

### TO-247AB

## 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
- Component in accordance to RoHS 2011/65/EU

## MECHANICAL DATA

- Case: JEDEC TO-247AB
- 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

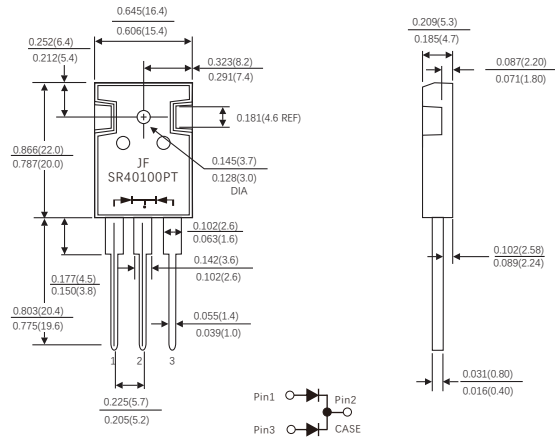
## TYPICAL APPLICATIONS

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	$V_{RRM}$	100	V
Maximum average forward rectified current (see fig.1)	Per leg	20.0	A
	Total device	40.0	
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	$I_{RRM}$	0.5	A
Operating junction and Storage temperature range	$T_J, T_{stg}$	-55 to+150	°C



### PRIMARY CHARACTERISTICS

$I_F(AV)$	2×20A
$V_{RRM}$	100V
$I_{FSM}$	300A
$V_f$ at $I_f=20.0A$ ,Per leg	0.78V
$I_r$	2μA
$T_J(MAX)$	150°C
Package	TO-247AB
Diode variations	Common cathode

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

Parameter	Test Conditions		Symbol	Typ.	Max.	Unit
Instantaneous forward voltage	Per leg I <sub>F</sub> =20.0A	T <sub>A</sub> =25°C	V <sub>F</sub> <sup>1)</sup>	0.78	0.85	V
		T <sub>A</sub> =100°C		0.68	-	
		T <sub>A</sub> =125°C		0.63	-	
	Per leg I <sub>F</sub> =10.0A	T <sub>A</sub> =25°C		0.70	0.81	
		T <sub>A</sub> =100°C		0.60	-	
		T <sub>A</sub> =125°C		0.56	-	
Reverse current	V <sub>R</sub> =100V	T <sub>A</sub> =25°C	I <sub>R</sub> <sup>2)</sup>	1	5	μA
		T <sub>A</sub> =100°C		-	2	mA
		T <sub>A</sub> =125°C		-	5	
Typical junction capacitance	4V,1MHz		C <sub>J</sub>	550		pF

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

2.Pulse test: pulse width ≤ 40ms

## THERMAL CHARACTERISTICS

Parameter	Symbol	SR40100PT	Unit
Typical thermal resistance <sup>3)</sup>	R <sub>θJC</sub>	0.5	°C/W

3.Thermal resistance from junction to case

FIG.1-FORWARD CURRENT DERATING CURVE

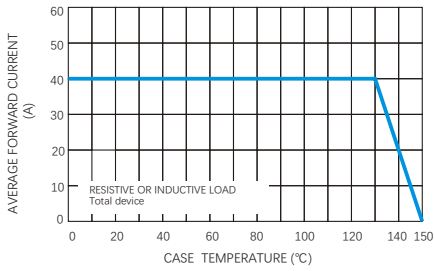


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

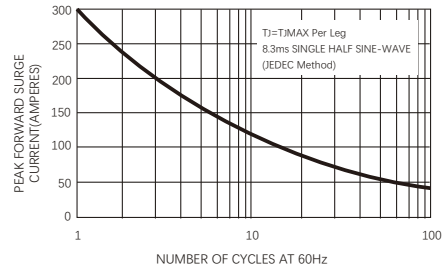


FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

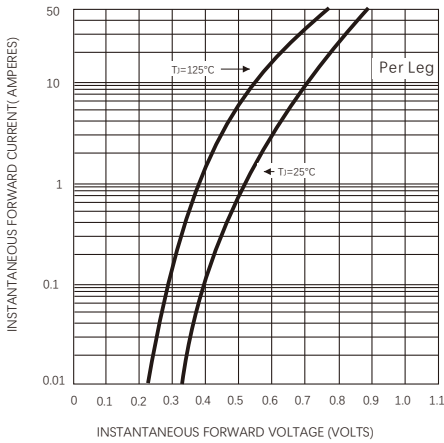


FIG.4-TYPICAL REVERSE CHARACTERISTICS

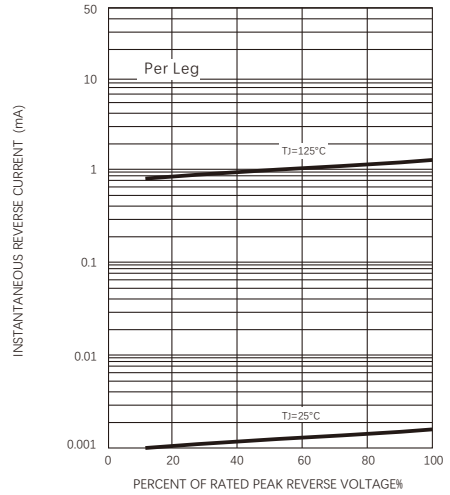
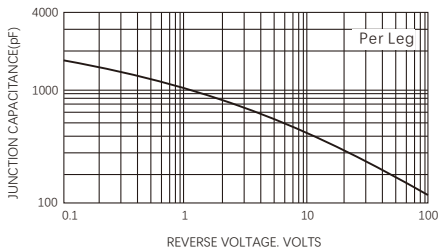


FIG.5-TYPICAL JUNCTION CAPACITANCE



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