# America Semiconductor

**Silicon Standard Recovery Diode**

## Features

• High Surge Capability
• Types up to 1600 V $V_{RRM}$

**Heavy Three Tower Package**
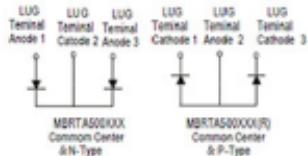




## Maximum ratings, at Tj = 25 °C, unless otherwise specified

| Parameter | Symbol | Conditions | MSRTA50060(A) | MSRTA50080(A) | MSRTA500100(A) | Unit |
|---|---|---|---|---|---|---|
| Repetitive peak reverse voltage | $V_{RRM}$ | | 600 | 800 | 1000 | V |
| RMS reverse voltage | $V_{RMS}$ | | 420 | 560 | 700 | V |
| DC blocking voltage | $V_{DC}$ | | 600 | 800 | 1000 | V |
| Continuous forward current | $I_F$ | $T_C$ ≤ 125 °C | 500 | 500 | 500 | A |
| Surge non-repetitive forward current, Half Sine Wave | $I_{FSM}$ | $T_C$ = 25 °C, $t_p$ = 8.3 ms | 4400 | 4400 | 4400 | A |
| Operating temperature | $T_j$ | | -40 to 175 | -40 to 175 | -40 to 175 | °C |
| Storage temperature | $T_{stg}$ | | -40 to 175 | -40 to 175 | -40 to 175 | °C |

## Electrical characteristics, at Tj = 25 °C, unless otherwise specified

| Parameter | Symbol | Conditions | MSRTA50060(A) | MSRTA50080(A) | MSRTA500100(A) | Unit |
|---|---|---|---|---|---|---|
| Diode forward voltage | $V_F$ | $I_F$ = 500 A, $T_j$ = 25 °C | 1.2 | 1.2 | 1.2 | V |
| Reverse current | $I_R$ | $V_R$ = 600 V, $T_j$ = 25 °C | 25 | 25 | 25 | µA |
| | | $V_R$ = 600 V, $T_j$ = 150 °C | 10 | 10 | 10 | mA |

## Thermal characteristics

| Parameter | Symbol | Conditions | MSRTA50060(A) | MSRTA50080(A) | MSRTA500100(A) | Unit |
|---|---|---|---|---|---|---|
| Thermal resistance, junction - case | $R_{thJC}$ | | 0.12 | 0.12 | 0.12 | °C/W |

Figure .1- Typical Forward Characteristics



Instantaneous Forward Current -Iamperes versus Iamps  Per  leg

Volts
Instantaneous Forward Voltage -Volts

25 ℃
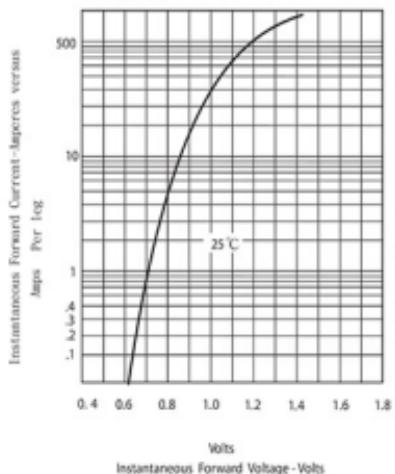
Figure. 2 Forward Derating Curve



Average Forward Rectified Current -Iamperes versus Iamps  Per  leg

Single Phase  Half Wave
60Hz  Resistive  or Inductive Load

Case Temperature - ℃
℃
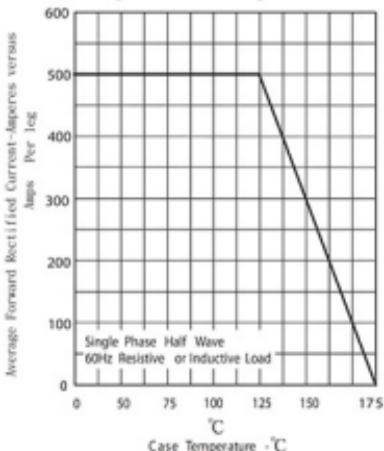
Figure.3-Peak Forward Surge Current



Peak Forward Surge Current -Amperes versus Amps  Per  leg

8.3ms Single  Half
Sine  Wave
JEDEC method   T$_J$ =25 ℃

Cycles
Number Of Cycles At 60Hz - Cycles
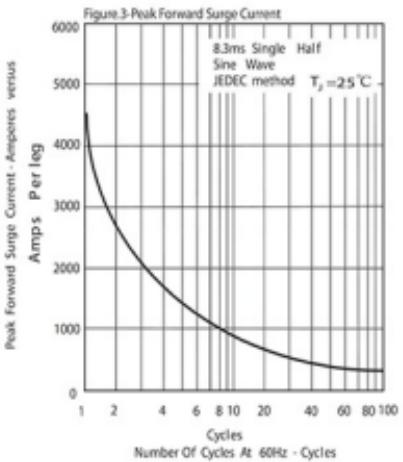
Figure .4 -Typical Reverse  Characteristics



Instantaneous Reverse Leakage Current  mA  versus mA  Per  leg

T$_J$=175 ℃

T$_J$=125 ℃

T$_J$=75 ℃

T$_J$=25 ℃

Volts
Reverse  Voltage - Volts (%)

RoHS