

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
- AEC-Q101 qualified and PPAP capable



RoHS
COMPLIANT



AEC-Q101 Qualified

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)

PRIMARY CHARACTERISTICS	
$I_F(AV)$	2×30A
V_{RRM}	100V
I_{FSM}	300A
V_F at $I_F=30.0A$,Per leg	0.84V
I_R	0.8μA
$T_J(MAX)$	150°C
Package	TO-220AB, ITO-220AB, TO-263
Diode variations	Common cathode

Parameter		Symbol	Value	Unit
Maximum repetitive peak reverse voltage		V_{RRM}	100	V
Maximum average forward rectified current (see fig.1)	Per leg	$I_F(AV)$	30.0	A
	Total device		60.0	
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC method at rated T_L) Per Leg		I_{FSM}	300	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

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

Parameter	Test Conditions		Symbol	Typ.	Max.	Unit
Instantaneous forward voltage	$I_F=30.0\text{A}$	$T_A=25^{\circ}\text{C}$	V_F ¹⁾	0.84	0.88	V
		$T_A=100^{\circ}\text{C}$		0.74	-	
		$T_A=125^{\circ}\text{C}$		0.70	-	
	$I_F=5.0\text{A}$	$T_A=25^{\circ}\text{C}$		0.62	-	
		$T_A=100^{\circ}\text{C}$		0.53	-	
		$T_A=125^{\circ}\text{C}$		0.50	-	
Reverse current	$V_R=100\text{V}$	$T_A=25^{\circ}\text{C}$	I_R ²⁾	-	5.0	μA
		$T_A=100^{\circ}\text{C}$		-	2.0	mA
		$T_A=125^{\circ}\text{C}$		-	5.5	
Typical junction capacitance	4V,1MHz		C_j	620		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	SR60100CT-V	SRF60100CT-V	SR60100D1-V	Unit
Typical thermal resistance ³⁾	$R_{\theta JC}$	0.8	2.8	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)
SR60100CT-V -TO-220AB	Tube	565×225×170	548×151×37	540	5	20	50	5
SRF60100CT-V -ITO-220AB	Tube	565×225×170	548×151×37	540	5	20	50	5
SR60100D1-V -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)
SR60100D1-V -TO-263	Reel	364×364×235	330×330×38	$\phi 330$	5	1	800	4

FIG.1-FORWARD CURRENT DERATING CURVE

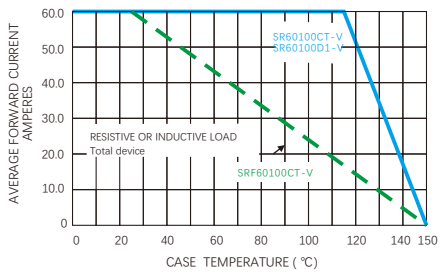


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

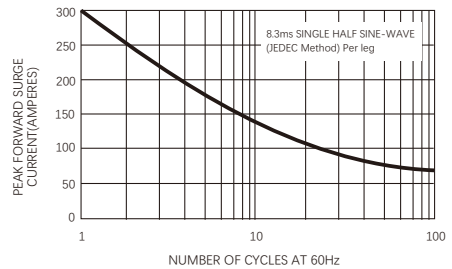


FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS (Per Leg)

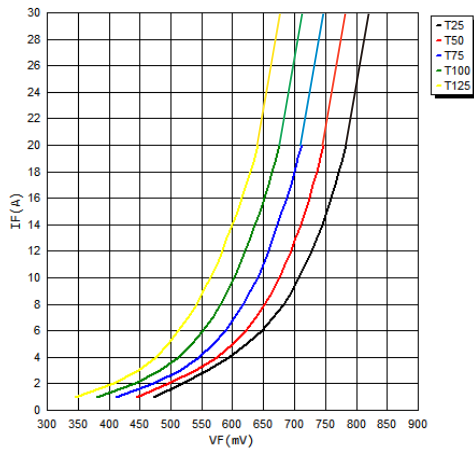


FIG.4-TYPICAL REVERSE CHARACTERISTICS (Per Leg)

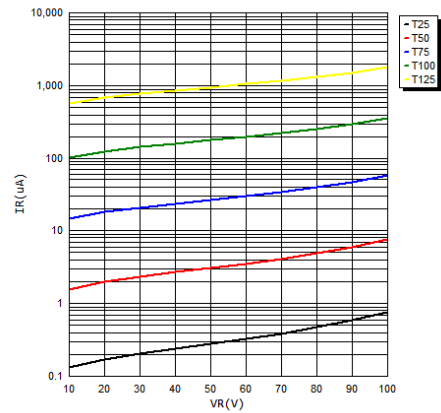
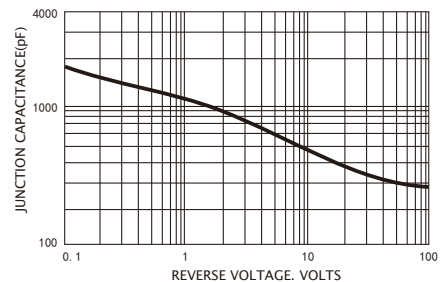


FIG.5-TYPICAL JUNCTION CAPACITANCE (Per Leg)

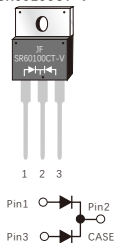


PACKAGE OUTLINE DIMENSIONS

Dimensions in inches and (millimeters)

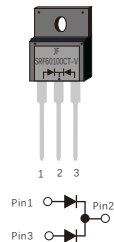
TO-220AB

SR60100CT-V

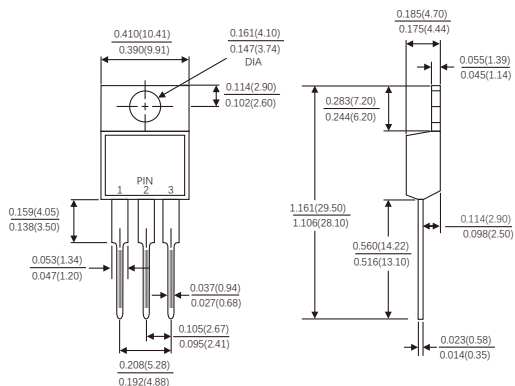


ITO-220AB

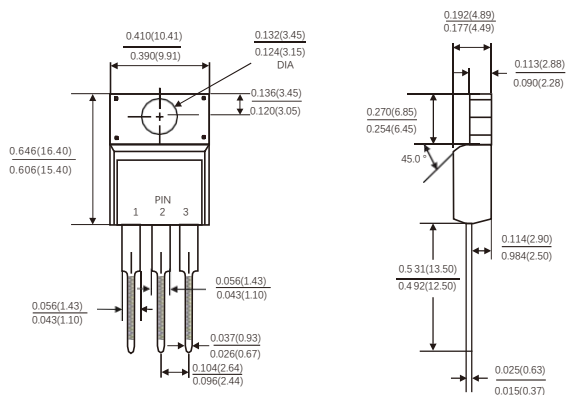
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TO-220AB

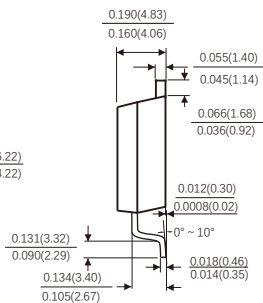
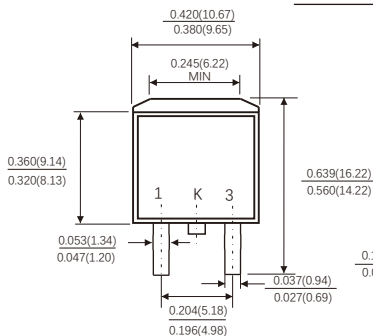
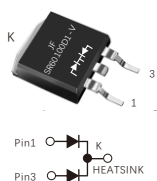


ITO-220AB

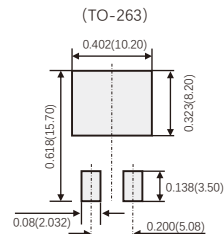


TO-263

TO-263
SR60100D1-V



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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