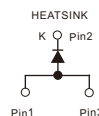


### FEATURES

- 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
- Meets MSL Level 1, per J-STD-020,LF MAX peak of 260°C
- for TO-263 package
- Component in accordance to RoHS 2015/863/EU



TO-263  
SR4045D3



### MECHANICAL DATA

- Case: JEDEC TO-263
- Molding compound meets UL94V-0 flammability rating
- Terminals: Lead solderable per J-STD-002 and JESD22-B102
- Polarity: As marked

### TYPICAL APPLICATIONS

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

PRIMARY CHARACTERISTICS	
$I_F(AV)$	40A
$V_{RRM}$	45V
$I_{FSM}$	350A
$V_f$ at $I_F=40.0A, 25^\circ C$	0.50V
$I_R$	30 $\mu$ A
$T_j$ max.	150°C
Diode variations	Single die

### MAXIMUM RATINGS

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

Parameter	Symbol	Value	Unit
Maximum repetitive peak reverse voltage	$V_{RRM}$	45	V
Maximum average forward rectified current(see fig.1)	$I_F(AV)$	40	A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC method at rated TL)	$I_{FSM}$	350	A
Operating junction temperature range	$T_j$	-55 to +150	°C
Storage temperature range	$T_{stg}$	-55 to +150	°C

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

Parameter	Test Conditions		Symbol	Typ.	Max.	Unit
Instantaneous forward voltage	T <sub>J</sub> =25°C	I <sub>F</sub> =5A	V <sub>F</sub> <sup>1)</sup>	0.41	–	V
		I <sub>F</sub> =20A		0.46	–	
		I <sub>F</sub> =40A		0.50	0.55	
	T <sub>J</sub> =125°C	I <sub>F</sub> =5A		0.27	–	
		I <sub>F</sub> =20A		0.37	–	
		I <sub>F</sub> =40A		0.47	–	
Reverse current	V <sub>R</sub> =45V	T <sub>J</sub> =25°C	I <sub>R</sub> <sup>2)</sup>	–	100	μA
		T <sub>J</sub> =125°C		–	50	mA

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

2.Pulse test: pulse width ≤40ms

## THERMAL CHARACTERISTICS

Parameter	Symbol	SR4045D3	Unit
Typical thermal resistance <sup>3)</sup>	R <sub>θc</sub>	0.8	°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)
SR4045D3	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)
SR4045D3	Reel	364×364×235	330×330×38	φ330	5	1	800	4

FIG.1-FORWARD CURRENT DERATING CURVE

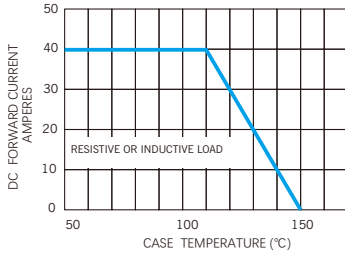


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

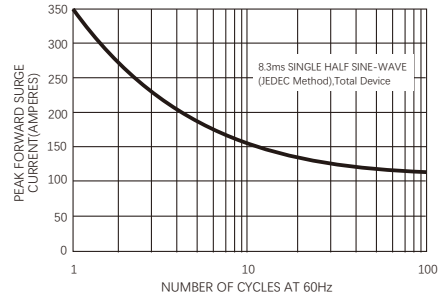


FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

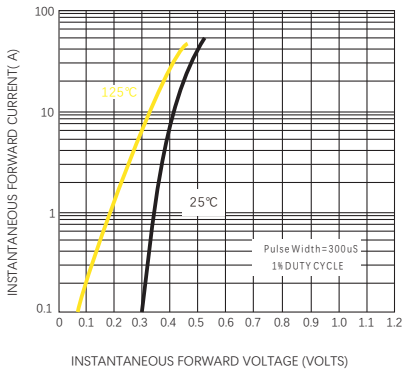
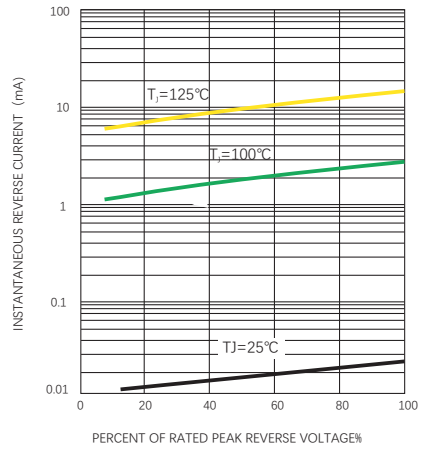
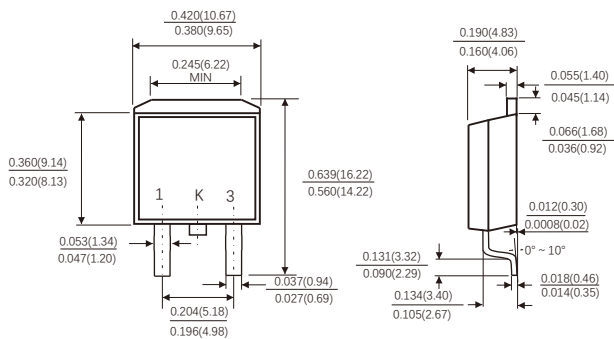


FIG.4-TYPICAL REVERSE CHARACTERISTICS

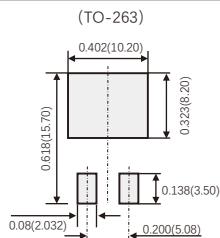


Dimensions in inches and (millimeters)

## TO-263



## 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)

## 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.