

### FEATURES

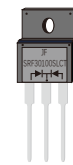
- Power pack
- Metal silicon junction ,majority carrier conduction
- Guard ring for overvoltage protection
- Low power loss ,high efficiency
- High current capability ,low forward voltage drop
- High forward surge capability
- High frequency operation
- Meets MSL Level 1, per J-STD-020,LF MAX peak of 260°C (for TO-263 package)
- Solder bath temperature 275°C maximum, 10s, per JESD22-B106 (for TO-220AB and ITO-220AB package)
- Component in accordance to RoHS 2015/863/EU



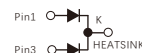
TO-220AB  
SR30100SLCT



ITO-220AB  
SRF30100SLCT



TO-263  
SR30100SLD1



### MECHANICAL DATA

- Case: JEDEC TO-220AB、ITO-220AB、TO-263
- 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	Value	Unit
Maximum repetitive peak reverse voltage	$V_{RRM}$	100	V
Maximum average forward rectified current,D=0.5, Square waveform, $T_c \leq 136^\circ\text{C}$ for TO-220AB and TO-263, $T_c \leq 105^\circ\text{C}$ for ITO-220AB (see Fig.1)	Per leg	15.0	A
	Total device	30.0	
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC method at rated TL,Total Device)	$I_{FSM}$	350	A
Peak repetitive reverse current per diode at $t_p=2\mu\text{s}$ 1KHz	$I_{RRM}$	0.5	A
Operating junction and Storage temperature range	$T_j, T_{stg}$	-55 to+150	$^\circ\text{C}$
Isolation voltage(ITO-220AB only)from terminals to heatsink $t=1$ min	$V_{AC}$	1500	V

PRIMARY CHARACTERISTICS	
$I_F(AV)$	2×15A
$V_{RRM}$	100V
$I_{FSM}$	350A
$V_f$ at $I_f=5.0A$ ,Per leg, $125^\circ\text{C}$	0.42V
$I_r$	20 $\mu\text{A}$
$T_j(MAX)$	150 $^\circ\text{C}$
Package	TO-220AB, ITO-220AB, TO-263
Diode variations	Common cathode

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

Parameter	Test Conditions		Symbol	Typ.	Max.	Unit
Instantaneous forward voltage	$I_F=15.0\text{A}$	$T_A=25^{\circ}\text{C}$	$V_F$ <sup>1)</sup>	0.66	0.69	V
		$T_A=100^{\circ}\text{C}$		0.64	-	
		$T_A=125^{\circ}\text{C}$		0.63	-	
	$I_F=5.0\text{A}$	$T_A=25^{\circ}\text{C}$		0.48	0.50	
		$T_A=100^{\circ}\text{C}$		0.43	-	
		$T_A=125^{\circ}\text{C}$		0.42	-	
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
		$T_A=125^{\circ}\text{C}$		8	20	
Typical junction capacitance	4V,1MHz		$C_j$	970		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

Parameter	Symbol	SR30100SLCT	SRF30100SLCT	SR30100SLD1	Unit
Typical thermal resistance <sup>3)</sup>	$R_{\theta\text{JC}}$	1.0	3.2	1.0	$^{\circ}\text{C}/\text{W}$

3.Thermal resistance from junction to case,Total device

AVAILABLE PACK INFORMATION

Product code	Pack	Carton Size L×W×H(mm)	Inner Box Size L×W×H(mm)	Tube Length (mm)	Inner Box Number	Tube Number Per A Inner Box	Part Number Per A Tube	Quantity(carton) (K)
SR30100SLCT-TO-220AB	Tube	565×225×170	548×151×37	540	5	20	50	5
SRF30100SLCT-ITO-220AB	Tube	565×225×170	548×151×37	540	5	20	50	5
SR30100SLD1-TO-263	Tube	565×225×170	548×151×37	538	5	20	50	5
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	Quantity(carton) (K)
SR30100SLD1-TO-263	Reel	364×364×235	330×330×38	$\phi 330$	5	1	800	4

FIG.1-FORWARD CURRENT DERATING CURVE

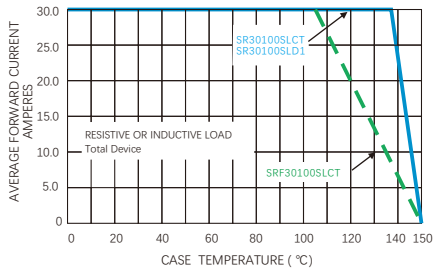


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

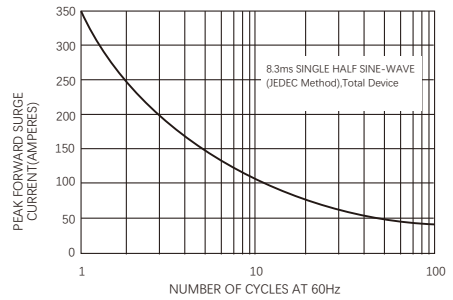


FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

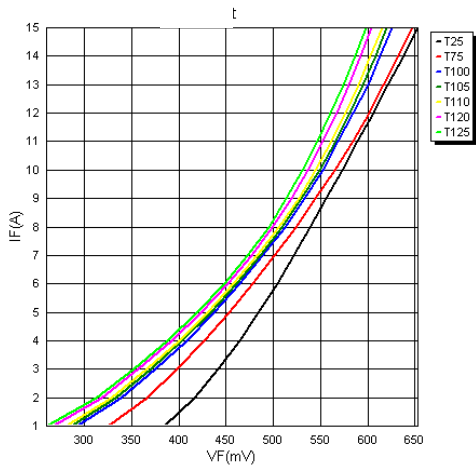


FIG.4-TYPICAL REVERSE CHARACTERISTICS

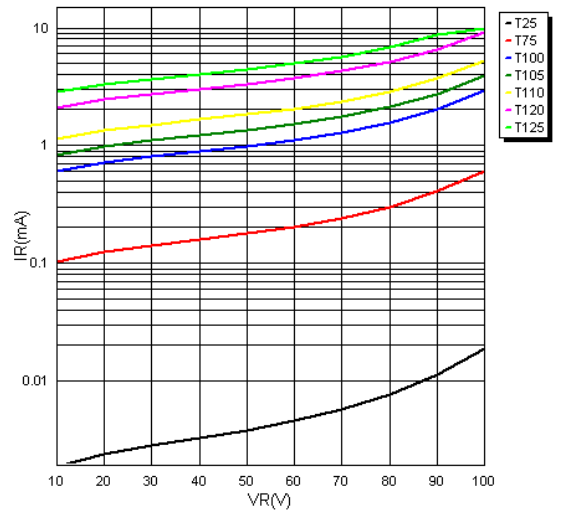
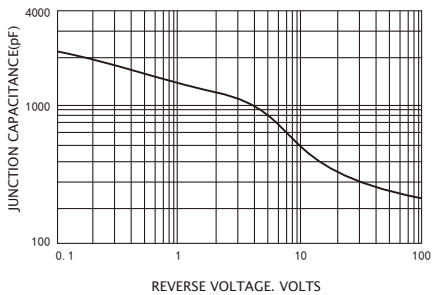
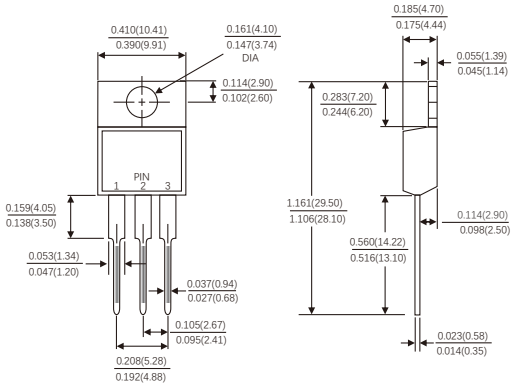


FIG.5-TYPICAL JUNCTION CAPACITANCE

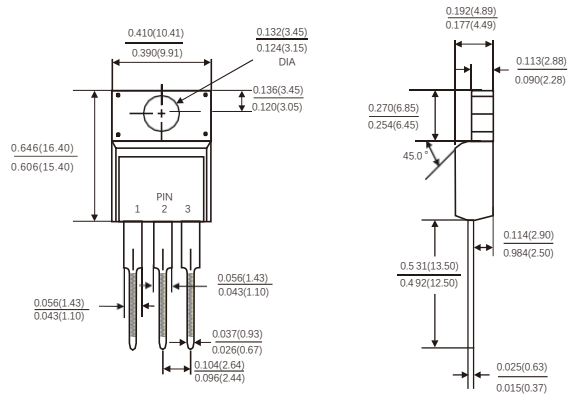


Dimensions in inches and (millimeters)

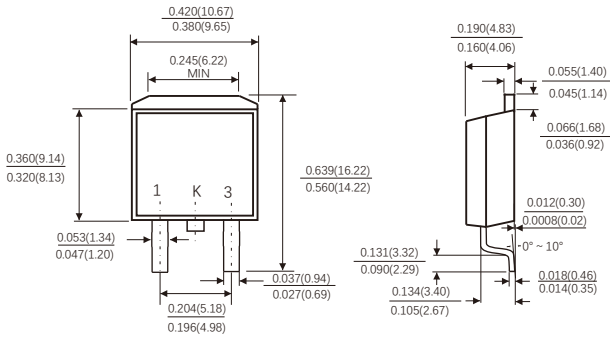
## TO-220AB



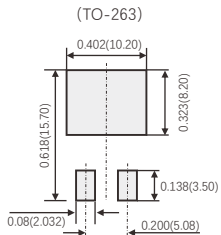
## ITO-220AB



## TO-263



## Suggested Pad Layout



(设计者可参考推荐值根据焊接工艺要求自行确定适合的焊盘尺寸)  
(Designers can refer to the recommended values according to the manufacturing process requirements to determine the appropriate pad size)

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