

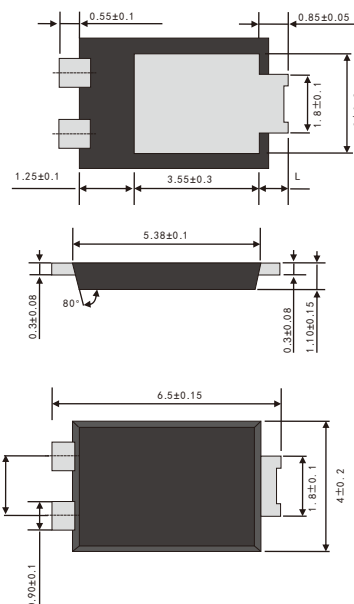
### FEATURES

- 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



RoHS  
COMPLIANT

### TO-277

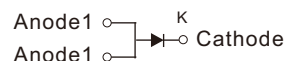


### MECHANICAL DATA

- 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 (millimeters)

### MAXIMUM RATINGS

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

Parameter	Symbol	Value	Unit
Maximum repetitive peak reverse voltage	$V_{RRM}$	45	V
Maximum average forward rectified current	$I_{F(AV)}$	5.0	A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC method at rated $T_J$ )	$I_{FSM}$	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 SP5U45L

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

Parameter	Test Conditions		Symbol	TYP.	MAX.	Unit
Instaneous forward voltage	If=5.0A	TA=25℃	VF 1)	0.45	0.47	V
		TA=100℃		0.39	—	
		TA=125℃		0.37	—	
	If=3.0A	TA=25℃		0.41	—	
		TA=100℃		0.35	—	
		TA=125℃		0.31	—	
Reverse current	VR=45V	TA=25℃	IR 2)	80	200	μ A
		TA=100℃		8	15	mA
		TA=125℃		20	50	
Typical junction capacitance	4V, 1MHz		CJ	370		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)	RθJA	60.0	℃/W
	RθJL	3.0	

3 Units mounted on recommended PCB 1 oz. Pad layout

## AVAILABALE 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)
SP5U45L-TO-277	T/R	φ 330	5000	338×338×40	2	365×365×360	7

# RATINGS AND CHARACTERISTIC OF SP5U45L

FIG.1-FORWARD CURRENT DERATING CURVE

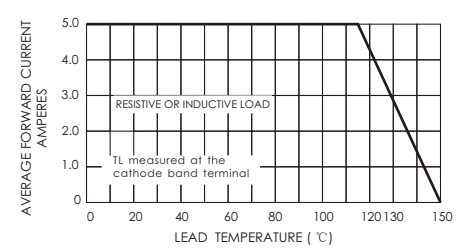


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

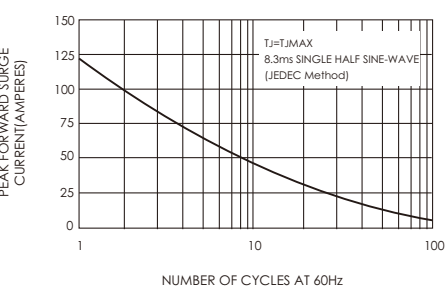


FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

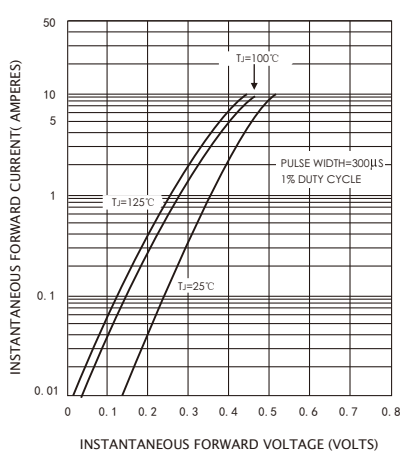


FIG.4-TYPICAL REVERSE CHARACTERISTICS

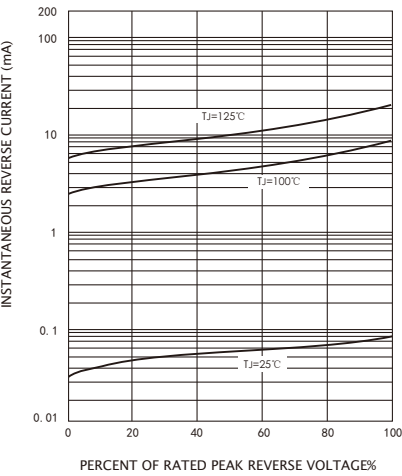


FIG.5-TYPICAL JUNCTION CAPACITANCE

