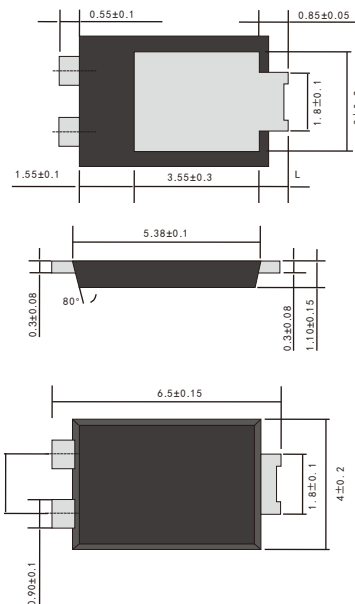


### FEATURES

- 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

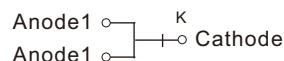


### MECHANICAL DATA

- 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	$V_{RRM}$	80	V
Maximum average forward rectified current	$I_{F(AV)}$	20.0	A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC method at rated TL)	$I_{FSM}$	200	A
Operating junction temperature range	$T_j$	-55 to +150	°C
Storage temperature range	$T_{stg}$	-55 to +150	°C

# RATINGS AND CHARACTERISTIC OF SP20U80L

## 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> =20A	V <sub>F</sub> <sup>1)</sup>	0.60	0.65	V
		I <sub>F</sub> =10A		0.50	–	
		I <sub>F</sub> =5A		0.42	–	
	T <sub>J</sub> =125°C	I <sub>F</sub> =20A		0.55	–	
		I <sub>F</sub> =10A		0.42	–	
		I <sub>F</sub> =5A		0.33	–	
Reverse current	V <sub>R</sub> =80V	T <sub>A</sub> =25°C	I <sub>R</sub> <sup>2)</sup>	50	100	μA
		T <sub>A</sub> =100°C		5	–	mA
		T <sub>A</sub> =125°C		20	–	
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

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<sub>D</sub>/dt<sub>J</sub> < 1/R<sub>θJA</sub>

## 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)
SP20U80L-TO-277	T/R	φ330	5000	338×338×40	2	365×365×360	7

# RATINGS AND CHARACTERISTIC OF SP20U80L

FIG.1-FORWARD CURRENT DERATING CURVE

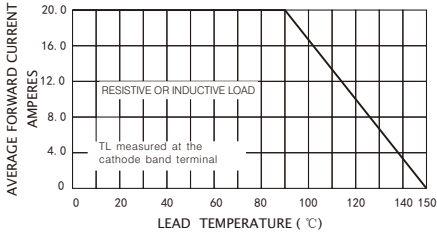


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

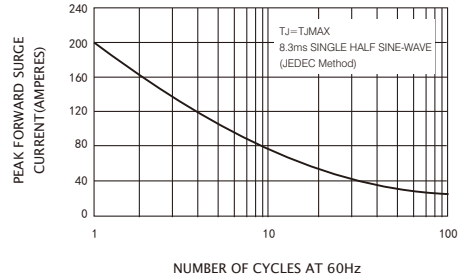


FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

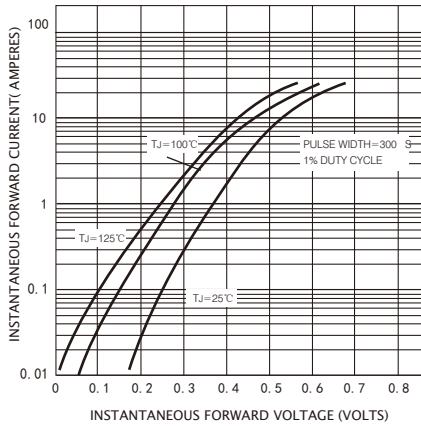


FIG.4-TYPICAL REVERSE CHARACTERISTICS

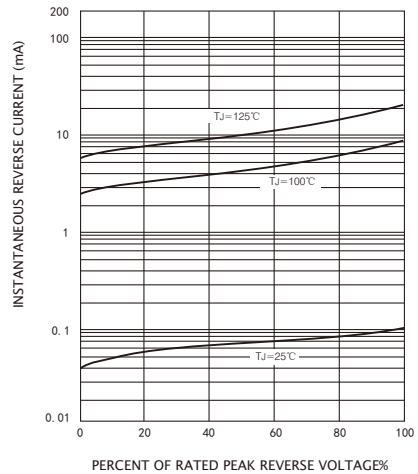


FIG.5-TYPICAL JUNCTION CAPACITANCE

