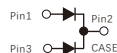


### FEATURES

- Power pack
- Metal silicon junction ,majority carrier conduction
- Guard ring for overvoltage protection
- Low power loss ,high efficiency
- High current capability ,low forward voltage drop
- High forward surge capability
- High frequency operation
- Meets MSL Level 1, per J-STD-020,LF MAX peak of 260°C (for TO-263 package)
- Solder bath temperature 275°C maximum,10s,per JESD22-B106 (for TO-220AB and ITO-220AB package)
- Component in accordance to RoHS 2015/863/EU



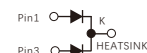
TO-220AB



ITO-220AB



TO-263  
SR20200LD1



### MECHANICAL DATA

- Case: JEDEC TO-220AB、ITO-220AB、TO-263
- Molding compound meets UL94V-0 flammability rating
- Terminals: Lead solderable per J-STD-002 and JESD22-B102
- Polarity: As marked
- Mounting Torque: 10 in-lbs maximum

### TYPICAL APPLICATIONS

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

### MAXIMUM RATINGS

(Ratings at 25°C ambient temperature unless otherwise specified )

| Parameter   | Symbol         | Value      | Unit |
|---|----------------|------------|------|
| Maximum repetitive peak reverse voltage   | $V_{RRM}$      | 200        | V    |
| Maximum average forward rectified current,D=0.5, Square waveform,Tc=130°C for TO-220AB and TO-263, Tc=100°C for ITO-220AB (see Fig.1) | Per leg        | 10.0       | A    |
|   | Total device   | 20.0       |      |
| Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC method at rated TL, Total device)            | $I_{FSM}$      | 250        | A    |
| Peak repetitive reverse current per diode at tp=2μs 1KHz  | $I_{RRM}$      | 0.5        | A    |
| Operating junction and Storage temperature range  | $T_J, T_{stg}$ | -55 to+150 | °C   |
| Isolation voltage(ITO-220AB only)from terminals to heatsink t=1 min   | $V_{AC}$       | 1500       | V    |

| PRIMARY CHARACTERISTICS         |                             |
|---------------------------------|-----------------------------|
| $I_F(AV)$                       | 2×10A                       |
| $V_{RRM}$                       | 200V                        |
| $I_{FSM}$                       | 250A                        |
| $V_f$ at $I_f=10A(125^\circ C)$ | 0.71V                       |
| $I_r$                           | 0.1μA                       |
| $T_J(MAX)$                      | 150°C                       |
| Package                         | TO-220AB, ITO-220AB, TO-263 |
| Diode variations                | Common cathode              |

## ELECTRICAL CHARACTERISTICS (Per leg, $T_A=25^{\circ}\text{C}$ Unless otherwise noted)

| Parameter                     | Test Conditions    |                           | Symbol              | Typ. | Max. | Unit          |
|-------------------------------|--------------------|---------------------------|---------------------|------|------|---------------|
| Instantaneous forward voltage | $I_F=10.0\text{A}$ | $T_A=25^{\circ}\text{C}$  | $V_F$ <sup>1)</sup> | 0.86 | 0.90 | V             |
|                               |                    | $T_A=100^{\circ}\text{C}$ |                     | 0.73 | -    |               |
|                               |                    | $T_A=125^{\circ}\text{C}$ |                     | 0.71 | -    |               |
|                               | $I_F=5.0\text{A}$  | $T_A=25^{\circ}\text{C}$  |                     | 0.77 | -    |               |
|                               |                    | $T_A=100^{\circ}\text{C}$ |                     | 0.66 | -    |               |
|                               |                    | $T_A=125^{\circ}\text{C}$ |                     | 0.63 | -    |               |
| Reverse current               | $V_R=140\text{V}$  | $T_A=25^{\circ}\text{C}$  | $I_R$ <sup>2)</sup> | -    | 5    | $\mu\text{A}$ |
|                               | $V_R=200\text{V}$  | $T_A=25^{\circ}\text{C}$  |                     | -    | 20   | $\mu\text{A}$ |
|                               | $V_R=200\text{V}$  | $T_A=125^{\circ}\text{C}$ |                     | -    | 1.5  | mA            |
| Typical junction capacitance  | 4V,1MHz            |                           | $C_j$               | 570  |      | pF            |

Notes: 1.Pulse test: 300  $\mu\text{s}$  pulse width,1% duty cycle

2.Pulse test: pulse width  $\leq 40\text{ms}$

## THERMAL CHARACTERISTICS

| Parameter                                | Symbol          | TO-220AB | ITO-220AB | TO-263 | Unit                        |
|--|-----------------|----------|-----------|--------|-----------------------------|
| Typical thermal resistance <sup>3)</sup> | $R_{\theta jc}$ | 1.3      | 3.2       | 1.3    | $^{\circ}\text{C}/\text{W}$ |

3.Thermal resistance from junction to case

## AVAILABLE PACK INFORMATION

| Product code          | Pack | Carton Size<br>L×W×H(mm) | Inner Box Size<br>L×W×H(mm) | Tube Length<br>(mm)   | Inner Box<br>Number | Tube Number<br>Per A Inner Box | Part Number<br>Per A Tube | Quantity(carton)<br>(K) |
|-----------------------|------|--------------------------|-----------------------------|-----------------------|---------------------|--------------------------------|---------------------------|-------------------------|
| SR20200LCT-TO-220AB   | Tube | 565×225×170              | 548×151×37                  | 540                   | 5                   | 20                             | 50                        | 5                       |
| SRF20200LCT-ITO-220AB | Tube | 565×225×170              | 548×151×37                  | 540                   | 5                   | 20                             | 50                        | 5                       |
| SR20200LD1-TO-263     | Tube | 565×225×170              | 548×151×37                  | 538                   | 5                   | 20                             | 50                        | 5                       |
|                       |      |                          |                             |                       |                     |                                |                           |                         |
| Product code          | Pack | Carton Size<br>L×W×H(mm) | Inner Box Size<br>L×W×H(mm) | Reel Diameter<br>(mm) | Inner Box<br>Number | Reel Number<br>Per A Inner Box | Part Number<br>Per A Reel | Quantity(carton)<br>(K) |
| SR20200LD1-TO-263     | Reel | 364×364×235              | 330×330×38                  | $\phi 330$            | 5                   | 1                              | 800                       | 4                       |
|                       |      |                          |                             |                       |                     |                                |                           |                         |

FIG.1-FORWARD CURRENT DERATING CURVE

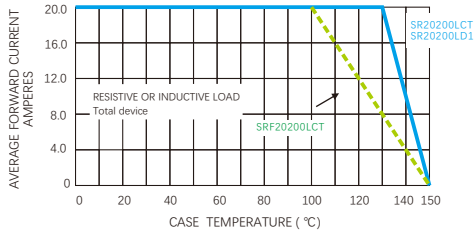


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

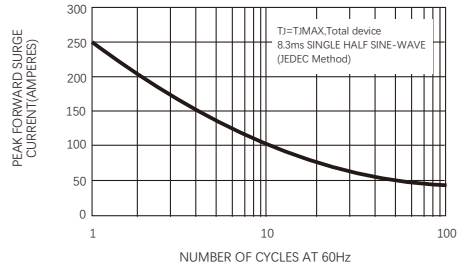


FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

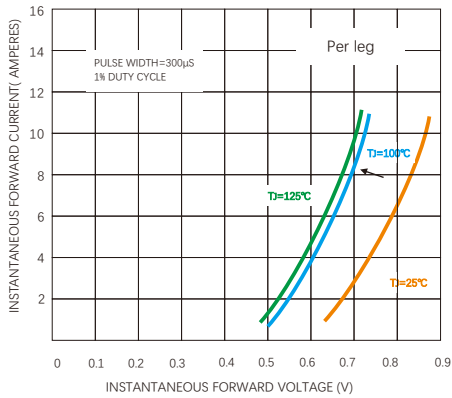


FIG.4-TYPICAL REVERSE CHARACTERISTICS

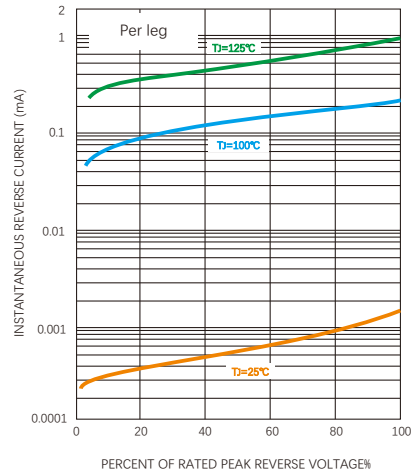
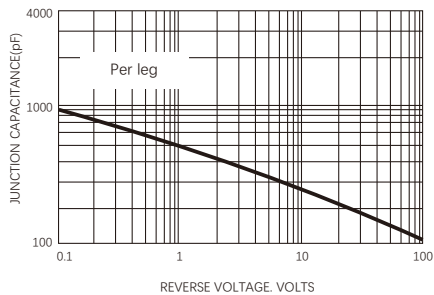
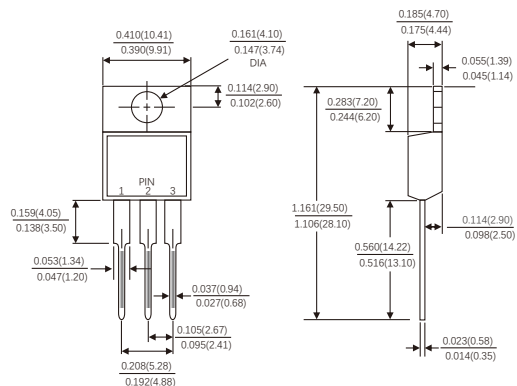


FIG.5-TYPICAL JUNCTION CAPACITANCE

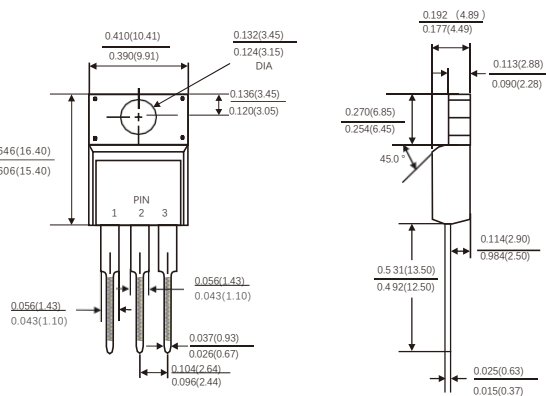


Dimensions in inches and (millimeters)

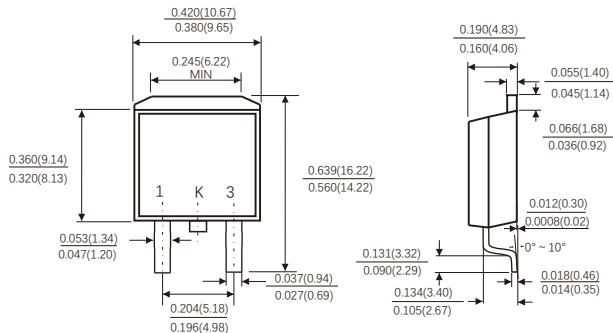
## TO-220AB



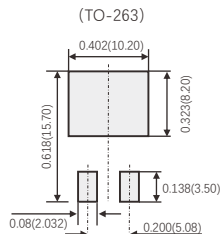
## ITO-220AB



## TO-263



## Suggested Pad Layout



(设计者可参考推荐值根据焊接工艺要求自行确定适合的焊盘尺寸)  
(Designers can refer to the recommended values according to the manufacturing process requirements to determine the appropriate pad size)

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