

## LOW VF SCHOTTKY BARRIER RECTIFIER

 Reverse Voltage - 100 Volts  
 Forward Current - 20.0Amperes

## FEATURES

- Power pack
- Metal silicon junction ,majority carrier conduction
- Guard ring for overvoltage protection
- Low power loss ,high efficiency
- High current capability ,low forward voltage drop
- High forward surge capability
- High frequency operation
- Meets MSL Level 1, per J-STD-020, LF MAX peak of 245
- Solder bath temperature 275°C maximum, 10s, per JESD22-B106
- Component in accordance to RoHS 2011/65/EU

## MECHANICAL DATA

- Molding compound meets UL94V-0 flammability rating
- Terminals: Lead solderable per J-STD-002 and JESD22-B102
- Polarity: As marked
- Mounting Torque: 10 in-lbs maximum

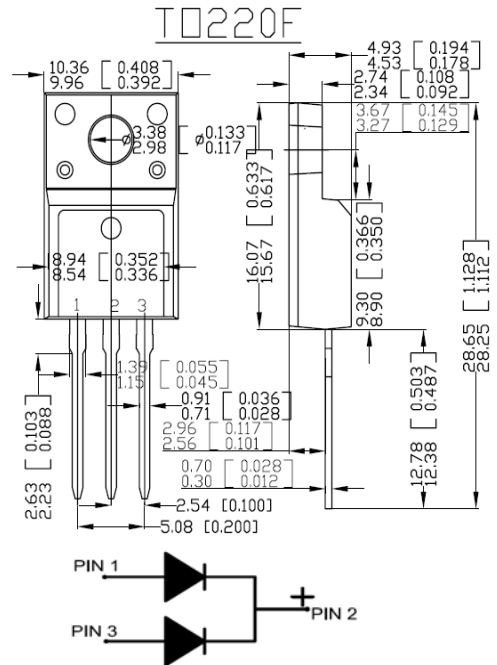
## TYPICAL APPLICATIONS

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	SB20100LCT	Unit
Maximum repetitive peak reverse voltage	$V_{RRM}$	100	V
Maximum average forward rectified current (see fig.1)	Per leg	10.0	A
	Total device	20.0	
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC method at rated TL)	$I_{FSM}$	200	A
Peak repetitive reverse current per diode at $t_p=2\mu s$ 1KHz	$I_{RRM}$	0.5	A
Operating junction and Storage temperature range	$T_J, T_{stg}$	-55 to +150	°C
Isolation voltage (ITO-220F only) from terminals to heatsink $t=1$ min	$V_{AC}$	1500	V



## Dimensions in millimeters and (inches)

PRIMARY CHARACTERISTICS	
$I_F(AV)$	2×10A
$V_{RRM}$	100V
$I_{FSM}$	200A
$V_F$ at $I_F=10.0A(25^\circ C)$	0.66V
$I_r$	20 $\mu A$
$T_J(MAX)$	150°C
Package	TO-220F TO-220AB

## RATINGS AND CHARACTERISTIC OF SB20100L

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

Parameter	Test Conditions		Symbol	TYP.	MAX.	Unit
Instantaneous forward voltage	Per leg $I_F=10.0\text{A}$	$T_A=25^\circ\text{C}$	$V_F$ <sup>1)</sup>	0.66	0.70	V
		$T_A=100^\circ\text{C}$		0.64	–	
		$T_A=125^\circ\text{C}$		0.63	–	
	Per leg $I_F=5.0\text{A}$	$T_A=25^\circ\text{C}$		0.53	0.57	
		$T_A=100^\circ\text{C}$		0.51	–	
		$T_A=125^\circ\text{C}$		0.50	–	
Reverse current	$V_R=100\text{V}$	$T_A=25^\circ\text{C}$	$I_R$ <sup>2)</sup>	20	50	$\mu\text{A}$
		$T_A=100^\circ\text{C}$		2	5	mA
		$T_A=125^\circ\text{C}$		10	20	
Typical junction capacitance	4V, 1MHz		$C_J$	570		pF

Notes: 1.Pulse test: 300  $\mu\text{s}$  pulse width, 1% duty cycle

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

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

Parameter	Symbol		SB20100LCT		Unit
Typical thermal resistance <sup>3)</sup>	$R_{\theta JC}$		4.5		$^\circ\text{C}/\text{W}$

# RATINGS AND CHARACTERISTIC OF SB20100L

FIG.1-FORWARD CURRENT DERATING CURVE

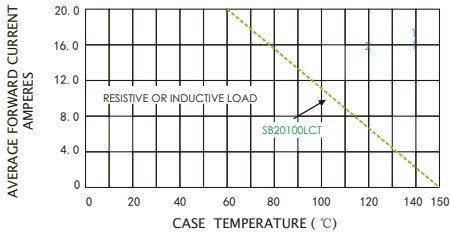


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

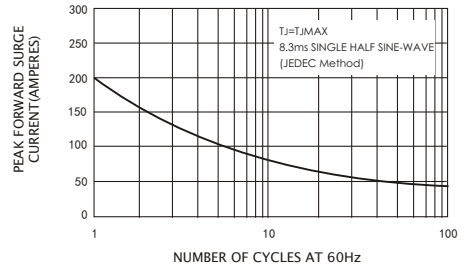


FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

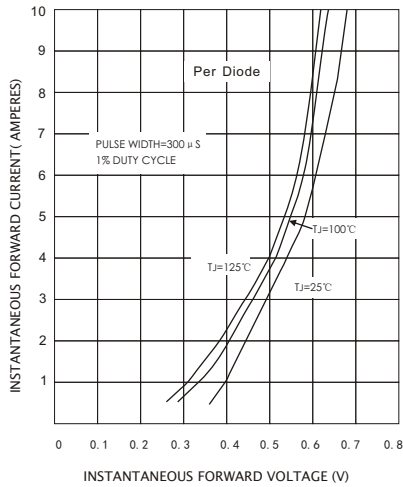


FIG.4-TYPICAL REVERSE CHARACTERISTICS

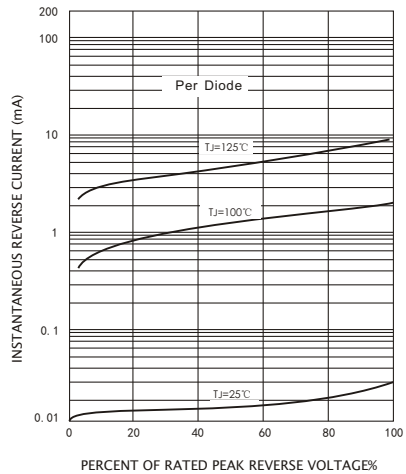
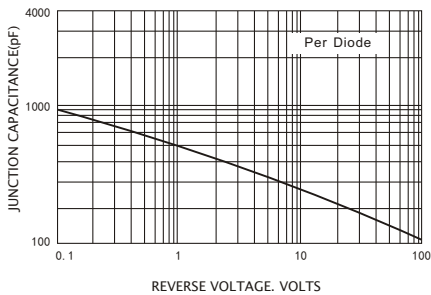


FIG.5-TYPICAL JUNCTION CAPACITANCE



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