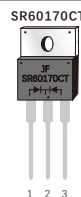


FEATURES

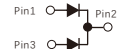
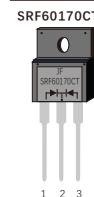
- Power pack
- Metal silicon junction ,majority carrier conduction
- Guard ring for overvoltage protection
- Low power loss ,high efficiency
- High current capability ,low forward voltage drop
- High forward surge capability
- High frequency operation
- Per J-STD-020,LF MAX peak of 260°C (for TO-263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



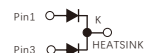
ITO-220AB



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

TO-263
SR60170D1



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}	170	V
Maximum average forward rectified current (see fig.1)	Per leg	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 TL)	I _{FSM}	300	A
Operating junction and Storage temperature range	T _J ,T _{stg}	-55 to+150	°C

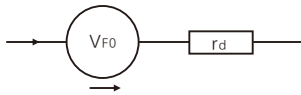
ELECTRICAL CHARACTERISTICS (T_A=25°C Unless otherwise noted)

Parameters	Test Conditions		Symbol	Typ.	Max.	Unit
Instantaneous forward voltage	Per leg I _F =30.0A	T _J =25°C	V _F ¹⁾	-	0.93	V
		T _J =125°C		0.72	0.76	
Reverse current	Per leg V _R =170V	T _J =25°C	I _R ²⁾	-	20	μA
		T _J =125°C		-	25	mA
Typical junction capacitance	4V,1MHz		C _J	290		pF

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

2.Pulse test: pulse width≤40ms

Equivalent circuits for Forward power loss calculation



V_{F0}: threshold voltage 0.60V

r_d: Dynamic resistance 0.0055Ω

Forward power loss of diode = V_{F0} × I_{F(AV)} + r_d × I_F²(RMS)

THERMAL CHARACTERISTICS

Parameter	Symbol	TO-220AB	ITO-220AB	TO-263	Unit
Typical thermal resistance ³⁾	R _{θjc}	1.0	2.0	1.0	°C/W

3.Thermal resistance from junction to case

dP_{tot}/dt_j < 1/R_{θjc} thermal runaway conditions for a diode on its heatsink

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)
SR60170CT-TO-220AB	Tube	565×225×170	548×151×37	540	5	20	50	5
SRF60170CT-ITO-220AB	Tube	565×225×170	548×151×37	540	5	20	50	5
SR60170D1-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)
SR60170D1-TO-263	Reel	364×364×235	330×330×38	φ330	5	1	800	4

FIG.1-FORWARD CURRENT DERATING CURVE

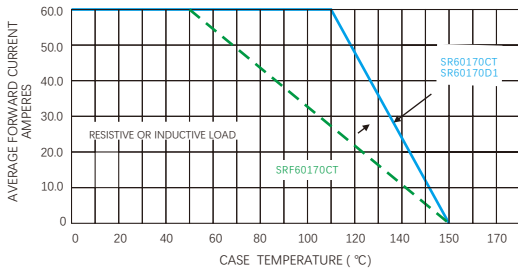


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

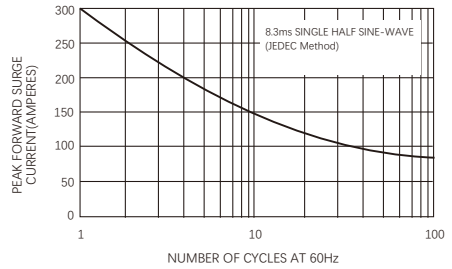


FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

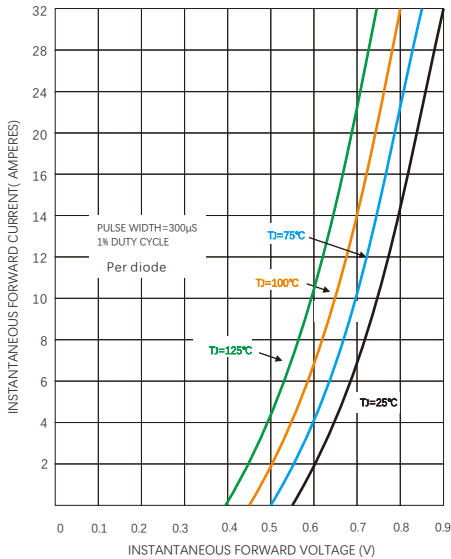


FIG.4-TYPICAL REVERSE CHARACTERISTICS

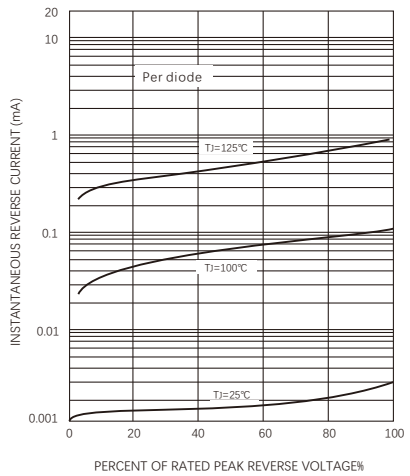


FIG.5-TYPICAL JUNCTION CAPACITANCE

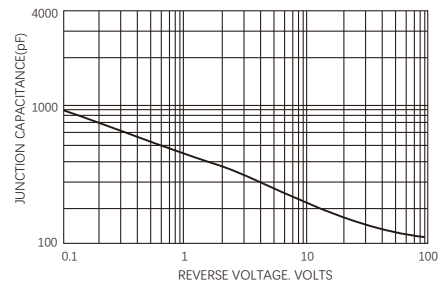
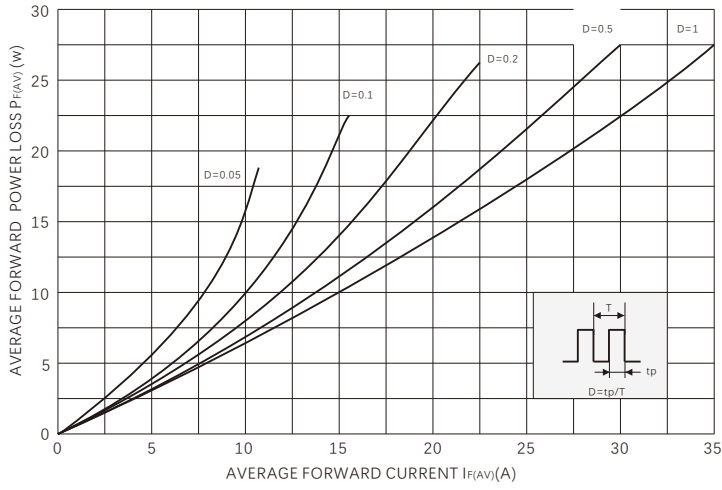
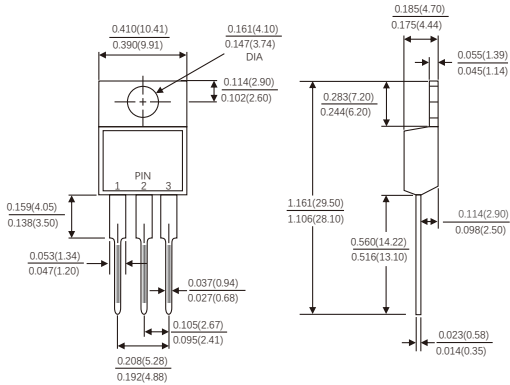


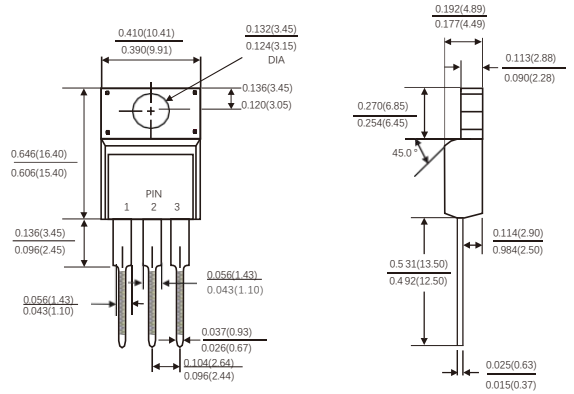
FIG.6-AVERAGE FORWARD POWER LOSS VS AVERAGE FORWARD CURRENT (per diode)



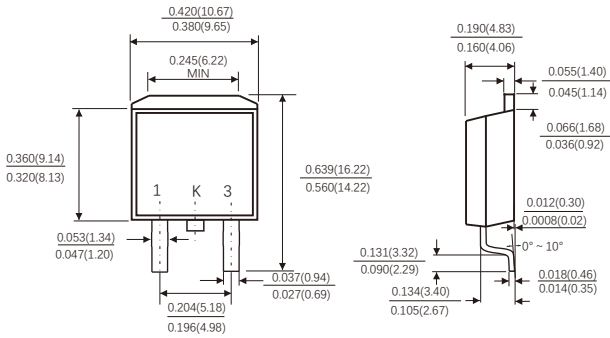
TO-220AB



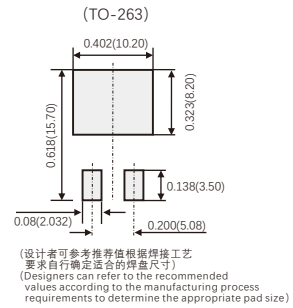
ITO-220AB



TO-263



Suggested Pad Layout



Dimensions in inches and (millimeters)

Friendship Reminder

- JiNan JingHeng (hereinafter referred to as JH) reserves the right to make changes to this document and its products and specifications at anytime without notice.
- Customers should obtain and confirm the latest product information and specifications before final design, purchase or use.
- JH makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does JH assume any liability for application assistance or customer product design.
- JH does not warrant or accept any liability with products which are purchased or used for any unintended or unauthorized application.
- No license is granted by implication or otherwise under any intellectual property rights of JH.
- JH's products are not authorized for use as critical components in life support devices or systems without express written approval of JH.