

MBR1020CT/FCT/CD THRU MBR10200CT/FCT/CD

SCHOTTKY RECTIFIERS



VOLTAGE

20~200Volts

CURRENT

10 Ampers

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°C (for TO-263 package)
- Solder bath temperature 275°C maximum, 10s, per JESD22-B106 (for TO-220AB and ITO-220AB package)
- Component in accordance to RoHS 2011/65/EU

MECHANICAL DATA

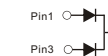
- Case: JEDEC TO-220AB、ITO-220AB、TO-263
- Molding compound meets UL94V-0 flammability rating
- Terminals: Lead solderable per J-STD-002 and JESD22-B102
- Polarity: As marked
- Mounting Torque: 10 in-lbs maximum

TYPICAL APPLICATIONS

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

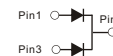
TO-220AB

MBR10150CT



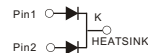
ITO-220AB

MBR10150FCT



TO-263

MBR10150CD



Maximum Ratings and Electrical Characteristics

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

		Symbols	MBR 1020CT /FCT /CD	MBR 1030CT /FCT /CD	MBR 1040CT /FCT /CD	MBR 1050CT /FCT /CD	MBR 1060CT /FCT /CD	MBR 1080CT /FCT /CD	MBR 10100CT /FCT /CD	MBR 10150CT /FCT /CD	MBR 10200CT /FCT /CD	Units
Maximum repetitive peak reverse voltage		VRRM	20	30	40	50	60	80	100	150	200	Volts
Maximum RMS voltage		VRMS	14	21	28	35	42	56	70	105	140	Volts
Maximum DC blocking voltage		VDC	20	30	40	50	60	80	100	150	200	Volts
Maximum average forward rectified current(see Fig.1)	Per leg Total device	I(AV)	5.0 10.0									Amps
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC method)		IFSM	150.0									Amps
Maximum instantaneous forward voltage at 10.0 A		VF	0.70			0.75		0.80		0.90		Volts
Maximum instantaneous reverse current at rated DC blocking voltage(Note 1)	Tc = 25℃	IR	0.05									mA
	Tc = 125℃		20									
Operating junction temperature range		TJ	-65 to +150									℃
Storage temperature range		TSTG	-65 to +150									℃

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

MBR1020CT/FCT/CD THRU MBR10200CT/FCT/CD

SCHOTTKY RECTIFIERS



RATING AND CHARACTERISTIC CURVES

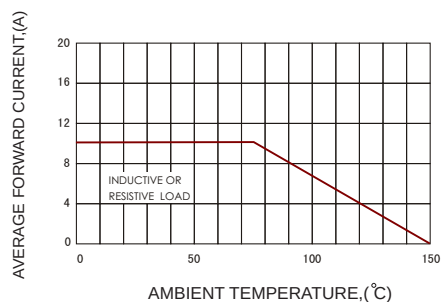


Fig.1 FORWARD CURRENT DERATING CURVE

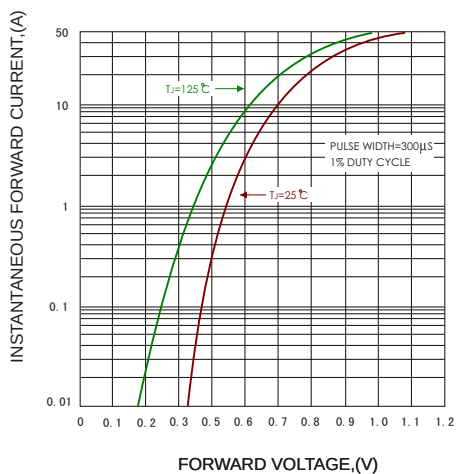


Fig.2-TYPICAL INSTANTANEOUS FORWARD

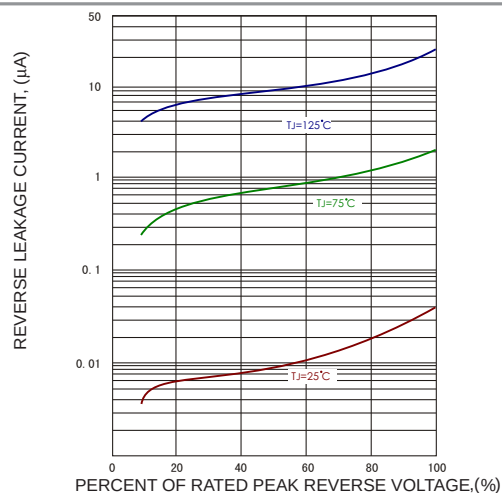


Fig.3 TYPICAL REVERSE CHARACTERISTICS

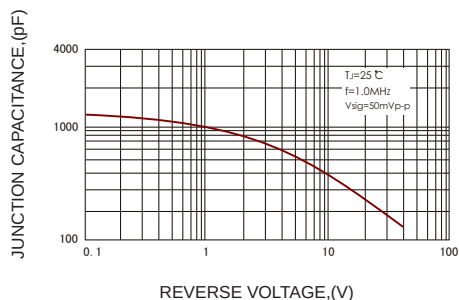


Fig.4 TYPICAL JUNCTION CAPACITANCE

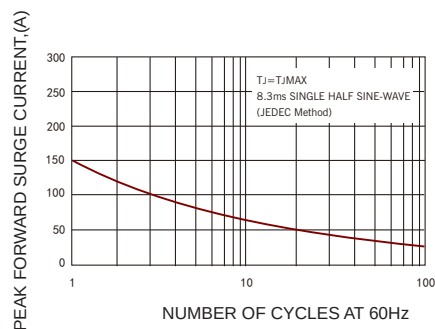
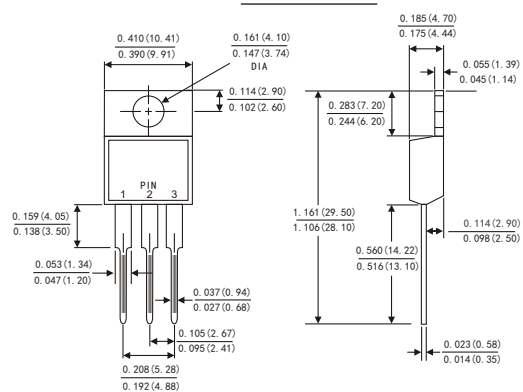
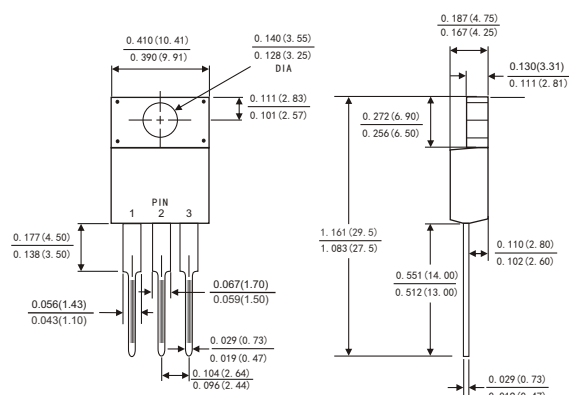
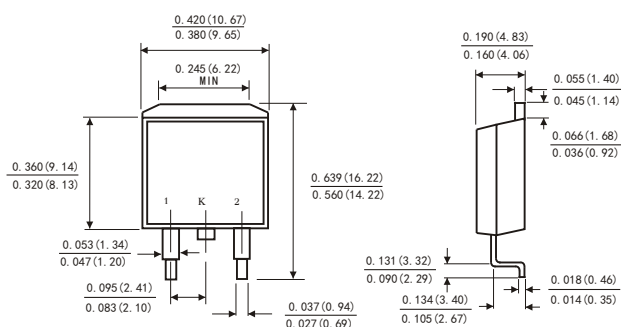


Fig.5- MAXIMUM NON - REPETITIVE SURGE CURRENT

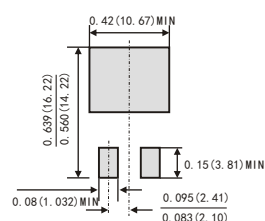
Pb-Free



OUTLINE DRAWINGS



(TO-263)



Parameter	Symbol	TO-220AB	ITO-220AB	TO-263	Unit
Typical thermal resistance 2)	R θ jc	2.5	4.5	2.5	°C/W

Product code	Pack	Box Size L×W×H(mm)	Quantity(pcs/box)	Carton SizeL×W×H(mm)	Quantity (box/carton)
TO-220AB	P/T	550×150×40	1000	580×230×175	5
ITO-220AB	P/T	550×150×40	1000	580×230×175	5
TO-263	P/T	550×150×40	1000	580×230×175	5

MBR1020CT/FCT/CD THRU MBR10200CT/FCT/CD

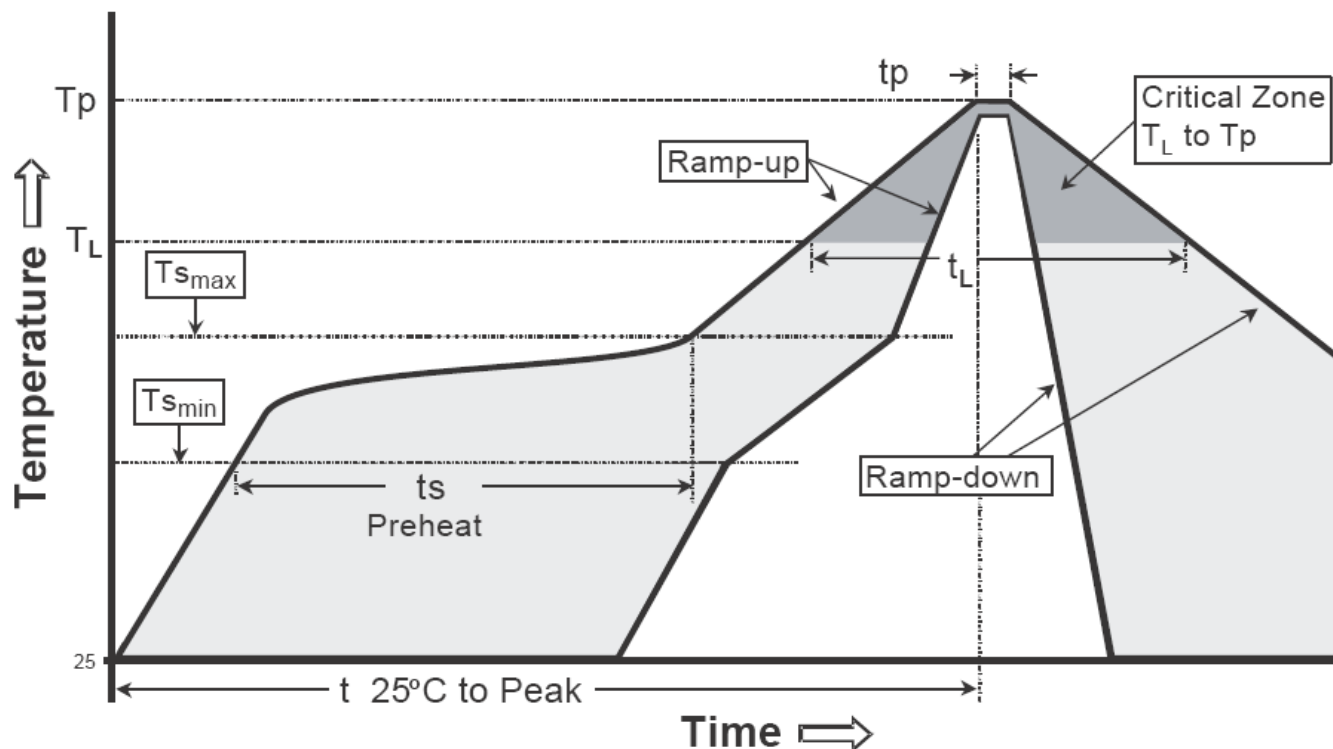
SCHOTTKY RECTIFIERS



Recommended wave soldering condition

Product	Peak Temperature	Soldering Time
Pb-free devices	260 +0/-5 °C	5 +1/-1 seconds

Recommended temperature profile for IR reflow



Profile feature	Sn-Pb eutectic Assembly	Pb-free Assembly
Average ramp-up rate (Tsmax to Tp)	3°C/second max.	3°C/second max.
Preheat		
-Temperature Min(Ts min)	100°C	150°C
-Temperature Max(Ts max)	150°C	200°C
-Time(ts min to ts max)	60-120 seconds	60-180 seconds
Time maintained above:		
-Temperature (Tl)	183°C	217°C
- Time (tL)	60-150 seconds	60-150 seconds
Peak Temperature(TP)	240 +0/-5 °C	260 +0/-5 °C
Time within 5°C of actual peak temperature(tp)	10-30 seconds	20-40 seconds
Ramp down rate	6°C/second max.	6°C/second max.
Time 25 °C to peak temperature	6 minutes max.	8 minutes max.

Note : All temperatures refer to topside of the package, measured on the package body surface.

MBR1020CT/FCT/CD THRU MBR10200CT/FCT/CD

SCHOTTKY RECTIFIERS

**Disclaimer**

- Reproducing and modifying information of the document is prohibited without permission from niuhang Electronics co., LTD
- Niuhan Electronics co., LTD. reserves the rights to make changes of the content herein the document anytime without notification.
- Niuhan Electronics co., LTD. disclaims any and all liability arising out of the application or use of any product including damages incidentally and consequentially occurred.
- Niuhan Electronics co., LTD. does not assume any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.
- Applications shown on the herein document are examples of standard use and operation. Customers are responsible in comprehending the suitable use in particular applications. Niuhan Electronics co., LTD. makes no representation or warranty that such applications will be suitable for the specified use without further testing or modification.
- The products shown herein are not designed and authorized for equipments requiring high level of reliability or relating to human life and for any applications concerning life-saving or life-sustaining, such as medical instruments, transportation equipment, aerospace machinery et cetera. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Niuhan Electronics co., LTD. for any damages resulting from such improper use or sale.
- When the appearance of the product and chip size does not change, in order to product quality, change the internal structure and the production process Niuhan can not notify the customer.