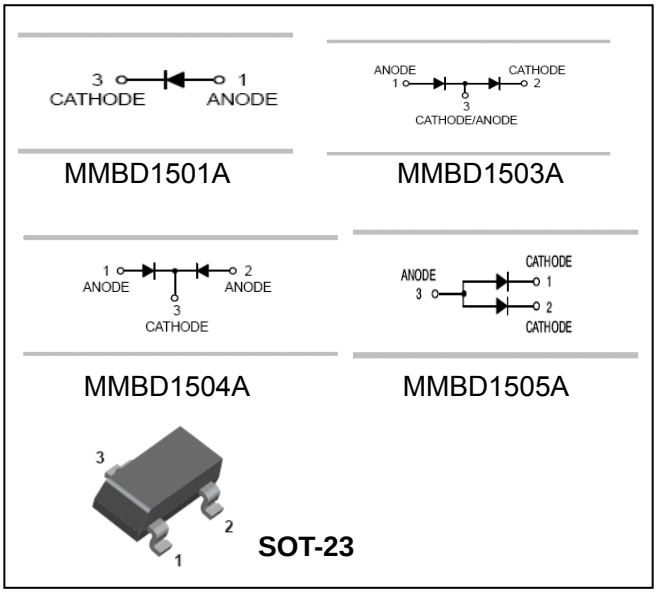
High conductance low leakage diode

# MMBD1501A/1503A/ 1504A/1505A

## FEATURES

Lead-free

- Two element incorporated into one package.
  (Emitter-coupled transistors)
- Reduction of the mounting area and assembly cost by one half.




## APPLICATIONS

- For general application.

## ORDERING INFORMATION

| Type No. | Marking | Package Code |
|---|---|---|
| MMBD1501A | A11 | SOT-23 |
| MMBD1503A | A13 | SOT-23 |
| MMBD1504A | A14 | SOT-23 |
| MMBD1505A | A15 | SOT-23 |

## MAXIMUM RATING @ Ta=25℃ unless otherwise specified

| **Parameter** | **Symbol** | **Limits** | **Unit** |
|---|---|---|---|
| Reverse Voltage | $V_R$ | 200 | V |
| Average rectified current | $V_{F(AV)}$ | 200 | mA |
| Forward Continuous Current | $I_{FM}$ | 600 | mA |
| Peak forward current (1.0s)<br>(1.0m) | $I_{FSM}$ | 1.0<br>2.0 | A |
| Power Dissipation | $P_d$ | 350 | mW |
| Thermal resistance,Junction to ambient | $R_{\theta JA}$ | 357 | ℃/W |
| Storage temperature | $T_{STG}$ | -55-150 | ℃ |

High conductance low leakage diode

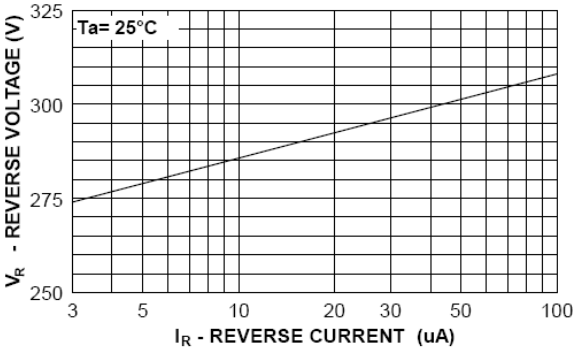
# MMBD1501A/1503A/ 1504A/1505A

## ELECTRICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified

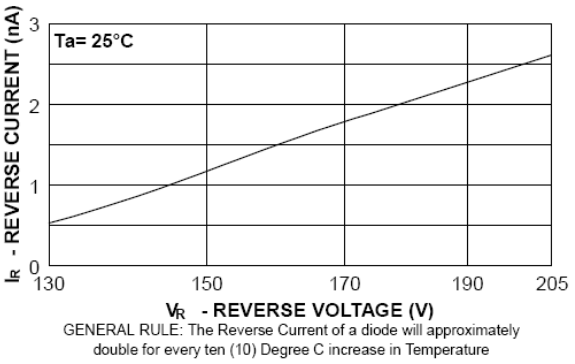
| Parameter | Symbol | Min. | Max. | Unit | Test Conditions |
|---|---|---|---|---|---|
| Reverse Breakdown Voltage | $V_{(BR)R1}$ | 200 | | V | $I_R$=5μA |
| Forward voltage | $V_F$ | 0.62 | 0.72 | V | $I_F$=1mA |
| | | 0.72 | 0.83 | | $I_F$=10mA |
| | | 0.8 | 0.89 | | $I_F$=50mA |
| | | 0.83 | 0.93 | | $I_F$=100mA |
| | | 0.87 | 1.1 | | $I_F$=200mA |
| | | 0.9 | 1.15 | | $I_F$=300mA |
| Reverse current | $I_R$ | | 1.0 | nA | $V_R$=125V |
| | | | 10 | | $V_R$=180V |
| Diode Capacitance | $C_D$ | | 4 | pF | $V_R$=0V,f=1MHz |

## TYPICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified

**REVERSE VOLTAGE vs REVERSE CURRENT**
**BV - 3.0 to 100 uA**

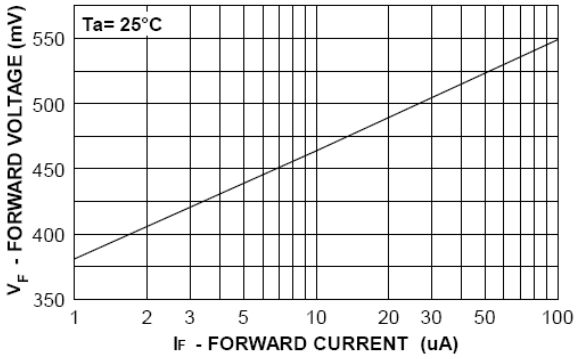



**REVERSE CURRENT vs REVERSE VOLTAGE**
**IR - 130 - 205 Volts**

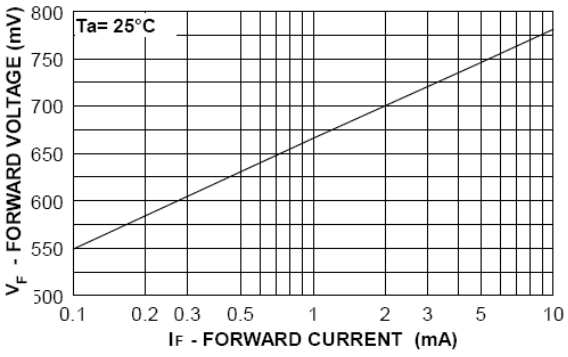



GENERAL RULE: The Reverse Current of a diode will approximately double for every ten (10) Degree C increase in Temperature

**FORWARD VOLTAGE vs FORWARD CURRENT**
**VF - 1 to 100 uA**



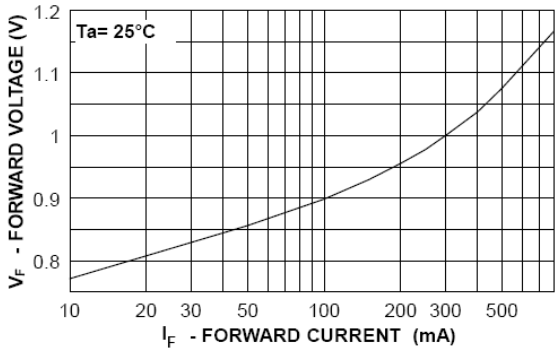

**FORWARD VOLTAGE vs FORWARD CURRENT**
**VF - 0.1 to 10 mA**



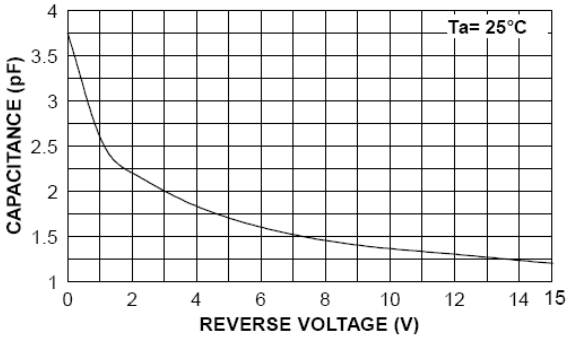
High conductance low leakage diode

# MMBD1501A/1503A/ 1504A/1505A

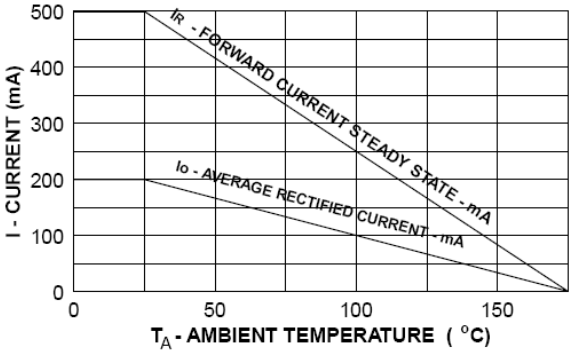
**FORWARD VOLTAGE vs FORWARD CURRENT**
**VF - 10 to 800 mA**



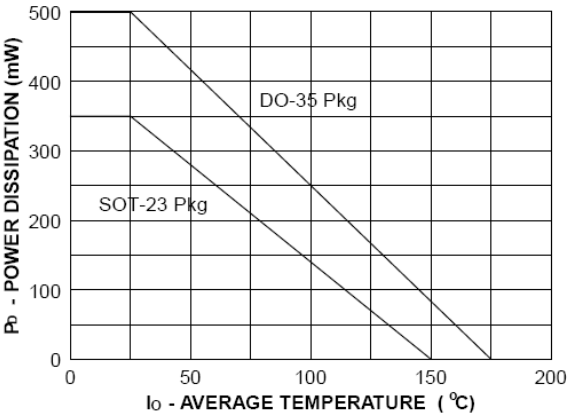

**CAPACITANCE vs REVERSE VOLTAGE**
**VR - 0 to 15 V**




**Average Rectified Current (Io) & Forward Current ($I_F$) versus Ambient Temperature ($T_A$)**



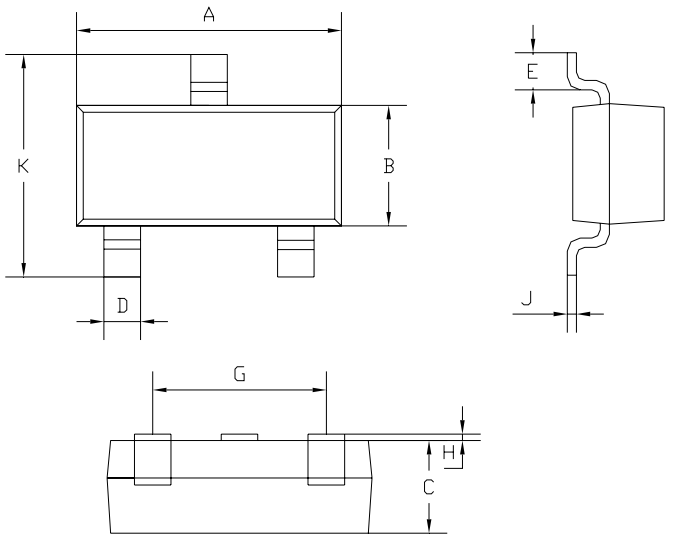

**POWER DERATING CURVE**



High conductance low leakage diode **MMBD1501A/1503A/ 1504A/1505A**

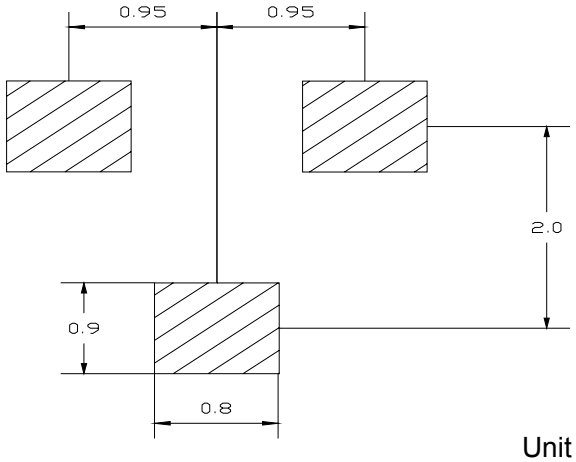
## PACKAGE OUTLINE

Plastic surface mounted package SOT-23




| SOT-23 | | |
|---|---|---|
| Dim | Min | Max |
| A | 2.85 | 2.95 |
| B | 1.25 | 1.35 |
| C | 1.0Typical | |
| D | 0.37 | 0.43 |
| E | 0.35 | 0.48 |
| G | 1.85 | 1.95 |
| H | 0.02 | 0.1 |
| J | 0.1Typical | |
| K | 2.35 | 2.45 |
| All Dimensions in mm | | |

## SOLDERING FOOTPRINT




Unit : mm

## PACKAGE INFORMATION

| Device | Package | Shipping |
|---|---|---|
| MMBD1501A/1503A/1504A/1505A | SOT-23 | 3000/Tape&Reel |