

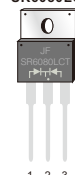
## FEATURES

- 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



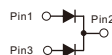
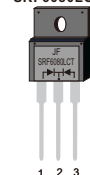
TO-220AB

SR6080LCT



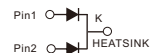
ITO-220AB

SRF6080LCT



TO-263

SR6080LD1



## 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	$V_{RRM}$	80	V
Maximum average forward rectified current (see fig.1)	Per leg	30	A
	Total device	60	
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC method at rated TL)	$I_{FSM}$	300	A
Peak repetitive reverse current per diode at $t_p=2\mu s$ 1KHz	$I_{RRM}$	2.0	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	
$I_F(AV)$	$2 \times 30A$
$V_{RRM}$	80V
$I_{FSM}$	300A
$V_f$ at $I_F=30A, 125^\circ C$ . Per leg	0.59V Typ
$I_R$	$35 \mu A$ Typ
$T_J(MAX)$	150°C
Package	TO-220AB, ITO-220AB, TO-263
Diode variations	Common cathode

## RATINGS AND CHARACTERISTIC OF SR6080LCT,SRF6080LCT,SR6080LD1

### ELECTRICAL CHARACTERISTICS (T<sub>A</sub>=25°C Unless otherwise noted)

Parameter	Test Conditions		Symbol	Typ.	Max.	Unit
Instantaneous forward voltage	T <sub>A</sub> =25°C	I <sub>F</sub> =5.0A	V <sub>F</sub> <sup>1)</sup>	0.42	–	V
		I <sub>F</sub> =15.0A		0.51	–	
		I <sub>F</sub> =30.0A		0.61	0.65	
	T <sub>A</sub> =125°C	I <sub>F</sub> =5.0A		0.31	–	
		I <sub>F</sub> =15.0A		0.45	–	
		I <sub>F</sub> =30.0A		0.59	0.63	
Reverse current	V <sub>R</sub> =80V	T <sub>A</sub> =25°C	I <sub>R</sub> <sup>2)</sup>	35	100	μA
		T <sub>A</sub> =100°C		4.1	–	mA
		T <sub>A</sub> =125°C		20	60	
Typical junction capacitance	4V, 1MHz		C <sub>J</sub>	1500		pF

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

2.Pulse test: pulse width ≤ 40ms

### THERMAL CHARACTERISTICS

Parameter	Symbol	SR4080LCT	SRF4080LCT	SR4080LD1	Unit
Typical thermal resistance <sup>3)</sup>	R <sub>θJC</sub>	2.0	4.0	2.0	°C/W

3.Thermal resistance from junction to case

### AVAILABLE PACK INFORMATION

Product code	Pack	Box Size L×W×H(mm)	Quantity(pcs/box)	Carton SizeL×W×H(mm)	Quantity(box/carton)
SR6080LCT-TO-220AB	P/T	558×148×38	1000	565×225×170	5
SRF6080LCT-ITO-220AB	P/T	558×148×38	1000	565×225×170	5
SR6080LD1-TO-263	P/T	558×148×38	1000	565×225×170	5

# RATINGS AND CHARACTERISTIC OF SR6080LCT,SRF6080LCT,SR6080LD1

FIG.1-FORWARD CURRENT DERATING CURVE

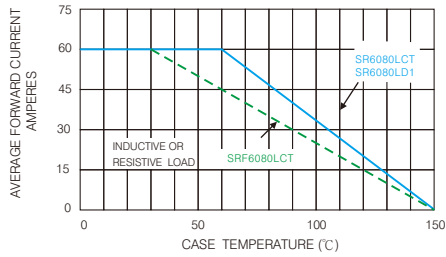


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

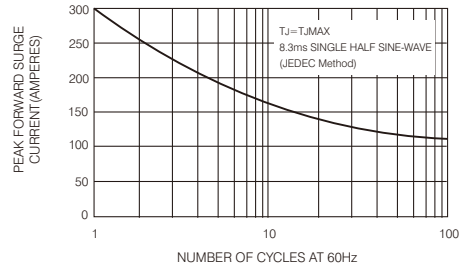


FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

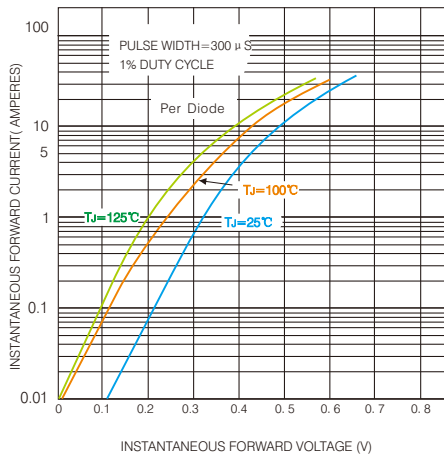


FIG.4-TYPICAL REVERSE CHARACTERISTICS

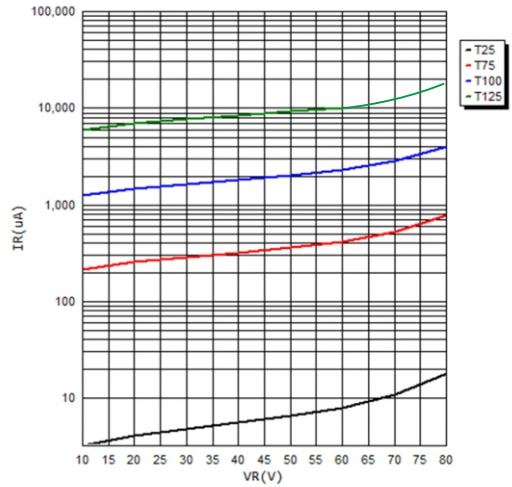
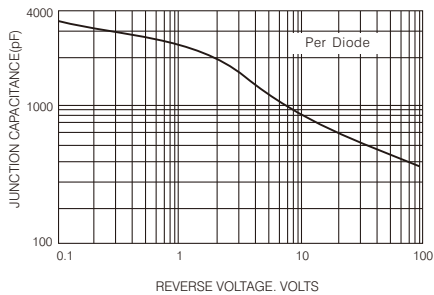
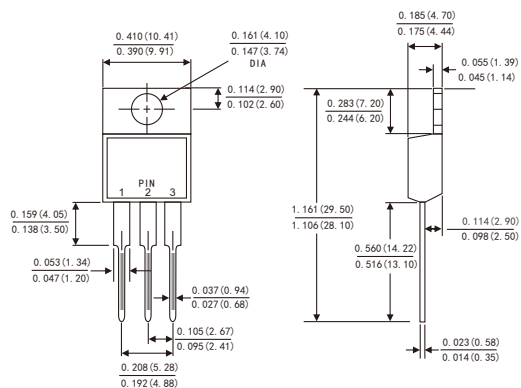


FIG.5-TYPICAL JUNCTION CAPACITANCE

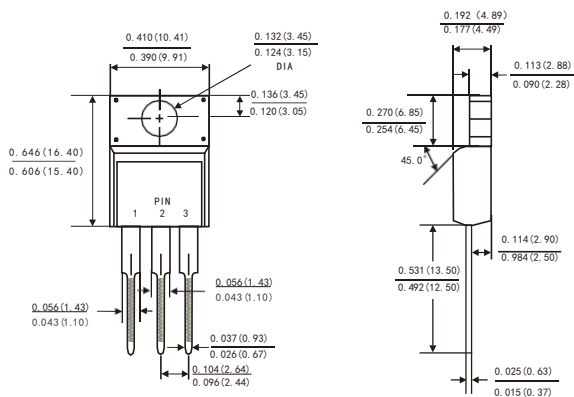


# PACKAGE OUTLINE DIMENSIONS

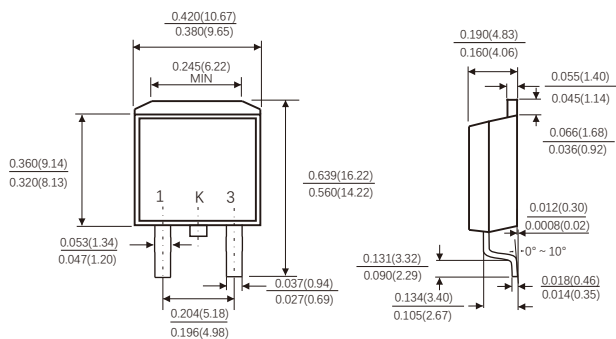
## TO-220AB



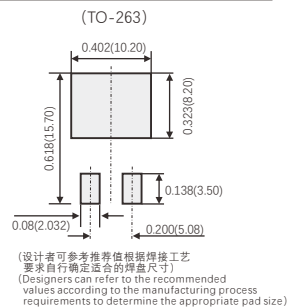
## ITO-220AB



## TO-263



## Suggested Pad Layout



Dimensions in inches and (millimeters)

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