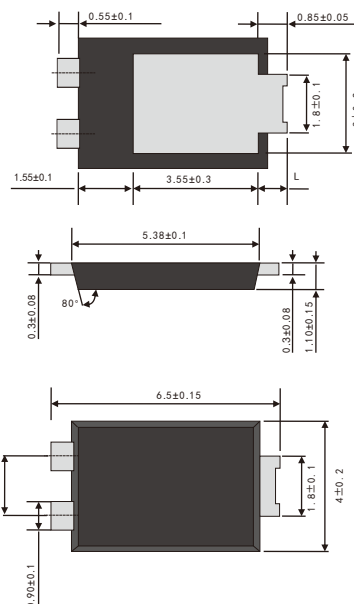


## FEATURES

- 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°C/10 seconds at terminals  
Component in accordance to RoHS 2011/65/EU



## TO-277

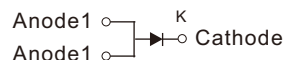


## MECHANICAL DATA

- 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 (millimeters)

## MAXIMUM RATINGS

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

Parameter	Symbol	Value	Unit
Maximum repetitive peak reverse voltage	$V_{RRM}$	150	V
Maximum average forward rectified current	$I_{F(AV)}$	10.0	A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC method at rated TL)	$I_{FSM}$	120	A
Operating junction temperature range	$T_J$	-55 to +150	°C
Storage temperature range	$T_{stg}$	-55 to +150	°C

## RATINGS AND CHARACTERISTIC OF SP10150

### ELECTRICAL CHARACTERISTICS (T<sub>A</sub>=25°C Unless otherwise noted)

Parameter	Test Conditions		Symbol	TYP.	MAX.	Unit
Instantaneous forward voltage	I <sub>F</sub> =10.0A	T <sub>A</sub> =25°C	V <sub>F</sub> <sup>1)</sup>	0.83	0.90	V
		T <sub>A</sub> =100°C		0.71	—	
		T <sub>A</sub> =125°C		0.67	—	
	I <sub>F</sub> =5.0A	T <sub>A</sub> =25°C		0.77	—	
		T <sub>A</sub> =100°C		0.65	—	
		T <sub>A</sub> =125°C		0.61	—	
Reverse current	V <sub>R</sub> =150V	T <sub>A</sub> =25°C	I <sub>R</sub> <sup>2)</sup>	5.0	20	μA
		T <sub>A</sub> =100°C		0.3	—	mA
		T <sub>A</sub> =125°C		1.5	—	
Typical junction capacitance	4V, 1MHz		C <sub>J</sub>	180		pF

Notes: 1.Pulse test: 300 μs pulse width, 1% duty cycle

2.Pulse test: pulse width ≤ 40ms

### THERMAL CHARACTERISTICS

Parameter	Symbol	TO-277	Unit
Typical thermal resistance <sup>3)</sup>	R <sub>θJA</sub>	60.0	°C/W
	R <sub>θJL</sub>	3.0	

3 Units mounted on recommended PCB 1 oz. Pad layout

### AVAILABLE PACK INFORMATION

Product code	Pack	Reel Size (mm)	Quantity (pcs/reel)	Box Size L×W×H (mm)	Quantity (reel/box)	Carton Size L×W×H (mm)	Quantity (box/carton)
SP10150-TO-277	T/R	φ 330	5000	338×338×40	2	365×365×360	7

# RATINGS AND CHARACTERISTIC OF SP10150

FIG.1-FORWARD CURRENT DERATING CURVE

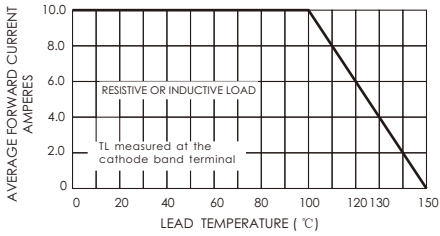


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

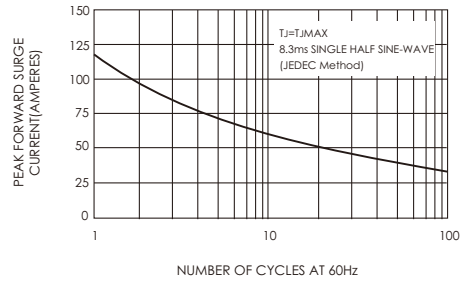


FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

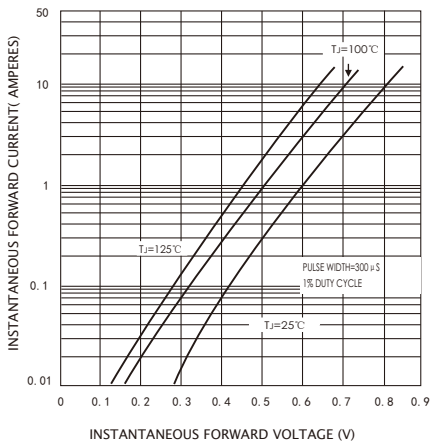


FIG.4-TYPICAL REVERSE CHARACTERISTICS

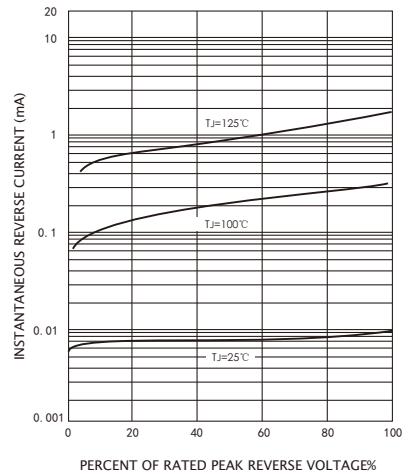


FIG.5-TYPICAL JUNCTION CAPACITANCE

