

## MBR2040CGD-HF Thru. MBR20200CGD-HF

Reverse Voltage: 40 to 200 V

Forward Current: 20 A

RoHS Device  
Halogen Free

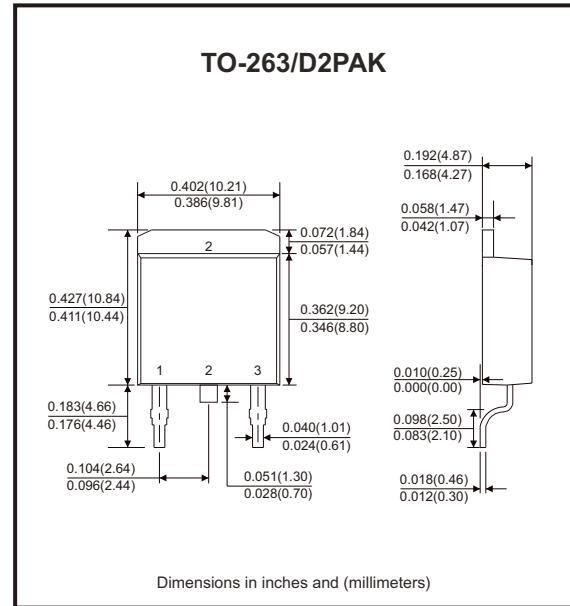


### Features

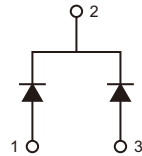
- Plastic package has underwrites laboratory flammability classification 94V-0. Flame retardant epoxy molding compound.
- Metal silicon junction, majority carrier conduction.
- Low power loss, high efficiency.
- High current capability.
- For use in low voltage, high frequency inverters free wheeling, and polarity protection applications.

### Mechanical data

- Case: TO-263/D2PAK, molded plastic.
- Terminals: Solder plated, solderable per MIL-STD-750, method 2026.
- Polarity: As marked.
- Mounting position: Any.



### Circuit Diagram



### Maximum Ratings and Electrical Characteristics (at $T_A=25^\circ\text{C}$ , unless otherwise specified)

Single phase, half wave, 60Hz, resistive or inductive load. For capacitive load, derate current by 20%.

Parameter	Symbol	MBR2040CGD-HF	MBR2060CGD-HF	MBR20100CGD-HF	MBR20150CGD-HF	MBR20200CGD-HF	Unit
Max. recurrent peak reverse voltage	$V_{RRM}$	40	60	100	150	200	V
Max. RMS voltage	$V_{RMS}$	28	42	70	105	140	V
Max. DC blocking voltage	$V_{DC}$	40	60	100	150	200	V
Max. average forward current (see Fig.1)	$I_{F(AV)}$	20					A
Peak forward surge current: 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	$I_{FSM}$	150					A
Max. forward voltage at 10A per leg	$V_F$	0.65	0.8	0.85	0.92		V
Junction capacitance (Note 1)	$C_J$	700	500	400	300	250	pF
Max. DC reverse current at $T_J=25^\circ\text{C}$ Rated DC blocking voltage $T_J=125^\circ\text{C}$	$I_R$	0.05 20					mA
Typical thermal resistance	$R_{\theta JC}$	9					$^\circ\text{C/W}$
Operating junction and storage temperature range	$T_J, T_{STG}$	-50 to +150			-55 to +175		$^\circ\text{C}$

Notes: 1. Measured at 1MHz and applied reverse voltage of 4VDC.

## Rating and Characteristics Curves (MBR2040CGD-HF Thru. MBR20200CGD-HF)

Fig.1 - Forward Current Derating Curve

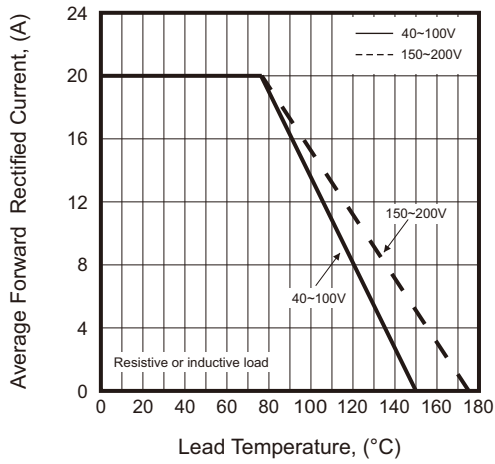


Fig.2 - Maximum Non-Repetitive Forward Surge Current

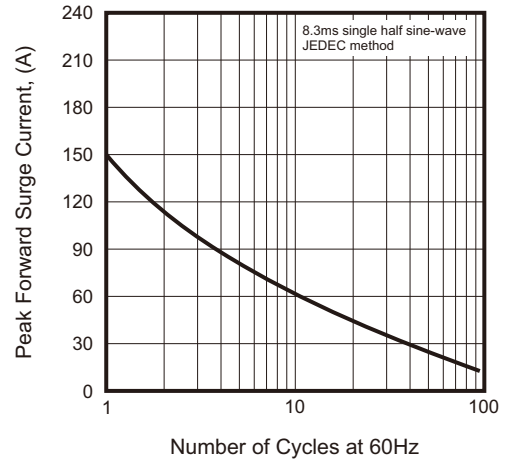


Fig.3 - Typical Reverse Characteristics

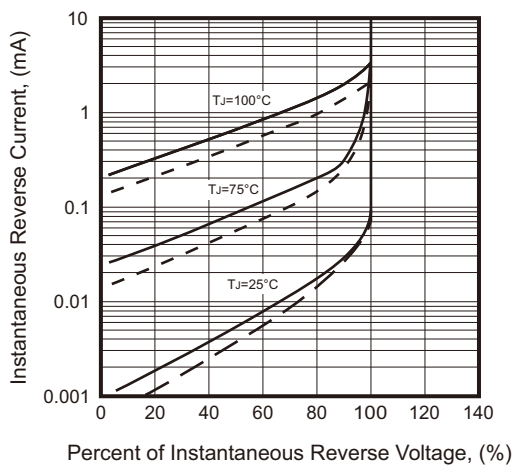
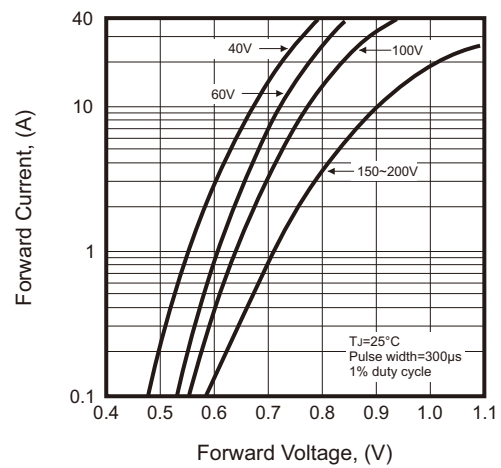
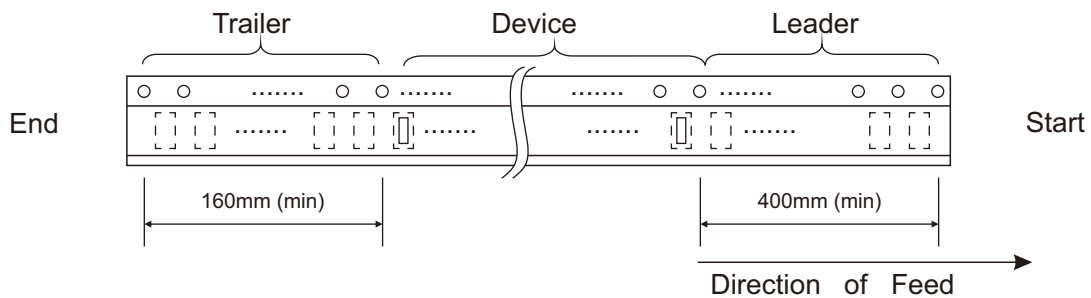
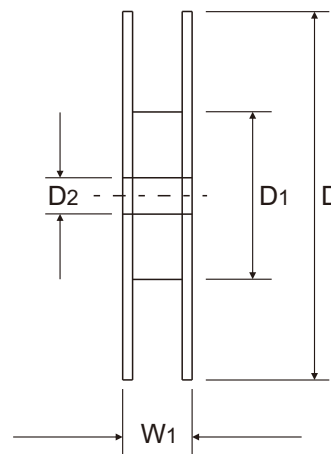
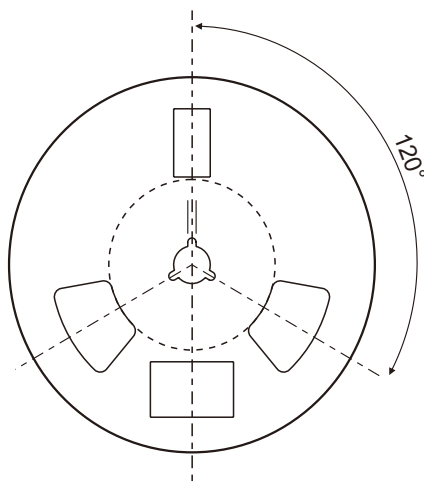
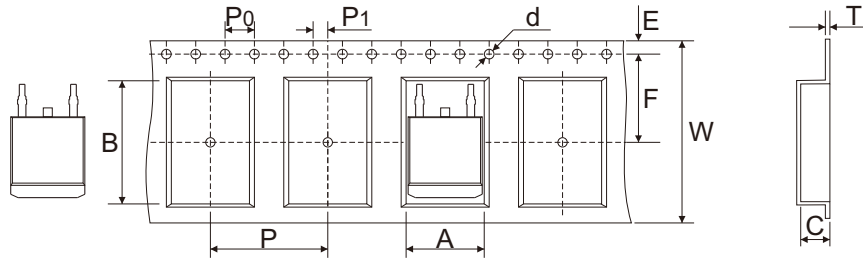


Fig.4 - Typical Instantaneous Forward Characteristics



## Reel Taping Specification

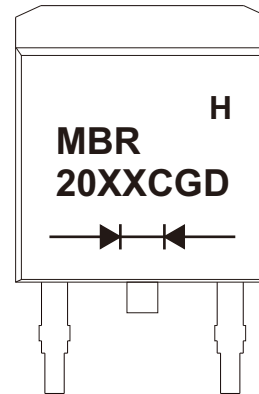


TO-263 /D2PAK	SYMBOL	A	B	C	d	D	D1	D2
	(mm)	10.80 ± 0.10	16.13 ± 0.10	5.21 ± 0.10	1.55 ± 0.05	330 ± 1.00	100 + 0.50	14.00 + 0.50
	(inch)	0.425 ± 0.004	0.635 ± 0.004	0.205 ± 0.004	0.061 ± 0.002	12.992 ± 0.039	3.937 + 0.020	0.551 + 0.020

TO-263 /D2PAK	SYMBOL	E	F	P	P0	P1	T	W	W1
	(mm)	1.75 ± 0.10	11.50 ± 0.10	16.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.10	0.356 ± 0.013	24.00 + 0.30 - 0.10	28.50 + 0.50
	(inch)	0.069 ± 0.004	0.453 ± 0.004	0.630 ± 0.004	0.157 ± 0.004	0.079 ± 0.004	0.014 ± 0.001	0.945 + 0.012 - 0.004	1.122 + 0.020

## Marking Code

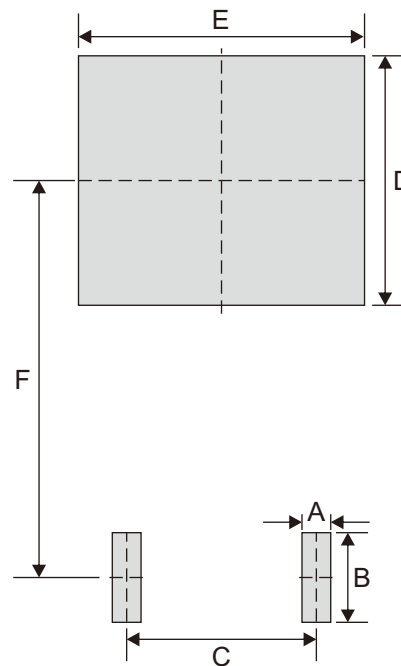
Part Number	Marking Code
MBR2040CGD-HF	MBR2040CGD
MBR2060CGD-HF	MBR2060CGD
MBR20100CGD-HF	MBR20100CGD
MBR20150CGD-HF	MBR20150CGD
MBR20200CGD-HF	MBR20200CGD



xx/xxx = Marking code

## Suggested P.C.B. PAD Layout

SIZE	TO-263/D2PAK	
	(mm)	(inch)
A	0.77	0.030
B	2.40	0.094
C	5.08	0.200
D	6.68	0.263
E	7.66	0.302
F	10.63	0.419



## Standard Packaging

Case Type	REEL PACK	
	REEL (pcs)	Reel Size (inch)
TO-263/D2PAK	800	13