SEMICONDUCTOR

# SP30U100SL

## SUPER LOW VF SCHOTTKY BARRIER RECTIFIER

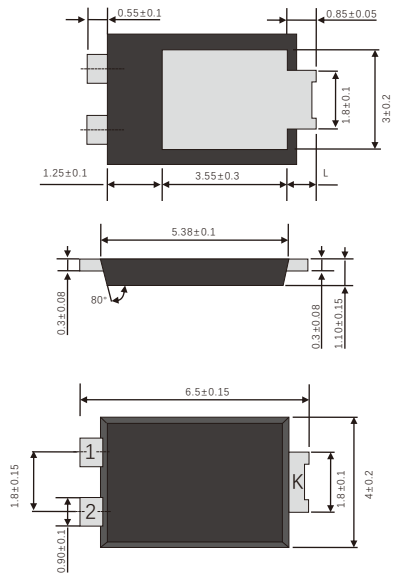
Reverse Voltage - 100Volts
Forward Current - 30.0Amperes

## 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
- Very low profile-typical height of 1.1mm
- Ideal for automated placement
- High temperature soldering guaranteed:260℃/10 seconds at terminals
- Component in accordance to RoHS 2015/863/EU

Pb
RoHS
COMPLIANT

## TO-277

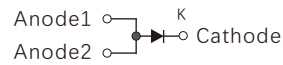



## MECHANICAL DATA

- Case: TO-277 molded plastic body
- Terminals: Plated axial leads, solderable per MIL-STD-750,method 2026
- Mounting Position: Any
- Weight: 0.092 grams(approx)

## TYPICAL APPLICATIONS

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




Dimensions in inches and (millimetrers)

## MAXIMUM RATINGS

(Ratings at 25℃ ambient temperature unless otherwise specified )

| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Maximum repetitive peak reverse voltage | $V_{RRM}$ | 100 | V |
| Maximum average forward rectified current | $I_{F(AV)}$ | 30.0 | A |
| Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC method at rated TL) | $I_{FSM}$ | 325 | A |
| Operating junction temperature range | $T_J$ | -55 to+150 | ℃ |
| Storage temperature range | $T_{stg}$ | -55 to+150 | ℃ |

## ELECTRICAL CHARACTERISTCS (TA=25℃ Unless otherwise noted)

| Parameter | Test Conditions | | Symbol | TYP. | MAX. | Unit |
|---|---|---|---|---|---|---|
| Instaneous forward voltage | $T_j$=25℃ | $I_F$=5.0A | $V_F$ 1) | 0.45 | - | V |
| | | $I_F$=10.0A | | 0.52 | - | |
| | | $I_F$=15.0A | | 0.58 | - | |
| | | $I_F$=20.0A | | 0.65 | - | |
| | | $I_F$=30.0A | | 0.76 | 0.80 | |
| | $T_j$=125℃ | $I_F$=5.0A | | 0.37 | - | |
| | | $I_F$=10.0A | | 0.47 | - | |
| | | $I_F$=15.0A | | 0.54 | - | |
| | | $I_F$=20.0A | | 0.59 | - | |
| | | $I_F$=30.0A | | 0.67 | 0.71 | |
| Reverse current | $V_R$=100V | $T_j$=25℃ | $I_R$ 2) | 15 | 50 | μA |
| | | $T_j$=100℃ | | 3.1 | - | mA |
| | | $T_j$=125℃ | | 14 | - | |
| Typical junction capacitance | 4V,1MHz | | $C_J$ | 1300 | | pF |

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

## THERMAL CHARACTERISTCS

| Parameter | Symbol | TO-277 | Unit |
|---|---|---|---|
| Typical thermal resistance 3) | $R_{\theta JA}$ 4) | 60.0 | ℃/W |
| | $R_{\theta JL}$ | 3.0 | |

3 Units mounted on recommended PCB 1 oz. Pad layout

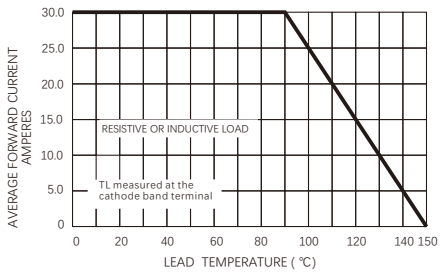
4 The heat generated must be less than thermal conductivity from junction to ambient:$dP_D/dt_J < 1/R_{\theta JA}$

## AVAILABALE PACK INFORMATION

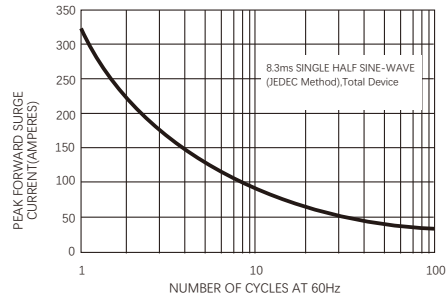
| Product code | Pack | Carton Size L×W×H(mm) | Inner Box Size L×W×H(mm) | Reel diameter (mm) | Inner Box Number | Reel Number Per A Inner Box | Part Number Per A Reel(K) | Quantity(carton) (K) |
|---|---|---|---|---|---|---|---|---|
| SP30U100SL-TO-277 | Reel | 370×370×360 | 338×338×39 | φ330 | 7 | 2 | 5 | 70 |

# RATINGS AND CHARACTERISTICS OF SP30U100SL

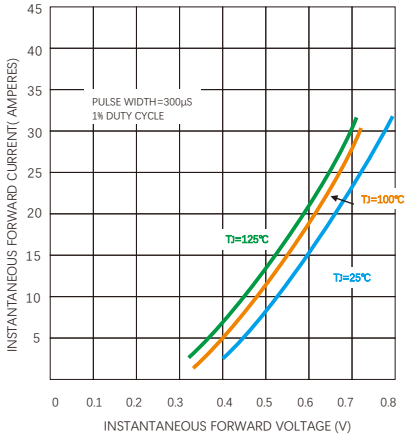
## FIG.1-FORWARD CURRENT DERATING CURVE



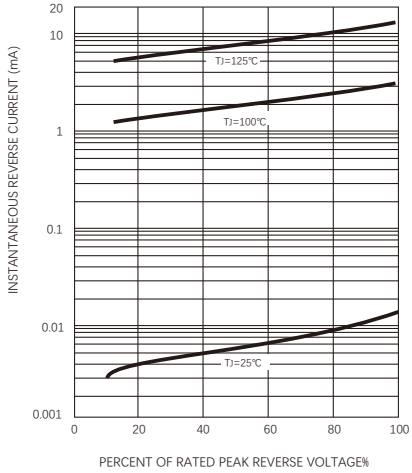

## FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT




## FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS




## FIG.4-TYPICAL REVERSE CHARACTERISTICS




## FIG.5-TYPICAL JUNCTION CAPACITANCE