

## FEATURES

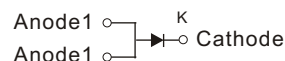
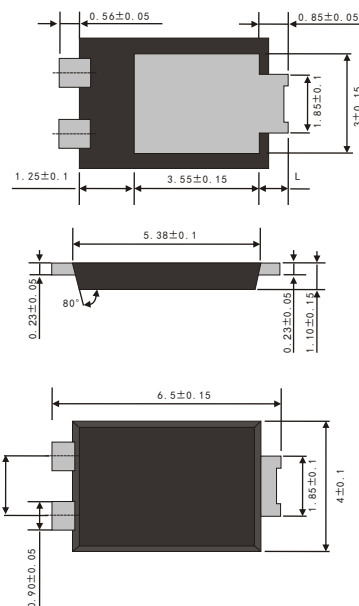
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Metal silicon junction ,majority carrier conduction
- Guard ring for overvoltage protection
- Low power loss ,high efficiency
- High current capability ,low forward voltage drop
- High surge capability
- Very low profile-typical 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



## 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)

## TO-277



Dimensions in inches and (millimeters)

## 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	SP10U45L-T	Unit
Minimum repetitive peak reverse voltage, I <sub>r</sub> =0.5mA	V <sub>RRM</sub>	48	V
Maximum average forward rectified current	I <sub>F(AV)</sub>	10.0	A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC method at rated TL)	I <sub>FSM</sub>	150	A
Operating junction temperature range	T <sub>J</sub>	-55 to +150	°C
Storage temperature range	T <sub>stg</sub>	-55 to +150	°C

## RATINGS AND CHARACTERISTIC OF SP10U45L-T

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

Parameter	Test Conditions		Symbol	TYP.	MAX.	Unit
Instaneous forward voltage	T <sub>J</sub> =25°C	I <sub>F</sub> =10A	V <sub>F</sub> <sup>1)</sup>	0.43	0.45	V
		I <sub>F</sub> =5A		0.38	—	
		I <sub>F</sub> =2A		0.33	—	
	T <sub>J</sub> =125°C	I <sub>F</sub> =10A		0.35	0.40	
		I <sub>F</sub> =5A		0.28	—	
		I <sub>F</sub> =2A		0.22	—	
Reverse current	V <sub>R</sub> =45V	T <sub>A</sub> =25°C	I <sub>R</sub> <sup>2)</sup>	60	150	μA
		T <sub>A</sub> =100°C		6	12	mA
		T <sub>A</sub> =125°C		20	50	
Typical junction capacitance	4V, 1MHz		C <sub>J</sub>	750		pF

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

2.Pulse test: pulse width≤40ms

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

Parameter	Symbol	SP10U45L-T	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

### AVAILABALE PACK INFORMATION

Product code	Pack	Box Size L*W*H(mm)	Quantity (pcs/box)	Carton SizeL*W*H(mm)	Quantity (box/carton)
SP10U45L-T-TO-277	T/B	340*340*50	10K	365*350*350	6

# RATINGS AND CHARACTERISTIC OF SP10U45L-T

FIG.1-FORWARD CURRENT DERATING CURVE

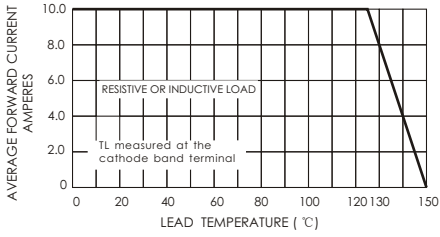


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

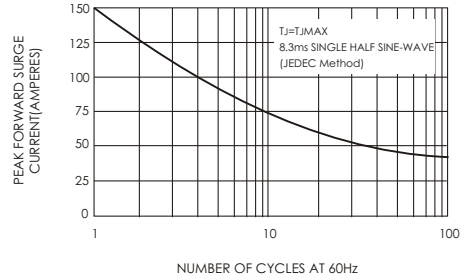


FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

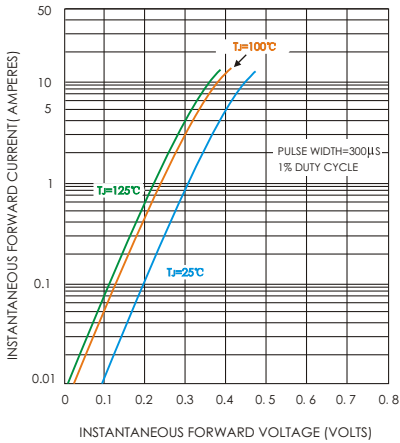


FIG.4-TYPICAL REVERSE CHARACTERISTICS

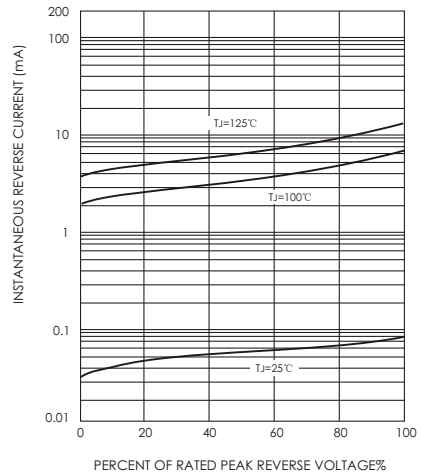


FIG.5-TYPICAL JUNCTION CAPACITANCE

