深圳市三瑞思电子科技有限公司

**Shenzhen Sunrise Electronic Technology Co., Ltd.**

# 20SQ045

## LOW VF SCHOTTKY BARRIER RECTIFIER

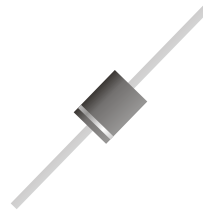
Reverse Voltage - 45 Volts

Forward Current - 20.0Amperes

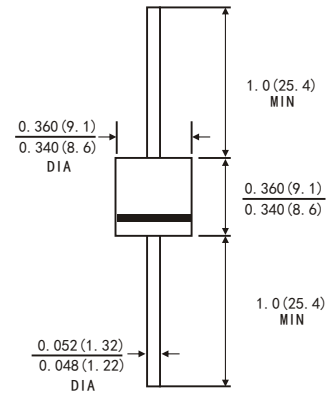
## FEATURES

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Metal silicon junction ,majority carrier conduction
- Guard ring for overvoltage protection
- Low power loss ,high efficiency
- High current capability ,low forward voltage drop
- High surge capability
- High temperature soldering guaranteed:260℃/10 seconds at terminals
- Component in accordance to RoHS 2011/65/EU

Pb RoHS COMPLIANT



R-6




Dimensions in inches and (millimeters)

## MECHANICAL DATA

- Case: R-6 molded plastic body
- Terminals: Plated axial leads, solderable per MIL-STD-750,method 2026
- Polarity: color band denotes cathode end
- Mounting Position: Any
- Weight: 0.07ounce, 2.1 grams

| PRIMARY CHARACTERISTICS | |
|---|---|
| $I_{F(AV)}$ | 20.0A |
| $V_{RRM}$ | 45V |
| $I_{FSM}$ | 200A |
| $V_F$ at $I_F$=20.0A | 0.45V |
| $T_{JMAX}$ | 150℃ |

## TYPICAL APPLICATIONS

For use in low voltage ,high frequency inverters ,DC/DC converters, free wheeling ,and polarity protection applications

## MAXIMUM RATINGS

(Ratings at 25℃ ambient temperature unless otherwise specified )

| Parameter | Symbol | 20SQ045 | Unit |
|---|---|---|---|
| Maximum repetitive peak reverse voltage | $V_{RRM}$ | 45 | V |
| Maximum average forward rectified current 0.375"(9.5mm) lead length(see fig.1) | $I_{F(AV)}$ | 20.0 | A |
| Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC method at rated TL) | $I_{FSM}$ | 200 | A |
| Operating junction temperature range | $T_J$ | -55 to+150 | ℃ |
| Storage temperature range | $T_{stg}$ | -55 to+150 | ℃ |

# RATINGS AND CHARACTERISTIC OF 20SQ045

## ELECTRICAL CHARACTERISTCS（$T_A$=25℃ Unless otherwise noted）

| Parameter | Test Conditions | | Symbol | TYP. | MAX. | Unit |
|---|---|---|---|---|---|---|
| Instaneous forward voltage | IF=20. 0A | $T_A$=25℃ | $V_F$ 1) | 0. 50 | 0. 55 | V |
| | | $T_A$=100℃ | | 0. 43 | – | |
| | | $T_A$=125℃ | | 0. 41 | – | |
| Reverse current | $V_R$=45V | $T_A$=25℃ | $I_R$ 2) | 100 | 200 | μA |
| | | $T_A$=100℃ | | 5 | – | mA |
| | | $T_A$=125℃ | | 17 | – | |
| Typical junction capacitance | 4V, 1MHz | | $C_j$ | 2300 | | pF |

Notes: 1.Pulse test: 300 μs pulse width,1% duty cycle
2.Pulse test: pulse width≤40ms

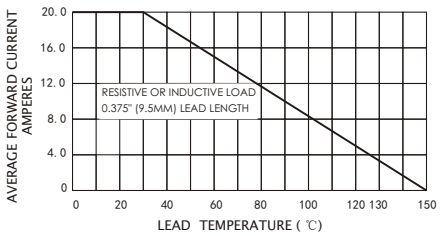
## THERMAL CHARACTERISTCS（$T_A$=25℃ Unless otherwise noted）

| Parameter | Symbol | 20SQ045L | Unit |
|---|---|---|---|
| Typical thermal resistance 3) | $R_{\theta}JA$ | 25.0 | ℃/W |
| | $R_{\theta}JL$ | 8.0 | |

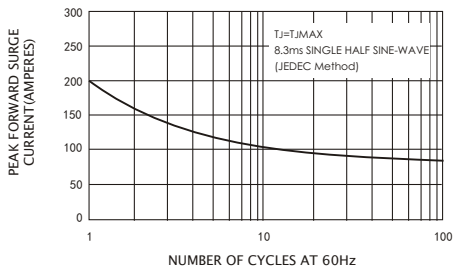
3.Thermal resistance from junction to lead vertical P.C.B. mounted , 0.375"(9.5mm)lead length

# RATINGS AND CHARACTERISTIC OF 20SQ045

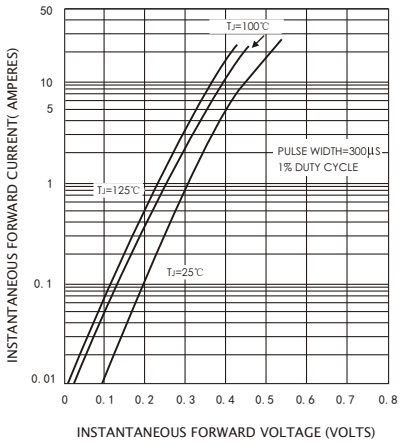
## FIG.1-FORWARD CURRENT DERATING CURVE



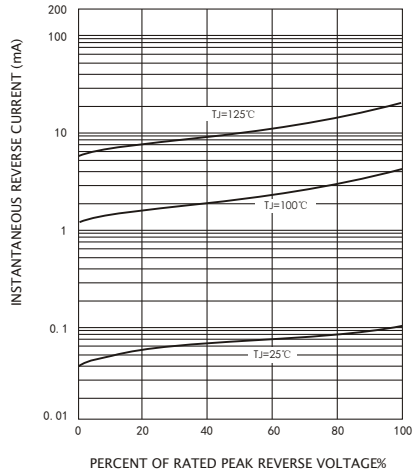

## FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT




## FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS




## FIG.4-TYPICAL REVERSE CHARACTERISTICS




## FIG.5-TYPICAL JUNCTION CAPACITANCE