540T1G |
| Forward voltage | V_F | | 0.33 | V | $I_F=0.1\text{A}$ | MBR0520T1G |
| | | | 0.385 | V | $I_F=0.5\text{A}$ | |
| | | | 0.375 | V | $I_F=0.1\text{A}$ | MBR0530T1G |
| | | | 0.43 | V | $I_F=0.5\text{A}$ | |
| | | | 0.51 | V | $I_F=0.5\text{A}$ | MBR0540T1G |
| | | | 0.62 | V | $I_F=1.0\text{A}$ | |
| Diode capacitance | C_D | | 170 | pF | $V_R=0\text{V}, f=1.0\text{MHz}$ | |

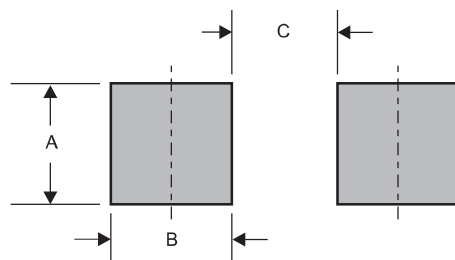
Rating and characteristic curves



Pinning information

| Pin | Simplified outline | Symbol |
|----------------------------|---|---|
| Pin1 cathode Pin2 anode |  |  |

Suggested solder pad layout



Dimensions in inches and (millimeters)

| PACKAGE | A | B | C |
|---------|--------------|--------------|--------------|
| SOD-123 | 0.048 (1.22) | 0.036 (0.91) | 0.093 (2.36) |

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