

### FEATURES

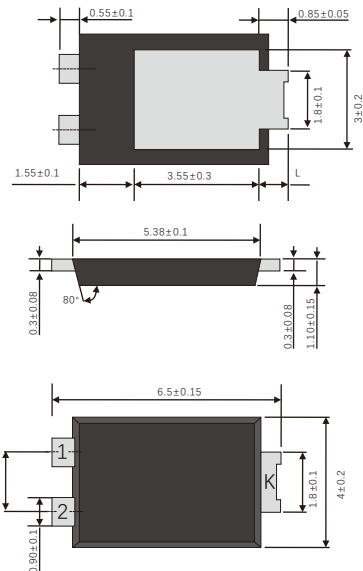
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Metal silicon junction ,majority carrier conduction
- Guard ring for overvoltage protection
- Low power loss ,high efficiency
- High current capability ,low forward voltage drop
- High surge capability
- Very low profile-typical height of 1.1mm
- Ideal for automated placement
- High temperature soldering guaranteed:260°C/10 seconds at terminals
- Component in accordance to RoHS 2015/863/EU



### MECHANICAL DATA

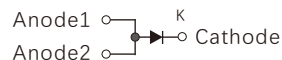
- Case: TO-277 molded plastic body
- Terminals: Plated axial leads, solderable per MIL-STD-750,method 2026
- Mounting Position: Any
- Weight: 0.092 grams(approx)

### TO-277



### 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

Parameter	Symbol	Value	Unit
Maximum repetitive peak reverse voltage	$V_{RRM}$	50	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)	$I_{FSM}$	150	A
Operating junction temperature range	$T_J$	-55 to+150	°C
Storage temperature range	$T_{stg}$	-55 to+150	°C

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

Parameter	Test Conditions		Symbol	Typ.	Max.	Unit
Instantaneous forward voltage	T <sub>J</sub> =25°C	I <sub>F</sub> =10A	V <sub>F</sub> <sup>1)</sup>	0.43	0.47	V
		I <sub>F</sub> =5A		0.37	-	
		I <sub>F</sub> =3A		0.35	-	
	T <sub>J</sub> =125°C	I <sub>F</sub> =10A		0.38	-	
		I <sub>F</sub> =5A		0.30	-	
		I <sub>F</sub> =3A		0.25	-	
Reverse current	V <sub>R</sub> =50V	T <sub>A</sub> =25°C	I <sub>R</sub> <sup>2)</sup>	80	200	μA
		T <sub>A</sub> =100°C		8	15	mA
		T <sub>A</sub> =125°C		20	50	
Typical junction capacitance	4V,1MHz		C <sub>j</sub>	1100		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> <sup>4)</sup>	60.0	°C/W
	R <sub>θJL</sub>	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/dt < 1/R<sub>θJA</sub>

## AVAILABLE 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)
SP10U50L- TO-277	Reel	370×370×360	338×338×39	φ330	7	2	5	70

# RATINGS AND CHARACTERISTIC OF SP10U50L

FIG.1-FORWARD CURRENT DERATING CURVE

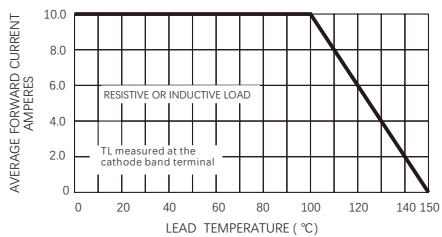


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

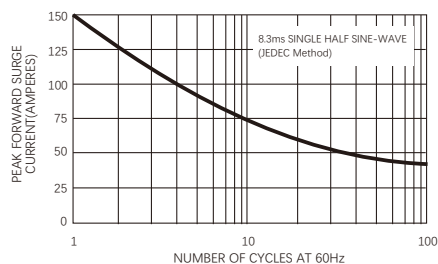


FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

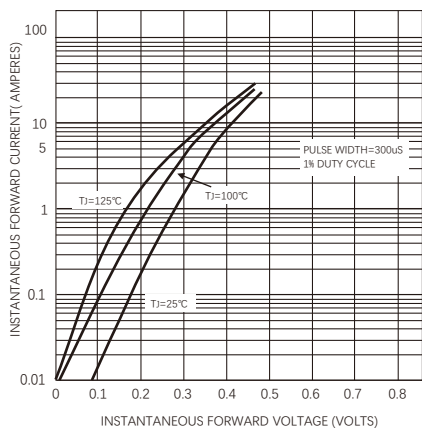


FIG.4-TYPICAL REVERSE CHARACTERISTICS

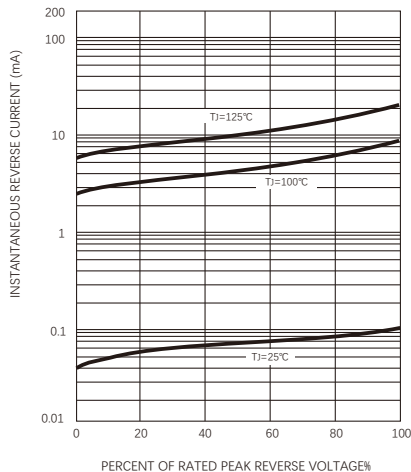
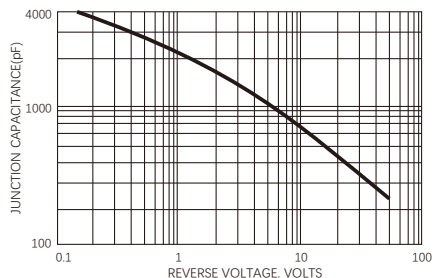


FIG.5-TYPICAL JUNCTION CAPACITANCE



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