

### 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



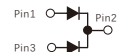
TO-220AB

SR3045LCT



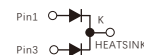
ITO-220AB

SRF3045LCT



TO-263

SR3045LD1



### 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	$V_{RRM}$	45	V
Maximum average forward rectified current,D=0.5, Square waveform,Tc≤137°C for TO-220AB and TO-263, Tc≤108°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	$I_{FSM}$	300	A
Peak repetitive reverse current per diode at tp=2μs 1KHz	$I_{RRM}$	0.5	A
Operating junction and Storage temperature range	$T_J, T_{stg}$	-55 to +150	°C
Isolation voltage(ITO-220AB only)from terminals to heatsink t=1 min	$V_{AC}$	1500	V

#### PRIMARY CHARACTERISTICS

$I_{FAV}$	2×15A
$V_{RRM}$	45V
$I_{FSM}$	300A
$V_f$ at $I_f=15.0A, 125^\circ C$ Per leg	0.41V
$I_{R,typ}$	80μA
$T_{JMAX}$	150°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>	0.49	0.52	V
		$T_A=100^{\circ}\text{C}$		0.43	-	
		$T_A=125^{\circ}\text{C}$		0.41	-	
	$I_f=10.0\text{A}$	$T_A=25^{\circ}\text{C}$		0.43	0.45	
		$T_A=100^{\circ}\text{C}$		0.37	-	
		$T_A=125^{\circ}\text{C}$		0.35	-	
Reverse current	$V_R=45\text{V}$	$T_A=25^{\circ}\text{C}$	$I_R$ <sup>2)</sup>	100	200	$\mu\text{A}$
		$T_A=100^{\circ}\text{C}$		8	15	mA
		$T_A=125^{\circ}\text{C}$		20	50	
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

Parameter	Symbol	SR3045LCT	SRF3045LCT	SR3045LD1	Unit
Typical thermal resistance <sup>3)</sup>	$R_{\theta jc}$	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)
SR3045LCT-TO-220AB	Tube	565×225×170	548×151×37	540	5	20	50	5
SRF3045LCT-ITO-220AB	Tube	565×225×170	548×151×37	540	5	20	50	5
SR3045LD1-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)
SR3045LD1-TO-263	Reel	364×364×235	330×330×38	$\phi 330$	5	1	800	4

FIG.1-FORWARD CURRENT DERATING CURVE

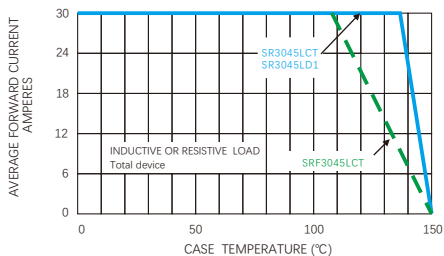


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

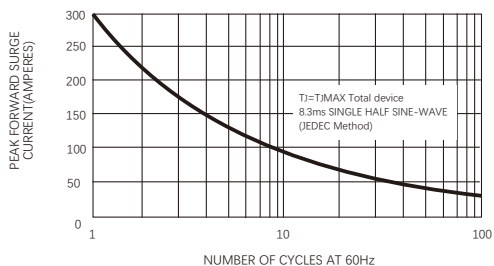


FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

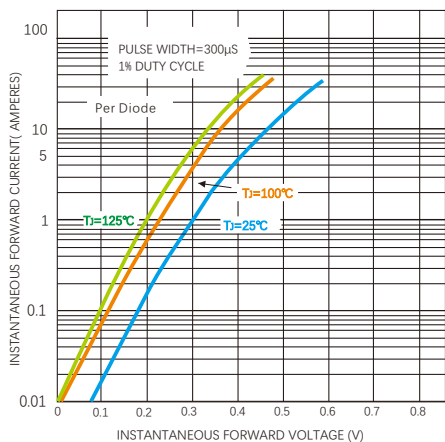


FIG.4-TYPICAL REVERSE CHARACTERISTICS

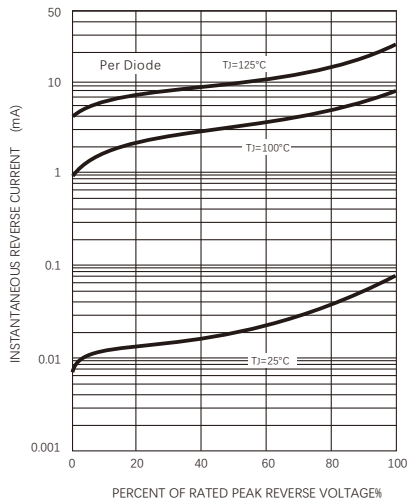
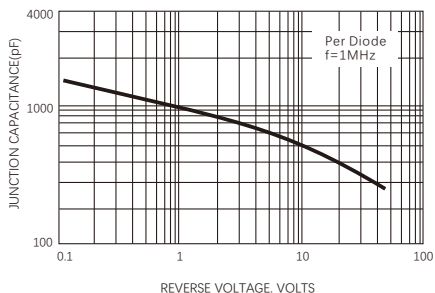
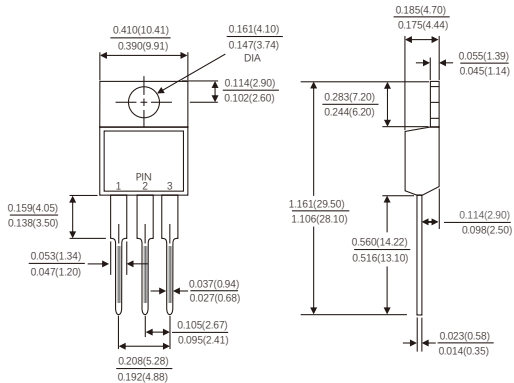


FIG.5-TYPICAL JUNCTION CAPACITANCE

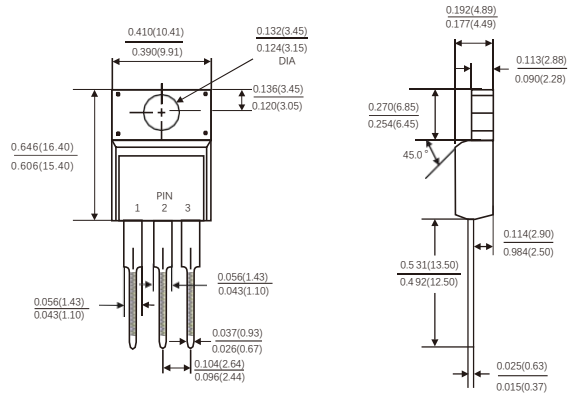


Dimensions in inches and (millimeters)

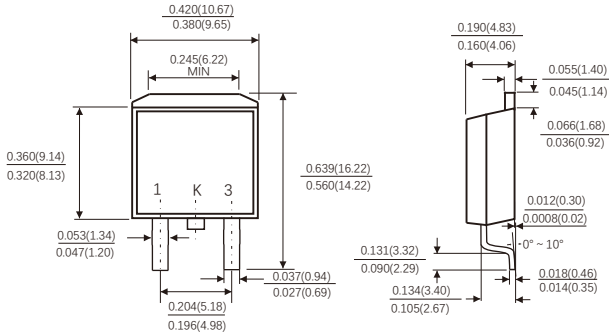
## TO-220AB



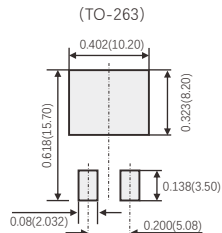
## ITO-220AB



## 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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