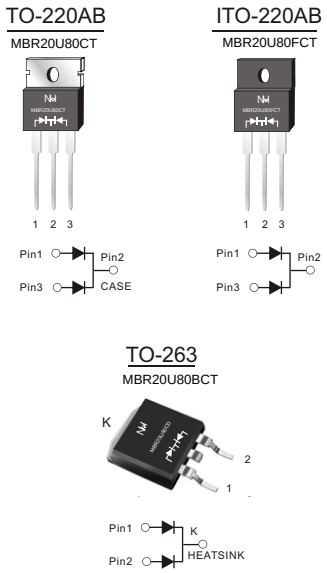
MBR20U80CT,MBR20U80FCT,MBR20U80CD

SUPER LOW VF SCHOTTKY RECTIFIERS

Pb Pb-Free ROHS COMPLIANT

VOLTAGE 80Volts **CURRENT** 20 Amperes

TO-220AB/ITO-220AB/TO-263 Unit:(mm)



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 245℃（for TO-263 package）
- Solder bath temperature 275℃ maximum，10s，per JESD22-B106（for TO-220AB and ITO-220AB package）
- Component in accordance to RoHS 2011/65/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℃ ambient temperature unless otherwise specified)

Parameter		Symbol	MBR20U80CT/FCT/CD	Unit
Maximum repetitive peak reverse voltage		V_{RRM}	80	V
Maximum average forward rectified current (see fig.1)	Per leg	$I_{F(AV)}$	10.0	A
	Total device		20.0	
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC method at rated TL)		I_{FSM}	200	A
Peak repetitive reverse current per diode at tp=2μs 1KHz		I_{RRM}	0.5	A
Operating junction and Storage temperature range		T_J,T_{stg}	-55 to+150	℃
Isolation voltage(ITO-220AB only) from terminals to heatsink t=1 min		V_{AC}	1500	V

Electrical Characteristcs (Ratings at 25℃ ambient temperature unless otherwise specified)

Parameter	Test Conditions		Symbol	TYP.	MAX.	Unit
Instaneous forward voltage	Per leg IF=10.0A	T_A=25℃	V_F 1)	0.53	0.58	V
		T_A=100℃		0.51	–	
		T_A=125℃		0.50	–	
	Per leg IF=5.0A	T_A=25℃		0.46	0.51	
		T_A=100℃		0.40	–	
		T_A=125℃		0.38	–	
Reverse current	VR=80V	T_A=25℃	I_R 2)	15	100	μA
		T_A=100℃		3.3	–	mA
		T_A=125℃		13	–	
Typical junction capacitance	4V, 1MHz		C_J	770		pF

Notes: 1.Pulse test: 300 μs pulse width,1% duty cycle
2.Pulse test: pulse width≤40ms

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RATINGANDCHARACTERISTICCURVES

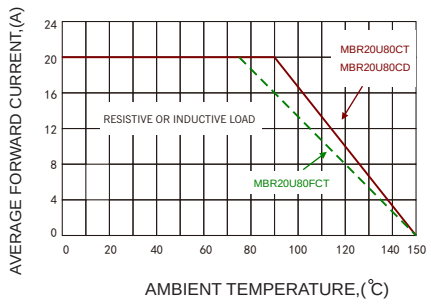

Fig.1 FORWARD CURRENT DERATING CURVE

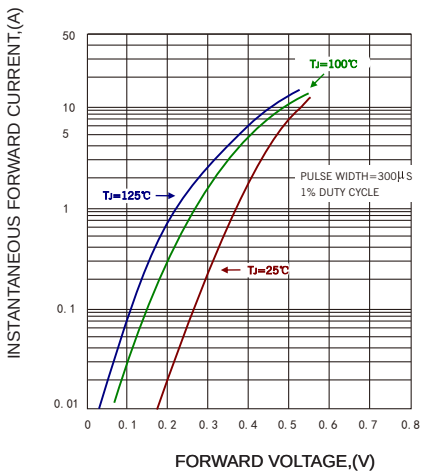

Fig.2-TYPICAL INSTANTANEOUS FORWARD

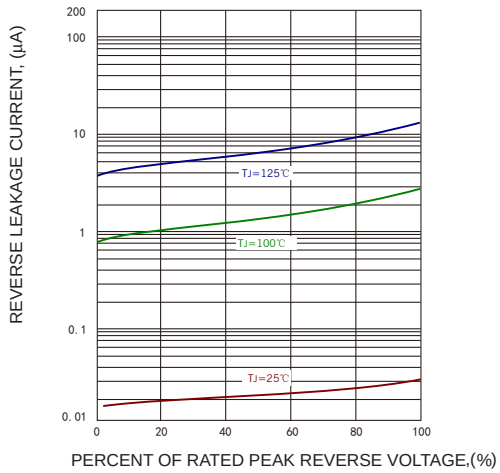

Fig.3 TYPICAL REVERSE CHARACTERISTICS

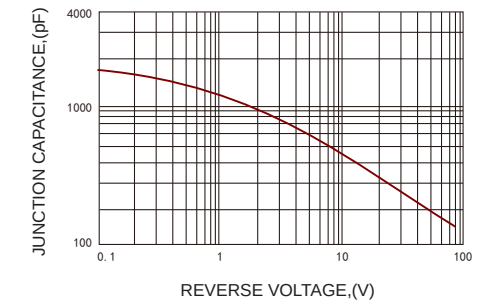

Fig.4 TYPICAL JUNCTION CAPACITANCE

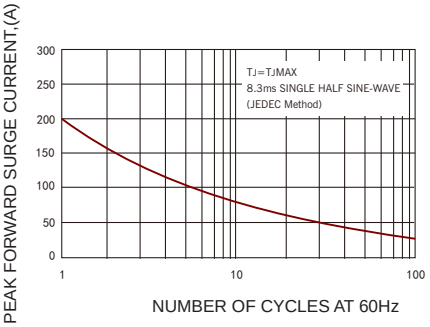

Fig.5- MAXIMUM NON - REPETITIVE SURGE CURRENT

Thermal Characteristcs (Ratings at 25℃ ambient temperature unless otherwise specified)

Parameter	Symbol	MBR20U80CT	MBR20U80FCT	MBR20U80CD	Unit
Typical thermal resistance 3)	RθJC	2.2	4.0	2.2	℃/W

3.Thermal resistance from junction to case

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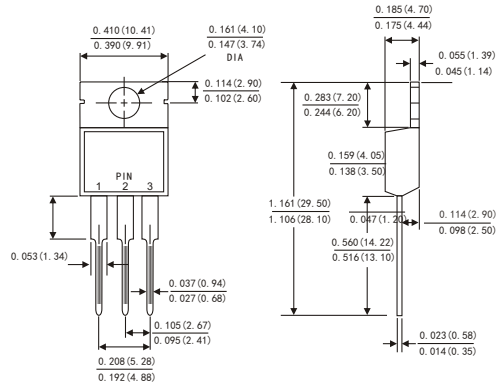
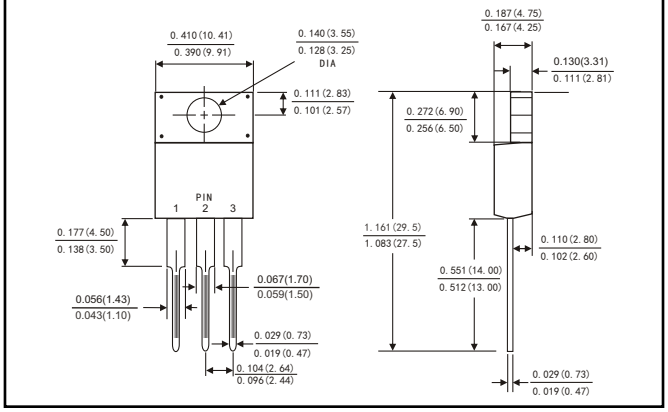
OUTLINE DRAWINGS

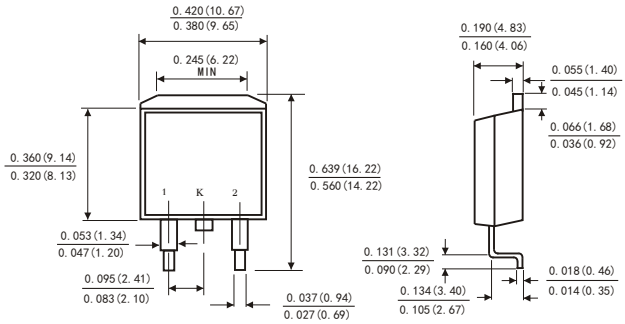
TO-220AB



ITO-220AB

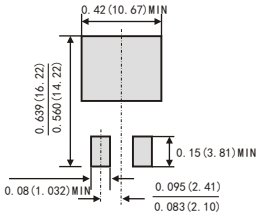


TO-263



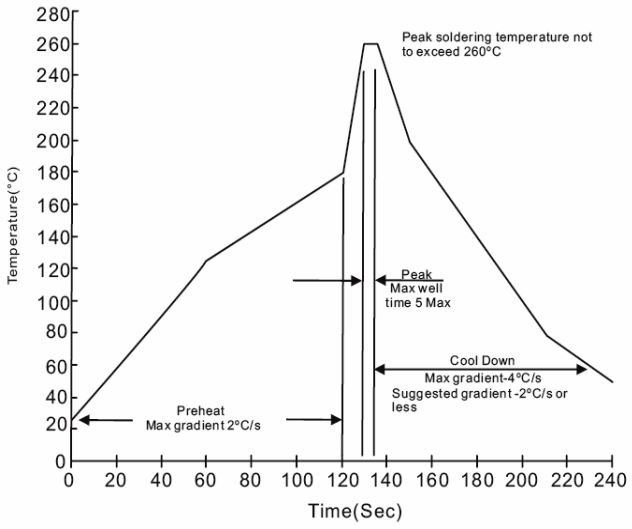
Suggested Pad Layout

(TO-263)



SUGGESTED THERMAL PROFILES FOR SOLDERING PROCESSES

LEAD FREE TEMPERATURE PROFILE WAVE-SOLDERING



ORDER INFORMATION

- Packing information

Product code	Pack	Box Size L×W×H(mm)	Quantity(pcs/box)	Carton SizeL×W×H(mm)	Quantity(box/carton)
MBR20U80CT	P/T	550×150×40	1000	580×230×175	5
MBR20U80FCT	P/T	550×150×40	1000	580×230×175	5
MBR20U80BCT	P/T	550×150×40	1000	580×230×175	5

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