

LOW VF SCHOTTKY BARRIER RECTIFIER Reverse Voltage - 45 Volts Forward Current - 60Amperes

Features:

- Powerpack
- 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 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

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

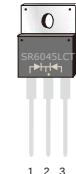
For use in low voltage ,high frequency inverters ,DC/DC converters, free wheeling ,and polarity protection applications

MAXIMUM RATINGS

(Ratings at 25°C ambient temperature unless otherwise specified)

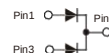
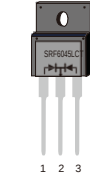
TO-220AB

KSR6045LCT



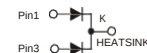
ITO-220AB

KSRF6045LCT



TO-263

KSR6045LD1



PRIMARY CHARACTERISTICS	
$I_F(AV)$	$2 \times 30A$
V_{RRM}	45V
I_{FSM}	300A
V_F at $I_F=30A, 125^\circ C$ Per leg	0.48V Typ
I_R	$20 \mu A$ Typ
$T_J(MAX)$	$150^\circ C$
Package	TO-220AB, ITO-220AB, TO-263
Diode variations	Common cathode

Parameter	Symbol	Value	Unit
Maximum repetitive peak reverse voltage	V_{RRM}	45	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 T_L)	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	$^\circ C$
Isolation voltage (ITO-220AB only) from terminal to heatsink $t=1$ min	V_{AC}	1500	V

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

Parameter	Test Conditions		Symbol	Typ.	Max.	Unit
Instantaneous forward voltage	T _A =25°C	I _F =5.0A	V _F ¹⁾	0.40	—	V
		I _F =15.0A		0.47	—	
		I _F =30.0A		0.54	0.58	
	T _A =125°C	I _F =5.0A		0.28	—	
		I _F =15.0A		0.37	—	
		I _F =30.0A		0.48	0.52	
Reverse current	V _R =45V	T _A =25°C	I _R ²⁾	20	100	μA
		T _A =100°C		—	10	mA
		T _A =125°C		—	50	
Typical junction capacitance	4V,1MHz		C _J	1900		pF

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

2.Pulse test: pulse width≤40ms

THERMAL CHARACTERISTICS

Parameter	Symbol	KSR6045LCT	KSRF6045LCT	KSR6045LD1	Unit
Typical thermal resistance ³⁾	R _{JC}	1.0	2.0	1.0	°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)
KSR6045LCT-TO-220AB	P/T	558×148×38	1000	565×225×170	5
KSRF6045LCT-ITO-220AB	P/T	558×148×38	1000	565×225×170	5
KSR6045LD1-TO-263	P/T	558×148×38	1000	565×225×170	5

RATINGS AND CHARACTERISTIC OF SR6045LCT,SRF6045LCT,SR6045LD1

FIG.1-FORWARD CURRENT DERATING CURVE

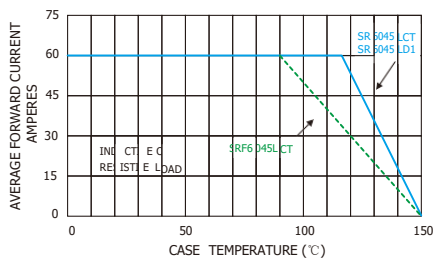


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

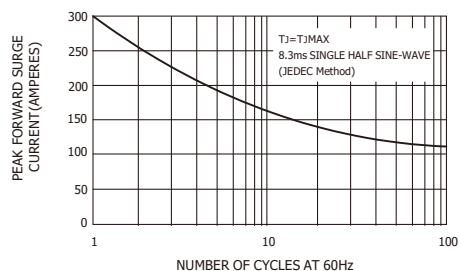


FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

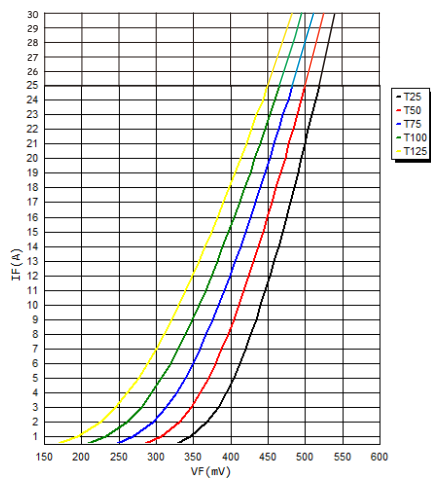


FIG.4-TYPICAL REVERSE CHARACTERISTICS

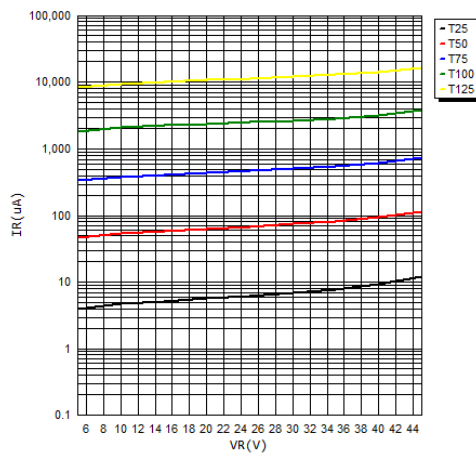
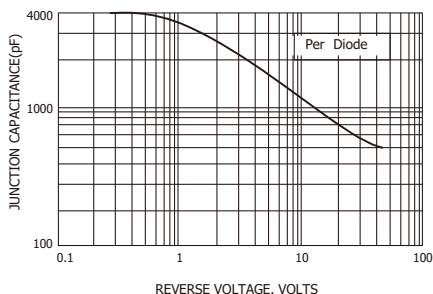
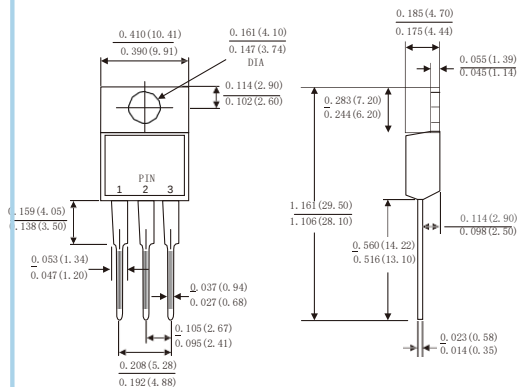


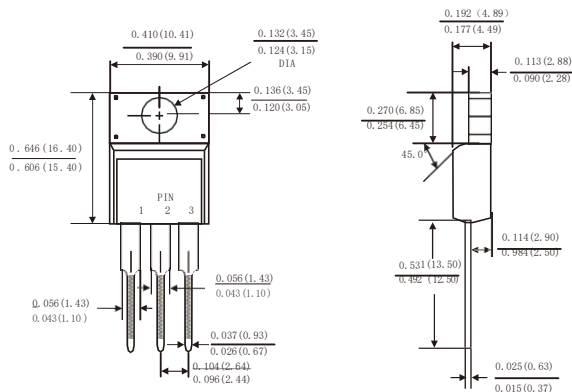
FIG.5-TYPICAL JUNCTION CAPACITANCE



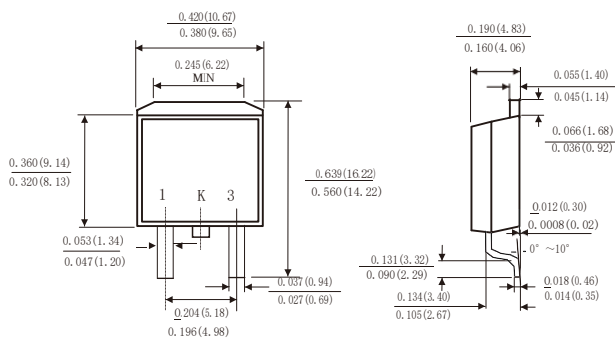
TO-220AB



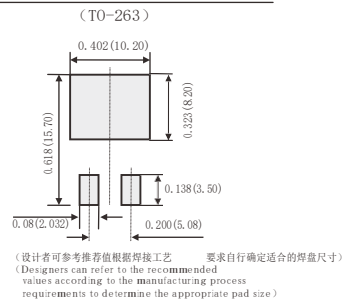
ITO-220AB



TO-263



Suggested Pad Layout



Dimensions in inches and (millimeters)