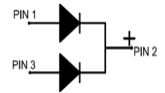
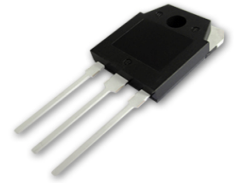


## FEATURES

- 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
- Solder bath temperature 275°C maximum, 10s, per JESD22-B106
- Component in accordance to RoHS 2011/65/EU

## TO-3P



## MECHANICAL DATA

- Case: JEDEC TO-220F
- 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

Dimensions in millimeters and (inches)

## TYPICAL APPLICATIONS

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

PRIMARY CHARACTERISTICS	
$I_F(AV)$	2×20A
$V_{RRM}$	200V
$I_{FSM}$	300A
$V_f$ at $I_F=20.0A$ ,Per leg	0.85V
$I_t$	30 $\mu$ A
$T_J(MAX)$	150°C
Package	TO-3P
Diode variations	Common cathode

## MAXIMUM RATINGS

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

Parameter	Symbol	MBR40200CT	Unit
Maximum repetitive peak reverse voltage	$V_{RRM}$	200	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 $T_L$ )	$I_{FSM}$	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
Isolation voltage (TO-3P only) from terminals to heatsink $t=1$ min	$V_{AC}$	1500	V

## RATINGS AND CHARACTERISTIC OF MBR40200CT

### 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>	0.85	0.90	V
		T <sub>A</sub> =100°C		0.78	–	
		T <sub>A</sub> =125°C		0.75	–	
	Per leg I <sub>F</sub> =15.0A	T <sub>A</sub> =25°C		0.82	0.86	
		T <sub>A</sub> =100°C		0.75	–	
		T <sub>A</sub> =125°C		0.73	–	
Reverse current	V <sub>R</sub> =100V	T <sub>A</sub> =25°C	I <sub>R</sub> <sup>2)</sup>	30	60	μA
		T <sub>A</sub> =100°C		3	5	mA
		T <sub>A</sub> =125°C		12	20	
Typical junction capacitance	4V, 1MHz		C <sub>J</sub>	570		pF

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

2.Pulse test: pulse width≤40ms

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

Parameter	Symbol	MBR40200CT	Unit
Typical thermal resistance <sup>3)</sup>	R <sub>θJC</sub>	4.5	°C/W

3.Thermal resistance from junction to case

# RATINGS AND CHARACTERISTIC OF MBR40100CT

FIG.1-FORWARD CURRENT DERATING CURVE

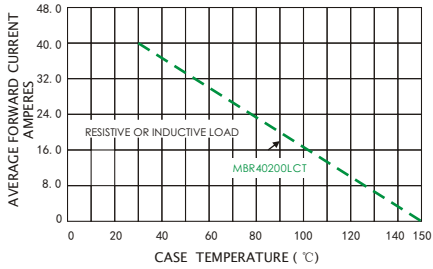


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

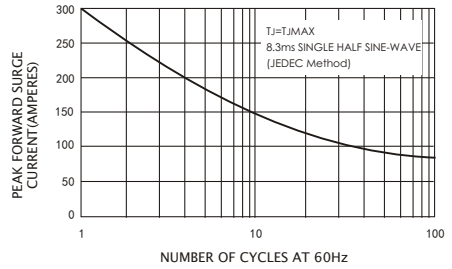


FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

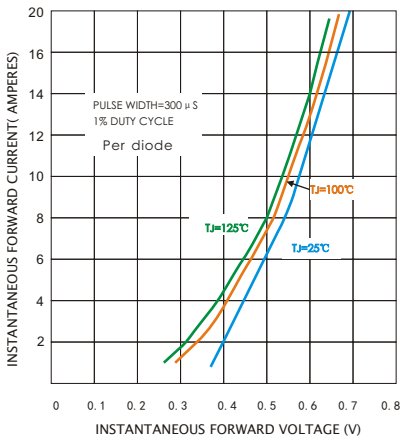


FIG.4-TYPICAL REVERSE CHARACTERISTICS

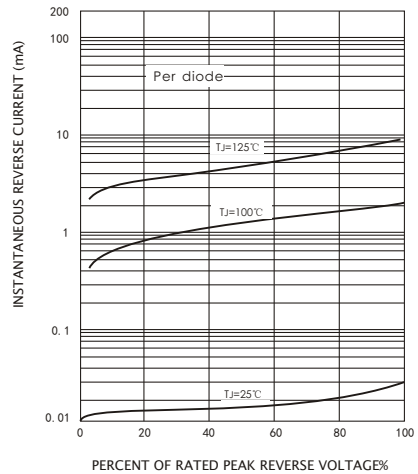
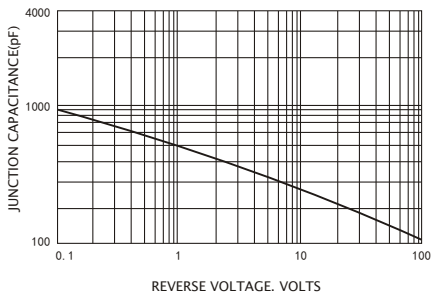


FIG.5-TYPICAL JUNCTION CAPACITANCE



# PACKAGE OUTLINE DIMENSIONS

## TO-3P

