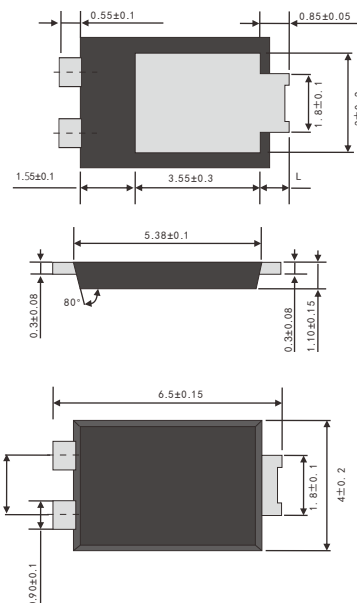


FEATURES

- 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

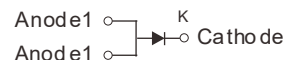


MECHANICAL DATA

- 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}	45	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 SP20U45L

ELECTRICAL CHARACTERISTICS ($T_A=25^{\circ}\text{C}$ Unless otherwise noted)

Parameter	Test Conditions		Symbol	TYP.	MAX.	Unit
Instaneous forward voltage	$T_J=25^{\circ}\text{C}$	$I_F=20\text{A}$	V_F ¹⁾	0.52	0.55	V
		$I_F=10\text{A}$		0.44	-	
		$I_F=5\text{A}$		0.39	-	
	$T_J=125^{\circ}\text{C}$	$I_F=20\text{A}$		0.50	-	
		$I_F=10\text{A}$		0.39	-	
		$I_F=5\text{A}$		0.31	-	
Reverse current	$V_R=45\text{V}$	$T_A=25^{\circ}\text{C}$	I_R ²⁾	100	200	μA
		$T_A=100^{\circ}\text{C}$		7	-	mA
		$T_A=125^{\circ}\text{C}$		30	-	
Typical junction capacitance	4V, 1MHz		CJ	6000		pF

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

2.Pulse test: pulse width $\leq 40\text{ms}$

THERMAL CHARACTERISTICS

Parameter	Symbol	TO-277	Unit
Typical thermal resistance ³⁾	$R_{\theta JA}$	60.0	$^{\circ}\text{C}/\text{W}$
	$R_{\theta JL}$	3.0	

3 Units mounted on recommended PCB 1 oz. Pad layout

AVAILABALE 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)
SP20U45L- TO-277	Reel	370×370×360	338×338×39	$\phi 330$	7	2	5	70

RATINGS AND CHARACTERISTIC OF SP20U45L

FIG.1-FORWARD CURRENT DERATING CURVE

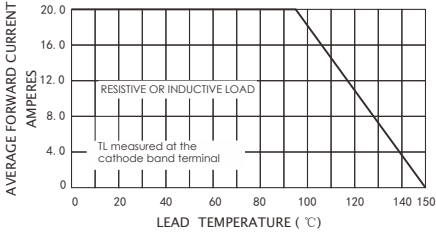


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

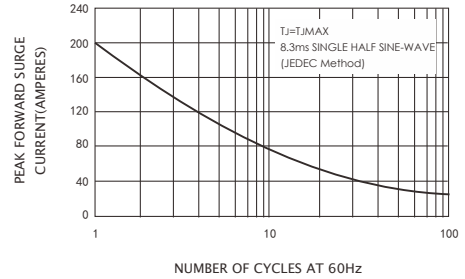


FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

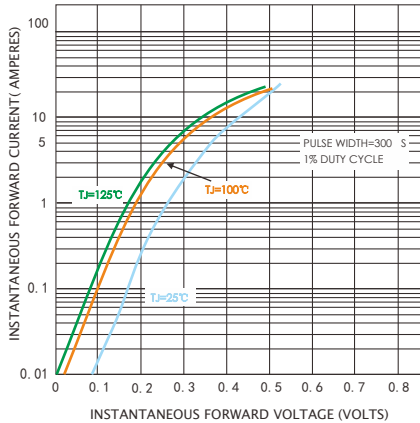


FIG.4-TYPICAL REVERSE CHARACTERISTICS

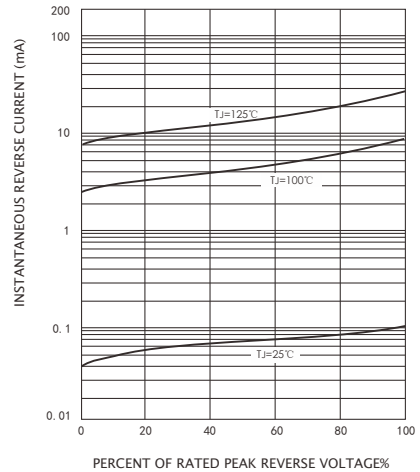


FIG.5-TYPICAL JUNCTION CAPACITANCE

