

FEATURES

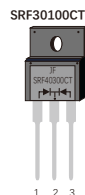
- Power pack
- Metal silicon junction ,majority carrier conduction
- Guard ring for overvoltage protection
- Low power loss ,high efficiency
- High current capability ,low forward voltage drop
- High forward surge capability
- High frequency operation
- Per J-STD-020,LF MAX peak of 260°C (for TO-263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



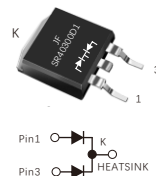
TO-220AB



ITO-220AB



TO-263
SR40300D1



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}	300	V
Maximum average forward rectified current (see fig.1)	$I_{F(AV)}$	20.0	A
		40.0	
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
Operating junction and Storage temperature range	T_J, T_{stg}	-55 to +150	°C

PRIMARY CHARACTERISTICS

$I_r(AV)$	2×20A
V_{RRM}	300V
I_{FSM}	350A
V_f at $I_r=20.0A, 25^\circ C$ Per leg	0.90V
I_r	0.2μA
$T_J(MAX)$	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	$I_F=20.0\text{A}$	$T_A=25^{\circ}\text{C}$	V_F 1)	0.90	0.975	V
		$T_A=100^{\circ}\text{C}$		0.79	-	
		$T_A=125^{\circ}\text{C}$		0.76	-	
	$I_F=5.0\text{A}$	$T_A=25^{\circ}\text{C}$		0.75	-	
		$T_A=100^{\circ}\text{C}$		0.65	-	
		$T_A=125^{\circ}\text{C}$		0.61	-	
Reverse current	$V_R=300\text{V}$	$T_A=25^{\circ}\text{C}$	I_R 2)	0.2	5.0	μA
		$T_A=100^{\circ}\text{C}$		-	0.5	mA
		$T_A=125^{\circ}\text{C}$		-	1.5	
Typical junction capacitance	4V,1MHz		C_j	210		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	SR40300CT	SRF40300CT	SR40300D1	Unit
Typical thermal resistance ³⁾	$R_{\theta jc}$	0.9	2.0	0.9	$^{\circ}\text{C/W}$

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)
SR40300CT-TO-220AB	Tube	565×225×170	548×151×37	540	5	20	50	5
SRF40300CT-ITO-220AB	Tube	565×225×170	548×151×37	540	5	20	50	5
SR40300D1-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)
SR40300D1-TO-263	Reel	364×364×235	330×330×38	$\phi 330$	5	1	800	4

FIG.1-FORWARD CURRENT DERATING CURVE

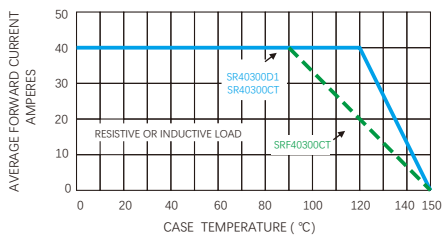


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

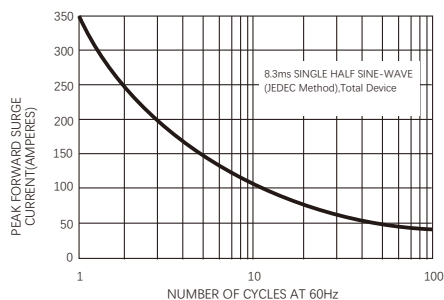


FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

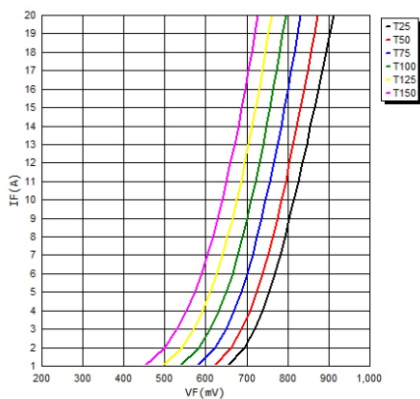


FIG.4-TYPICAL REVERSE CHARACTERISTICS

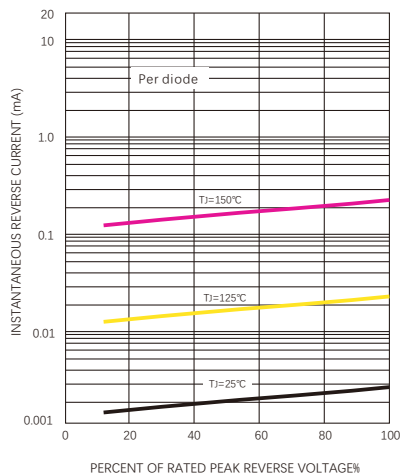
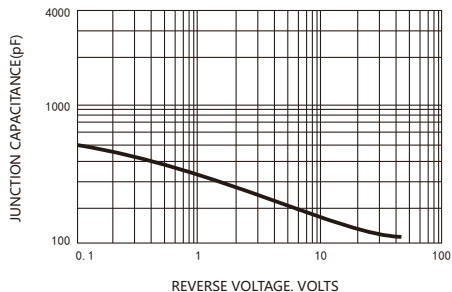


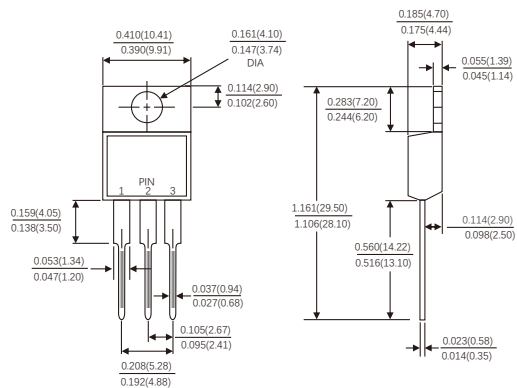
FIG.5-TYPICAL JUNCTION CAPACITANCE



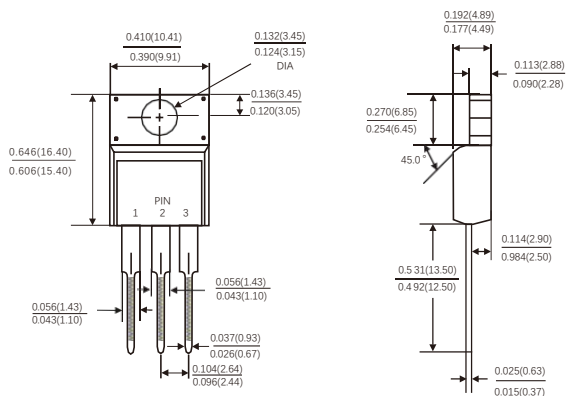
PACKAGE OUTLINE DIMENSIONS

Dimensions in inches and (millimeters)

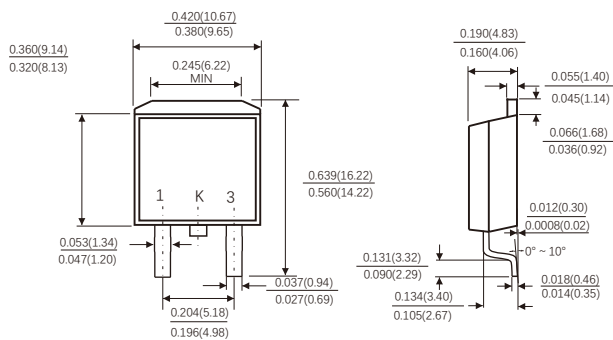
TO-220AB



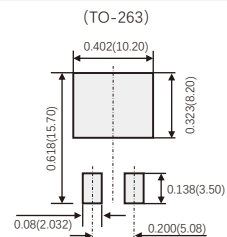
ITO-220AB



TO-263



Suggested Pad Layout



(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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