

FEATURES

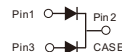
- Power pack
- Metal silicon junction ,majority carrier conduction
- Guard ring for overvoltage protection
- Low power loss ,high efficiency
- High current capability ,low forward voltage drop
- High forward surge capability
- High frequency operation
- Meets MSL Level 1, per J-STD-020, LF MAX peak of 245°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 2011/65/EU



TO-220AB



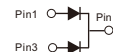
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ITO-220AB

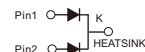


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TO-263

SR20120LD1



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	SR20120LCT,SRF20120LCT,SR20120LD1	Unit
Maximum repetitive peak reverse voltage	V_{RRM}	120	V
Maximum average forward rectified current (see fig.1)	Per leg	10.0	A
	Total device	20.0	
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC method at rated TL)	I_{FSM}	200	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	
$I_F(AV)$	2×10A
V_{RRM}	120V
I_{FSM}	200A
V_f at $I_f=10.0A$,Per leg,25°C	0.82V
I_r	12 μ A
$T_J(MAX)$	150°C
Package	TO-220AB,ITO-220AB, TO-263
Diode variations	Common cathode

RATINGS AND CHARACTERISTIC OF SR20120LCT,SRF20120LCT,SR20120LD1

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

Parameter	Test Conditions		Symbol	TYP.	MAX.	Unit
Instaneous forward voltage	Per leg $I_F=10.0\text{A}$	$T_A=25^{\circ}\text{C}$	V_F ¹⁾	0.82	0.85	V
		$T_A=100^{\circ}\text{C}$		0.69	-	
		$T_A=125^{\circ}\text{C}$		0.65	-	
	Per leg $I_F=5.0\text{A}$	$T_A=25^{\circ}\text{C}$		0.65	-	
		$T_A=100^{\circ}\text{C}$		0.58	-	
		$T_A=125^{\circ}\text{C}$		0.55	-	
Reverse current	$V_R=120\text{V}$	$T_A=25^{\circ}\text{C}$	I_R ²⁾	12	50	μA
		$T_A=100^{\circ}\text{C}$		2.5	-	mA
		$T_A=125^{\circ}\text{C}$		10	-	
Typical junction capacitance	4V,1MHz		C_J	400		pF

Notes: 1.Pulse test: 300 μs pulse width,1% duty cycle

2.Pulse test: pulse width \leq 40ms

THERMAL CHARACTERISTICS ($T_A=25^{\circ}\text{C}$ Unless otherwise noted)

Parameter	Symbol	SR20120LCT	SRF20120LCT	SR20120LD1	Unit
Typical thermal resistance ³⁾	$R_{\theta JC}$	2.5	4.5	2.5	$^{\circ}\text{C}/\text{W}$

3.Thermal resistance from junction to case

AVAILABALE PACK INFORMATION

Product code	Pack	Box Size L×W×H(mm)	Quantity (pcs/box)	Carton SizeL×W×H(mm)	Quantity (box/carton)
SR20120LCT-TO-220AB	P/T	558×148×38	1000	565×225×170	5
SRF20120LCT-ITO-220AB	P/T	558×148×38	1000	565×225×170	5
SR20120LD1-TO-263	P/T	558×148×38	1000	565×225×170	5

RATINGS AND CHARACTERISTIC OF SR20120LCT,SRF20120LCT,SR20120LD1

FIG.1-FORWARD CURRENT DERATING CURVE

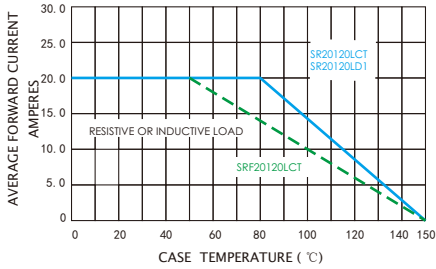


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

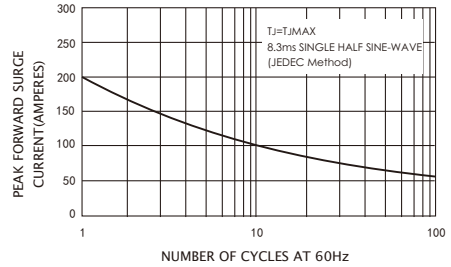


FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

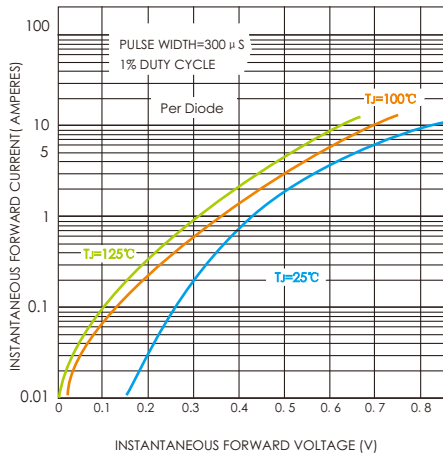


FIG.4-TYPICAL REVERSE CHARACTERISTICS

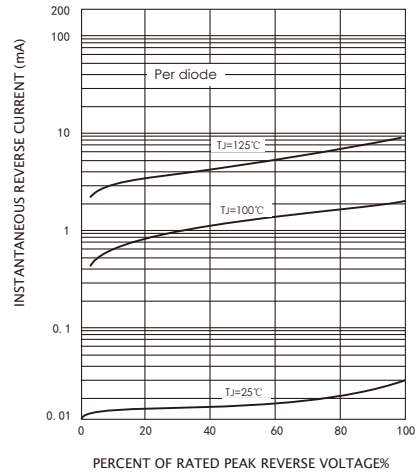
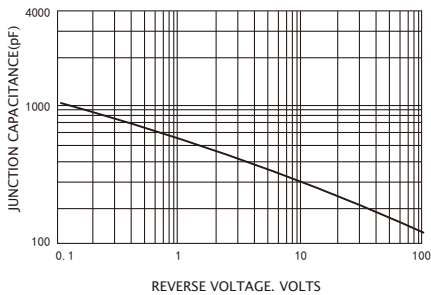


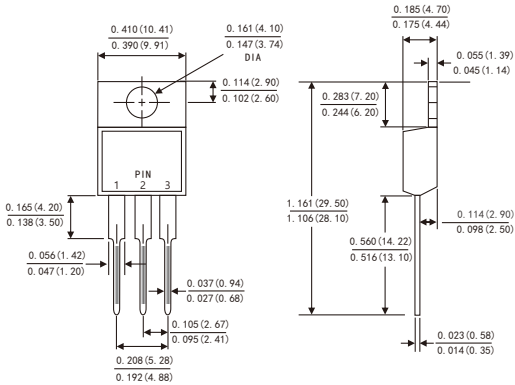
FIG.5-TYPICAL JUNCTION CAPACITANCE



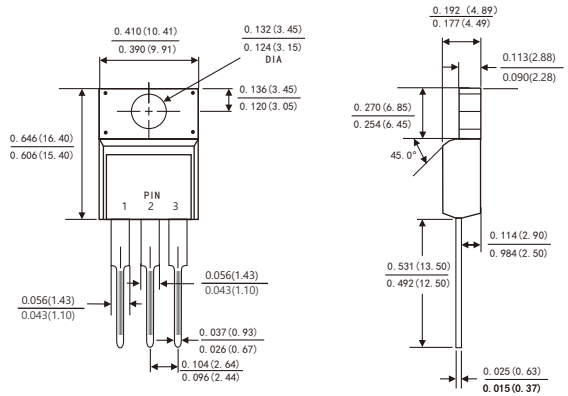
PACKAGE OUTLINE DIMENSIONS

Dimensions in inches and (millimeters)

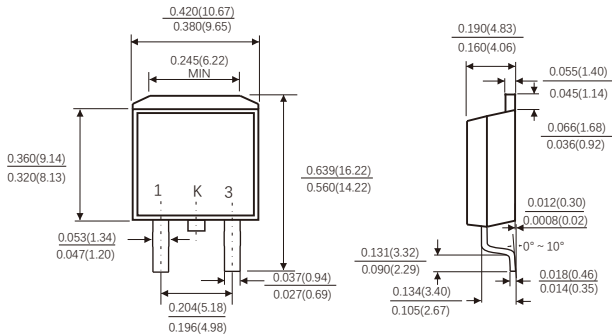
TO-220AB



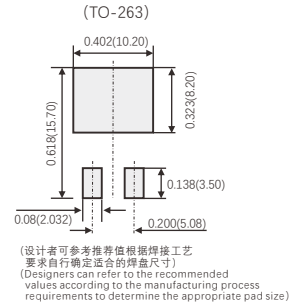
ITO-220AB



TO-263



Suggested Pad Layout



Dimensions in inches and (millimeters)