

Features

- Metal-Semiconductor junction with guard ring
- Epitaxial construction
- Low forward voltage drop, low switching losses.
- High surge capacity
- RoHS compliant with Halogen-free

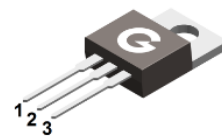
HF

Typical Applications

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

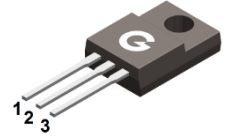
Mechanical Data

- Case: TO-220AB, ITO-220AB, TO-263, TO-252, TO-251
- Molding compound: UL flammability classification rating 94V-0
- Terminals: Tin-plated; solderability per MIL-STD-202, Method 208



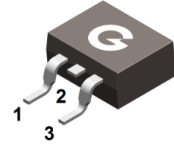
MBR10150CT

TO-220AB



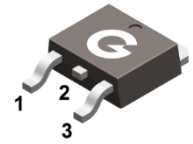
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ITO-220AB



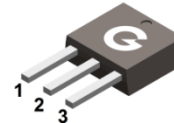
MBRB10150CT

TO-263



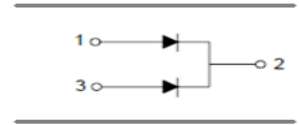
MBRD10150CT

TO-252



MBRI10150CT

TO-251



Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
MBR10150CT	TO-220AB	50 pcs / Tube	MBR10150CT
MBRF10150CT	ITO-220AB	50 pcs / Tube	MBRF10150CT
MBRB10150CT	TO-263	50 pcs / Tube or 800 pcs / Tape & Reel	MBRB10150CT
MBRD10150CT	TO-252	80 pcs / Tube or 2500 pcs / Tape & Reel	MBRD10150CT
MBRI10150CT	TO-251	80 pcs / Tube	MBRI10150CT

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

Parameter	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	V _{RRM}	150	V
RMS Reverse Voltage	V _{RMS}	105	V
DC Blocking Voltage	V _{DC}	150	V
Maximum Average Forward Output Current, per leg	I _{F(AV)}	5	A
Maximum Average Forward Output Current, per device		10	A
Peak Forward Surge Current (8.3ms single half sine-wave)	I _{FSM}	120	A

Thermal Characteristics

Parameter	Symbol	MBR10 150CT	MBRF1 0150CT	MBRB1 0150CT	MBRD1 0150CT	MBRI10 150CT	Unit
Thermal Resistance (Junction-to-Case)	$R_{\theta JC}$	2	4	3	6	6	$^{\circ}\text{C}/\text{W}$
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
Reverse Breakdown Voltage	$V_{(BR)R}$	$I_R = 100\mu\text{A}$	150	-	-	V
Forward Voltage	V_F	$I_F = 5\text{A}, T_J = 25^{\circ}\text{C}$	-	-	0.89	V
		$I_F = 5\text{A}, T_J = 125^{\circ}\text{C}$	-	-	0.81	
Maximum Peak Reverse Current	I_R	$V_R = \text{Rated } V_{RRM}, T_J = 25^{\circ}\text{C}$	-	-	10	μA
		$V_R = \text{Rated } V_{RRM}, T_J = 125^{\circ}\text{C}$	-	-	5	mA

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

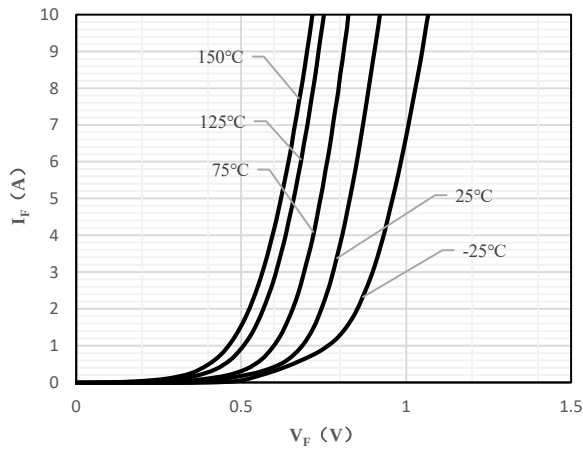


Fig 1 Typical Forward Characteristic

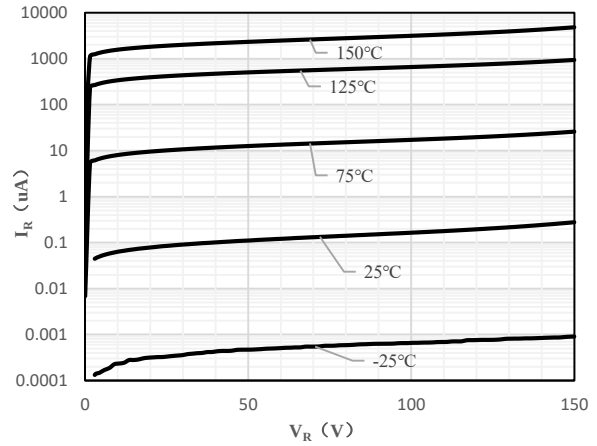


Fig 2 Typical Reverse Characteristic

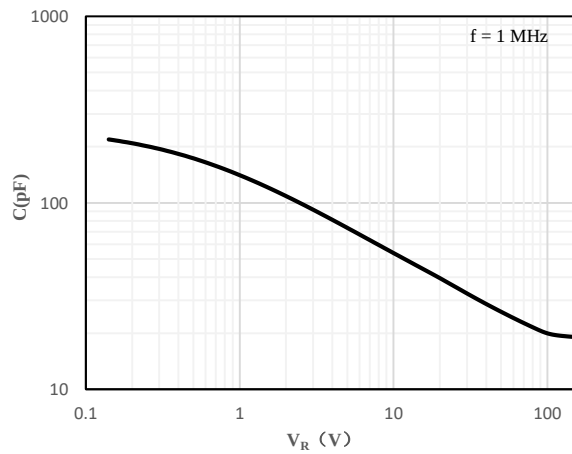


Fig 3 Typical Capacitance Characteristic

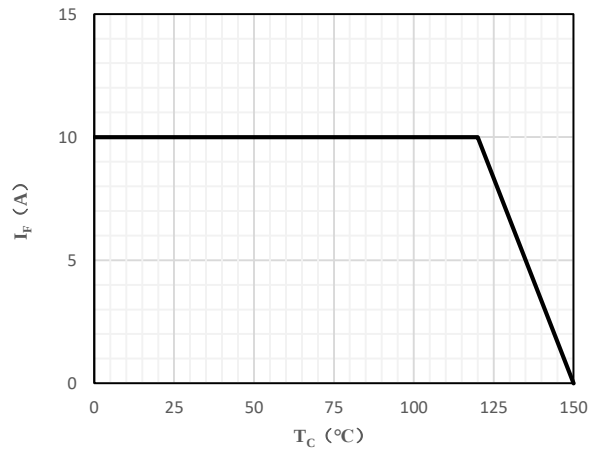


Fig 4 Current Derating Curve (TO-251, TO-252)

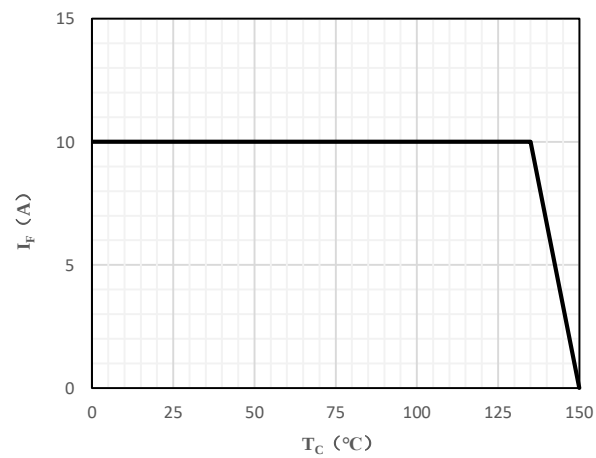


Fig 5 Current Derating Curve (TO-263, TO-220AB)

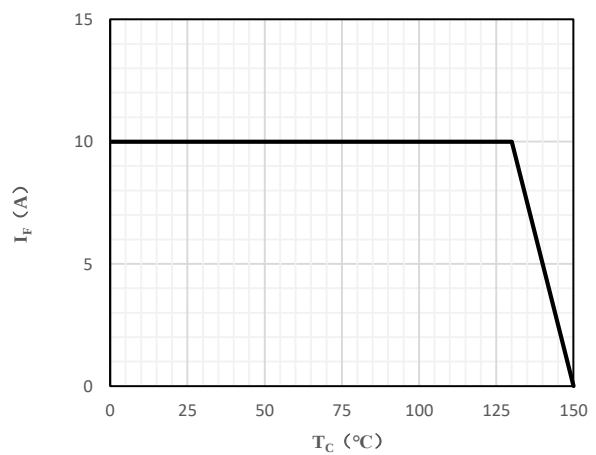
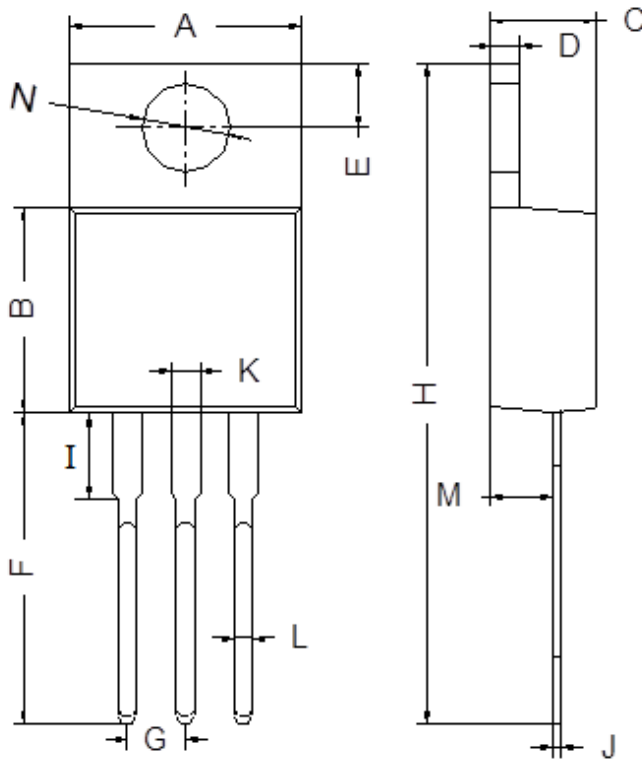
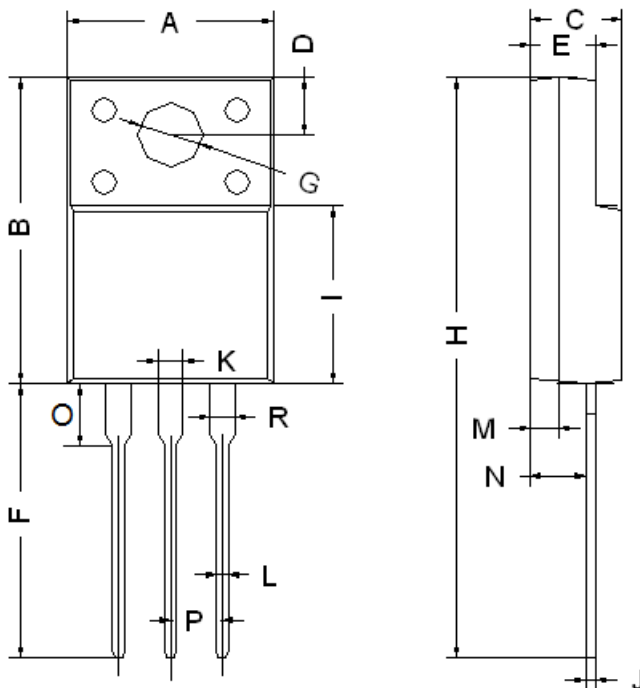


Fig 6 Current Derating Curve (ITO-220AB)

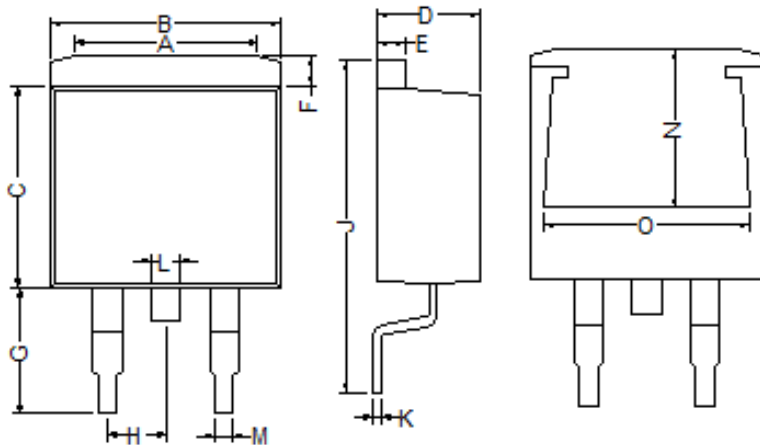
Package Outline Dimensions (Unit: mm)



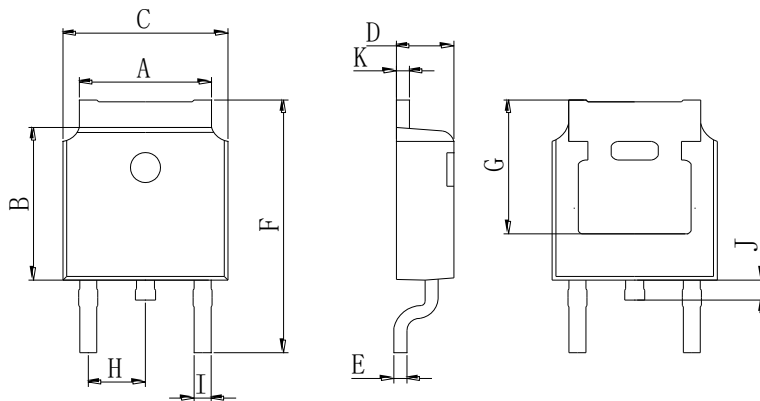
TO-220AB		
Dimension	Min.	Max.
A	9.80	10.30
B	8.70	9.10
C	4.37	4.77
D	1.07	1.47
E	2.64	2.84
F	13.14	13.74
G	2.44	2.64
H	28.03	28.83
I	3.50	4.00
J	0.28	0.48
K	1.22	1.32
L	0.71	0.91
M	2.40	2.60
N	3.76	3.96



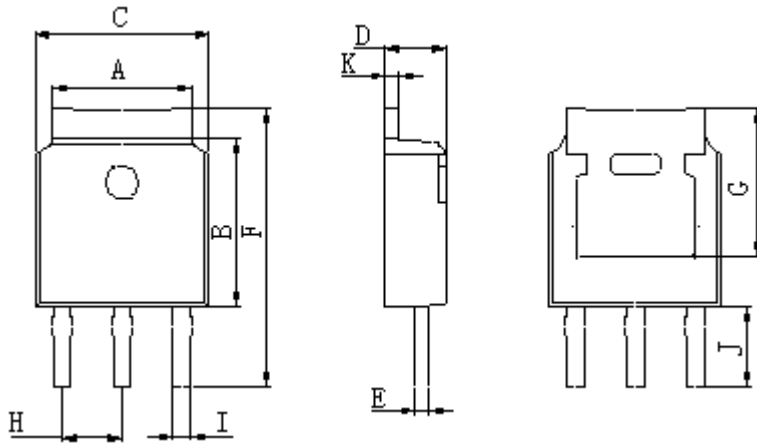
ITO-220AB		
Dimension	Min.	Max.
A	9.90	10.30
B	14.80	15.20
C	4.30	4.70
D	2.50	2.90
E	2.80	3.30
F	13.00	13.60
G	3.10	3.30
H	28.00	28.60
I	7.90	8.90
J	0.40	0.60
L	0.70	0.90
M	1.30	1.50
N	2.60	2.80
O	2.60	3.10
P	2.45	2.65
K/R	1.10	1.30



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



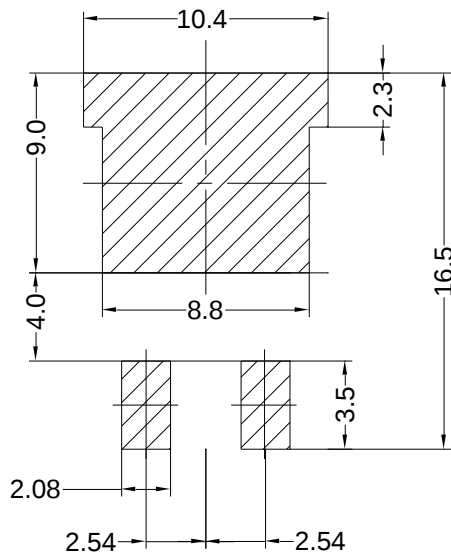
TO-252		
Dimension	Min.	Max.
A	5.05	5.65
B	5.80	6.40
C	6.25	6.85
D	2.20	2.40
E	0.40	0.60
F	9.71	10.31
G	5.05	5.65
H	2.10	2.50
I	0.70	0.90
J	0.50	0.70
K	0.40	0.60



TO-251		
Dimension	Min.	Max.
A	5.05	5.65
B	5.80	6.40
C	6.25	6.85
D	2.20	2.40
E	0.40	0.60
F	11.00	11.60
G	5.05	5.65
H	2.10	2.50
I	0.70	0.90
J	4.00	4.40
K	0.40	0.60

Mounting Pad Layout (Unit: mm)

TO-263



TO-252

