

Features

- Low power loss, high efficiency
- High surge capability
- Guardring for overvoltage protection
- Metal silicon junction, majority carrier conduction
- RoHS compliant with Halogen-free

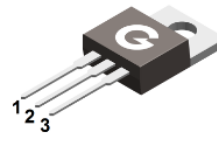
HF

Typical Applications

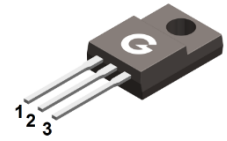
Device optimized for low forward voltage drop to maximize efficiency in power supply applications

Mechanical Data

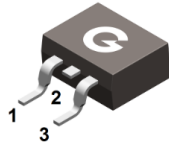
- Case: TO-220AB, ITO-220AB, TO-263
- Molding compound: UL flammability classification rating 94V-0
- Terminals: Tin-plated; solderability per MIL-STD-202, Method 208



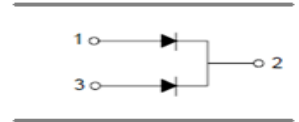
MBR20100CT
TO-220AB



MBRF20100CT
ITO-220AB



MBRB20100CT
TO-263



Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
MBR20100CT	TO-220AB	50 pcs / Tube	MBR20100CT
MBRF20100CT	ITO-220AB	50 pcs / Tube	MBRF20100CT
MBRB20100CT	TO-263	50 pcs / Tube or 800 pcs / Tape & Reel	MBRB20100CT

Maximum Ratings (@ T_A = 25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	V _{RRM}	100	V
RMS Reverse Voltage	V _{RMS}	70	V
DC Blocking Voltage	V _{DC}	100	V
Maximum Average Forward Output Current	I _{F(AV)}	20	A
Peak Forward Surge Current (8.3ms single half sine-wave)	I _{FSM}	150	A

Thermal Characteristics

Parameter	Symbol	MBR20100CT	MBRF20100CT	MBRB20100CT	Unit
Thermal Resistance (Junction-to-Case) *1	$R_{\theta JC}$	2	4	3	$^{\circ}\text{C}/\text{W}$
Junction Temperature Range	T_J	-55 ~ +150			$^{\circ}\text{C}$
Storage Temperature Range	T_{STG}	-55 ~ +150			$^{\circ}\text{C}$

Electrical Characteristics (@ $T_A = 25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Forward Voltage	V_F *2	$I_F = 10\text{A}, T_J = 25^{\circ}\text{C}$	-	-	0.84	V
		$I_F = 10\text{A}, T_J = 125^{\circ}\text{C}$	-	0.63	0.75	
Maximum Peak Reverse Current	I_R *2	$V_R = \text{Rated } V_{RRM}, T_J = 25^{\circ}\text{C}$	-	-	10	μA
		$V_R = \text{Rated } V_{RRM}, T_J = 125^{\circ}\text{C}$	-	1.3	5	mA

Notes:

- The data tested by surface mounted on a 5cm * 5cm * 2.3cm aluminum heatsink
- Pulse width < 380 μs , Duty cycle < 2%

Ratings and Characteristic Curves (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

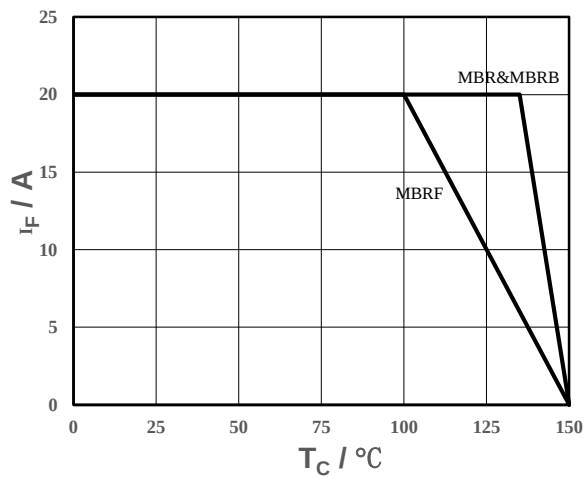


Fig 1 Current Derating Curve

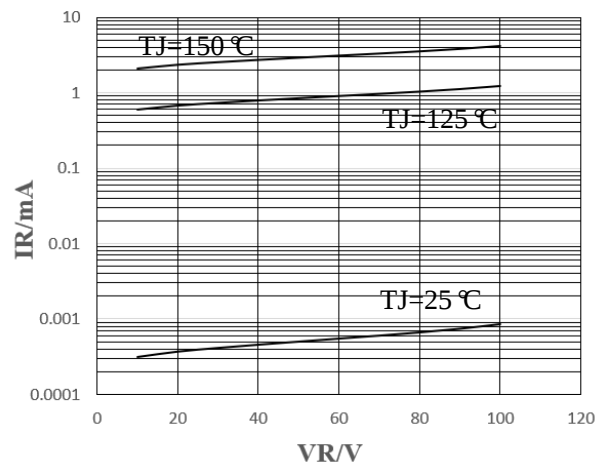


Fig 2 Typical Reverse Characteristic

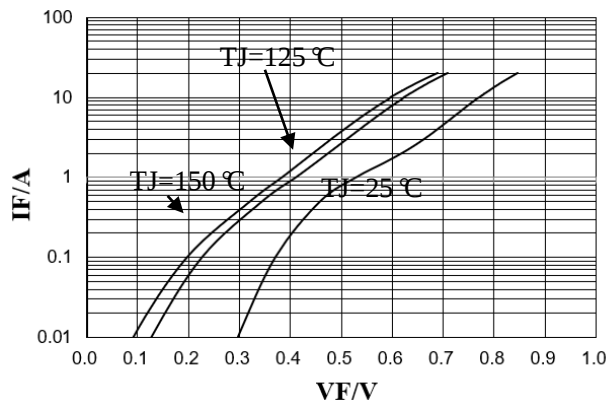
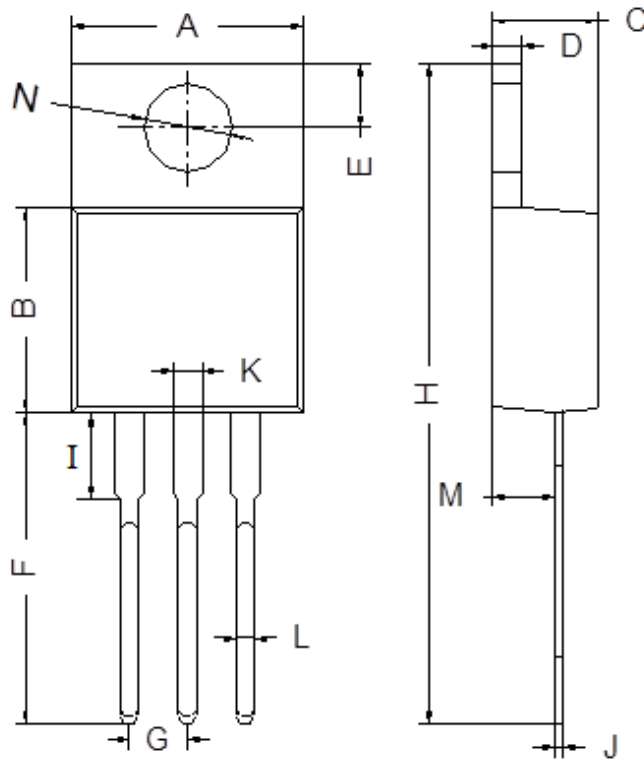
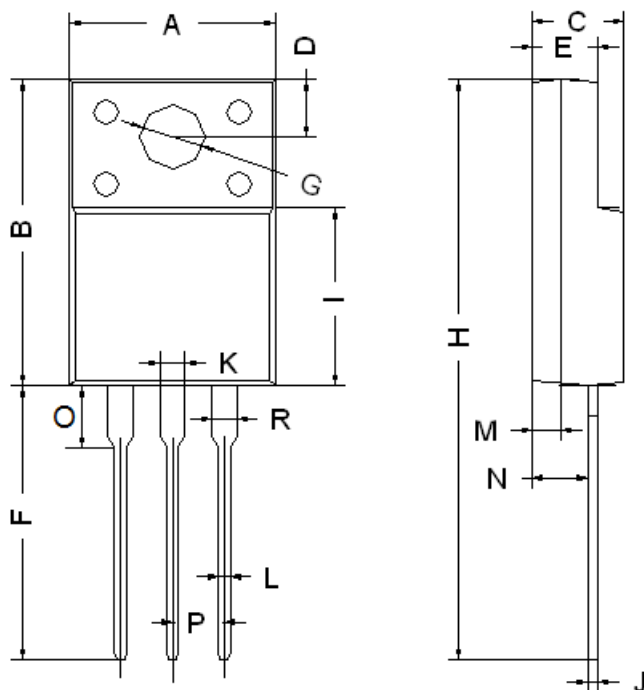


Fig 3 Forward Characteristics

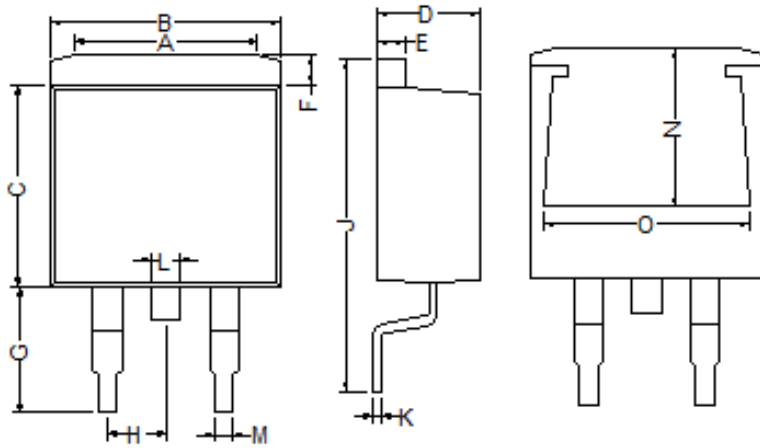
Package Outline Dimensions (Unit: mm)



TO-220AB		
Dimension	Min.	Max.
A	9.80	10.30
B	8.70	9.10
C	4.37	4.77
D	1.07	1.47
E	2.64	2.84
F	13.14	13.74
G	2.44	2.64
H	28.03	28.83
I	3.50	4.00
J	0.28	0.48
K	1.22	1.32
L	0.71	0.91
M	2.40	2.60
N	3.76	3.96



ITO-220AB		
Dimension	Min.	Max.
A	9.90	10.30
B	14.80	15.20
C	4.30	4.70
D	2.50	2.90
E	2.80	3.30
F	13.00	13.60
G	3.10	3.30
H	28.00	28.60
I	7.90	8.90
J	0.40	0.60
L	0.70	0.90
M	1.30	1.50
N	2.60	2.80
O	2.60	3.10
P	2.45	2.65
K/R	1.10	1.30



TO-263		
Dimension	Min.	Max.
A	6.00	8.00
B	9.90	10.30
C	8.50	9.10
D	4.37	4.77
E	1.07	1.47
F	1.07	1.47
G	5.05	5.74
H	2.44	2.66
J	15.15	15.80
K	0.28	0.48
L	1.17	1.37
M	0.71	0.91
N	6.55	7.68
O	7.70	8.10

Mounting Pad Layout (Unit: mm)

TO-263

