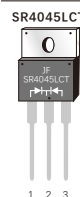


FEATURES

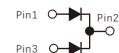
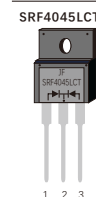
- Power pack
- Metal silicon junction ,majority carrier conduction
- Guard ring for overvoltage protection
- Low power loss ,high efficiency
- High current capability ,low forward voltage drop
- High forward surge capability
- High frequency operation
- Per J-STD-020,LF MAX peak of 260°C (for TO-263 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



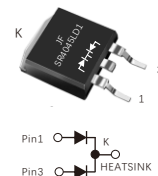
TO-220AB



ITO-220AB



TO-263
SR4045LD1



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 (see fig.1)	Per leg	$I_F(AV)$	20.0	A
	Total device		40.0	
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC method at rated TL)		I_{FSM}	350	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-220AB only)from terminals to heatsink $t=1$ min		V_{AC}	1500	V

PRIMARY CHARACTERISTICS

$I_F(AV)$	2×20A
V_{RRM}	45V
I_{FSM}	350A
V_f at $I_F=20.0A, 125^\circ C$ Per leg	0.46V
I_R	50μA
$T_J(MAX)$	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	$I_F=20.0\text{A}$	$T_J=25^{\circ}\text{C}$	V_F ¹⁾	0.50	0.55	V
		$T_J=100^{\circ}\text{C}$		0.47	—	
		$T_J=125^{\circ}\text{C}$		0.46	—	
	$I_F=10.0\text{A}$	$T_J=25^{\circ}\text{C}$		0.45	—	
		$T_J=100^{\circ}\text{C}$		0.36	—	
		$T_J=125^{\circ}\text{C}$		0.35	—	
Reverse current	$V_R=45\text{V}$	$T_J=25^{\circ}\text{C}$	I_R ²⁾	—	200	μA
		$T_J=100^{\circ}\text{C}$		—	15	mA
		$T_J=125^{\circ}\text{C}$		—	60	
Typical junction capacitance	4V, 1MHz		C_J	930		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	SR4045LCT	SRF4045LCT	SR4045LD1	Unit
Typical thermal resistance ³⁾	$R_{\theta JC}$	0.8	3.2	0.8	$^{\circ}\text{C/W}$

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)
SR4045LCT-TO-220AB	Tube	565×225×170	548×151×37	540	5	20	50	5
SRF4045LCT-ITO-220AB	Tube	565×225×170	548×151×37	540	5	20	50	5
SR4045LD1-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)
SR4045LD1-TO-263	Reel	364×364×235	330×330×38	$\phi 330$	5	1	800	4

FIG.1-FORWARD CURRENT DERATING CURVE

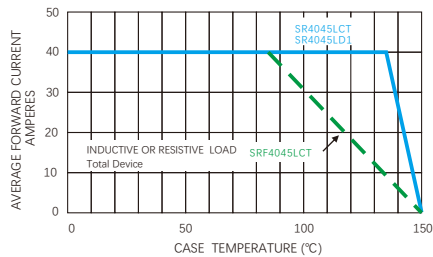


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

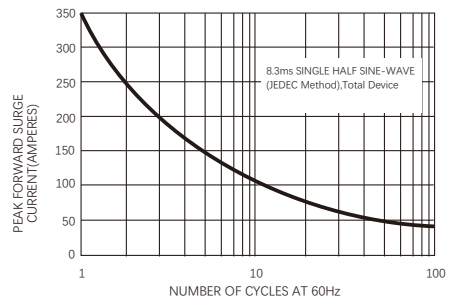


FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

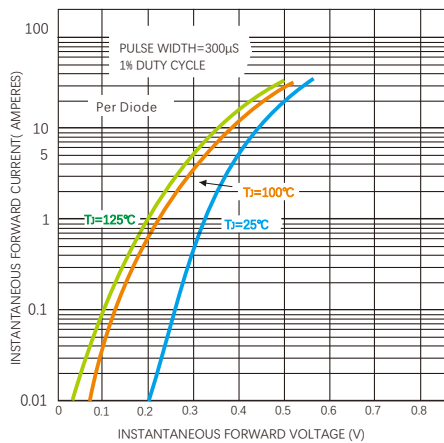


FIG.4-TYPICAL REVERSE CHARACTERISTICS

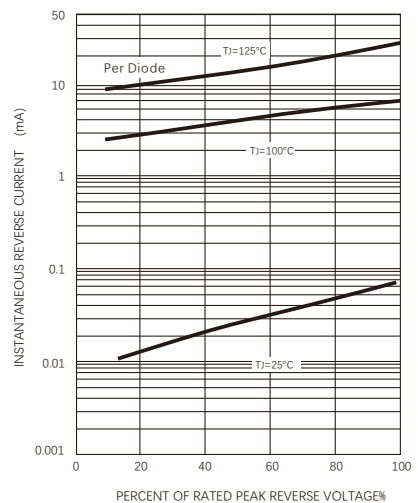
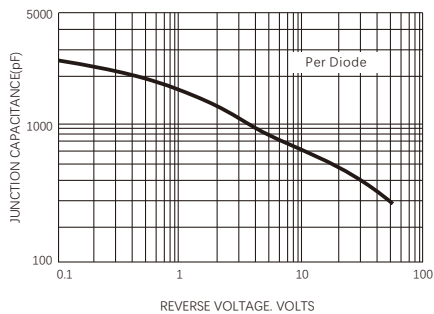


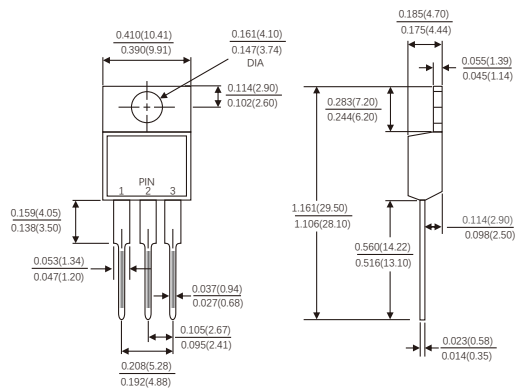
FIG.5-TYPICAL JUNCTION CAPACITANCE



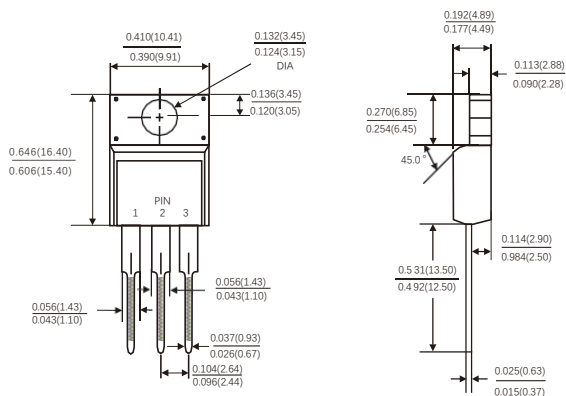
PACKAGE OUTLINE DIMENSIONS

Dimensions in inches and (millimeters)

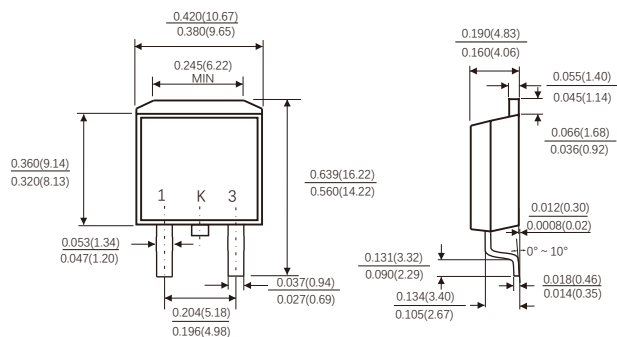
TO-220AB



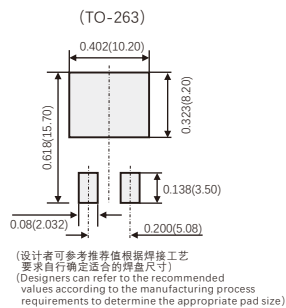
ITO-220AB



TO-263



Suggested Pad Layout



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