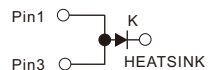


## FEATURES

- 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 260°C (for TO-252 package)
- Component in accordance to RoHS 2015/863/EU



TO-252  
SR20300M3



## MECHANICAL DATA

- Case: JEDEC TO-252
- 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

$I_{F(AV)}$	20A
$V_{RRM}$	300V
$I_{FSM}$	200A
$V_f$ at $I_F=20A, 125^\circ C$	0.77V
$I_n$ Typ, 25°C	0.5 $\mu A$
$T_J(MAX)$	150°C
Package	TO-252
Diode variations	Single chip

## MAXIMUM RATINGS

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

Parameter	Symbol	Value	Unit
Maximum repetitive peak reverse voltage	$V_{RRM}$	300	V
Maximum forward average rectified current (see fig.1)	$I_{F(AV)}$	20.0	A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load	$I_{FSM}$	200	A
Operating junction and Storage temperature range	$T_J, T_{stg}$	-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	I <sub>F</sub> =20A	T <sub>A</sub> =25°C	V <sub>F</sub> <sup>1)</sup>	0.90	0.95	V
		T <sub>A</sub> =100°C		0.80	–	
		T <sub>A</sub> =125°C		0.77	–	
	I <sub>F</sub> =5A	T <sub>A</sub> =25°C		0.76	–	
		T <sub>A</sub> =100°C		0.66	–	
		T <sub>A</sub> =125°C		0.62	–	
Reverse current	V <sub>R</sub> =300V	T <sub>A</sub> =25°C	I <sub>R</sub> <sup>2)</sup>	–	5.0	μA
		T <sub>A</sub> =100°C		–	0.5	mA
		T <sub>A</sub> =125°C		–	1.5	
Typical junction capacitance	4V, 1MHz		C <sub>J</sub>	214		pF

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

2.Pulse test: pulse width ≤ 40ms

## THERMAL CHARACTERISTICS

Parameter	Symbol	TO-252	Unit
Typical thermal resistance <sup>3)</sup>	R <sub>θJC</sub>	2.5	°C/W

3.Thermal resistance from junction to case

## 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)
SR20300M3- TO-252	Tube	565×225×170	548×151×37	520	5	60	75	22.5
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)
SR20300M3- TO-252	Reel	364×364×235	346×346×23	φ330	8	1	2500	20

# RATINGS AND CHARACTERISTIC OF SR20300M3

FIG.1-FORWARD CURRENT DERATING CURVE

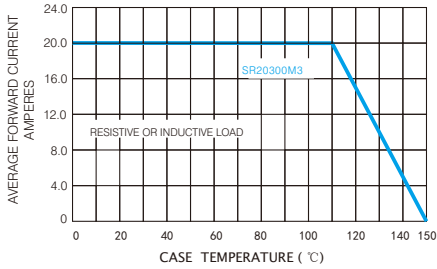


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

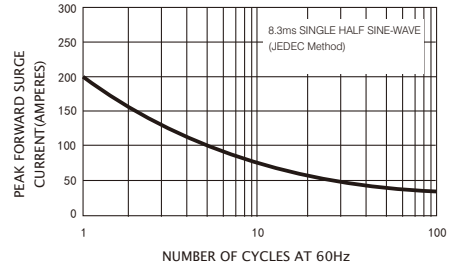


FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

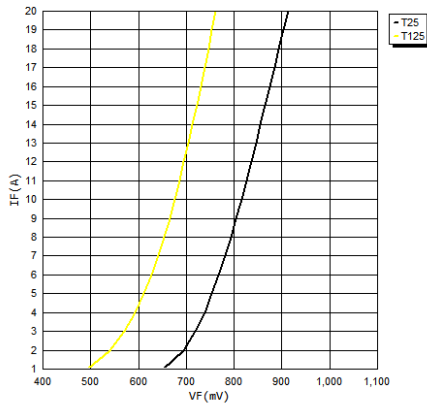


FIG.4-TYPICAL REVERSE CHARACTERISTICS

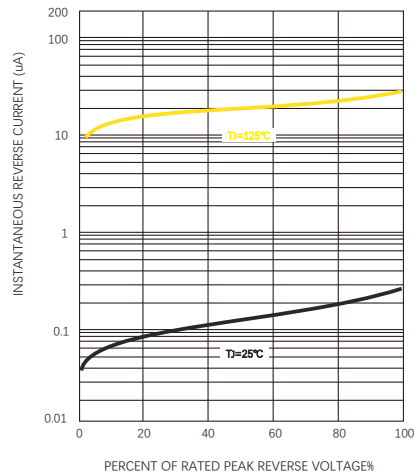
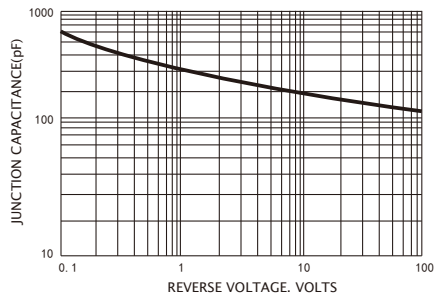
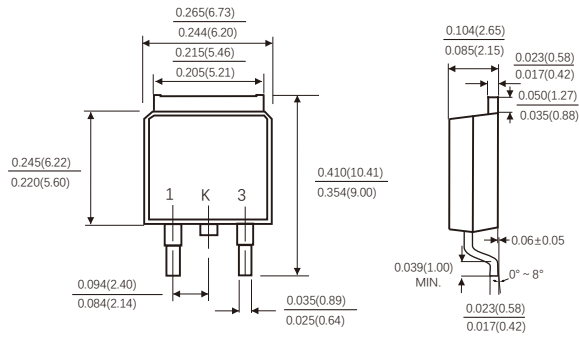


FIG.5-TYPICAL JUNCTION CAPACITANCE



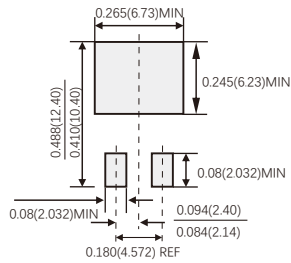
Dimensions in inches and (millimeters)

## TO-252



## Suggested Pad Layout

(TO-252)



(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)

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