

### Features

- Low power loss, high efficiency.
- High surge capability.
- Guardring for overvoltage protection.
- Metal silicon junction, majority carrier conduction.

**HF**

### Typical Applications

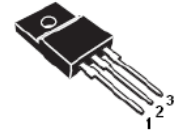
Device optimized for low forward voltage drop to maximize efficiency in Power Supply applications.

### Mechanical Data

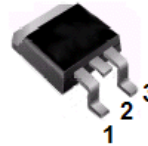
- Case: TO-220AB、ITO-220AB、TO-263、TO-251、TO-252
- Molding compound, UL flammability classification rating 94V-0.
- Terminals: Matte tin plated leads, solderable per MIL-STD-202, Method 208.



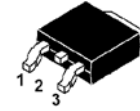
**MBR10100CT**  
TO-220AB



**MBRF10100CT**  
ITO-220AB



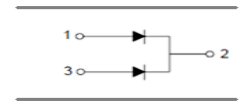
**MBRB10100CT**  
TO-263



**MBRD10100CT**  
TO-252



**MBRI10100CT**  
TO-251



### Ordering Information

Part Number	Package	Shipping	Marking Code
MBR10100CT	TO-220AB	50 pcs / Tube	MBR10100CT
MBRF10100CT	ITO-220AB	50 pcs / Tube	MBRF10100CT
MBRB10100CT	TO-263	50 pcs / Tube or 800 pcs / Tape & Reel	MBRB10100CT
MBRD10100CT	TO-252	80 pcs / Tube or 2500 pcs / Tape & Reel	MBRD10100CT
MBRI10100CT	TO-251	80 pcs / Tube	MBRI10100CT

### Maximum Ratings (@T<sub>A</sub>=25°C unless otherwise specified)

Characteristic	Symbol	Value	Units
Peak repetitive reverse voltage	V <sub>RRM</sub>	100	V
RMS reverse voltage	V <sub>RMS</sub>	70	V
DC blocking voltage	V <sub>DC</sub>	100	V
Maximum average forward output current	I <sub>F(AV)</sub>	10	A
Peak forward surge current, 8.3ms single half-sine-wave	I <sub>FSM</sub>	120	A

### Thermal Characteristics

Parameter	Symbol	MBR10100 CT	MBRF10100 CT	MBRB10100 CT	MBRD(I)10100 CT	Units
Typical thermal resistance per leg	$R_{\theta JC}^*$	2	4	3	6	$^{\circ}C/W$
Operating junction temperature	$T_J$	150				$^{\circ}C$
Storage temperature range	$T_{STG}$	-55 to +150				$^{\circ}C$

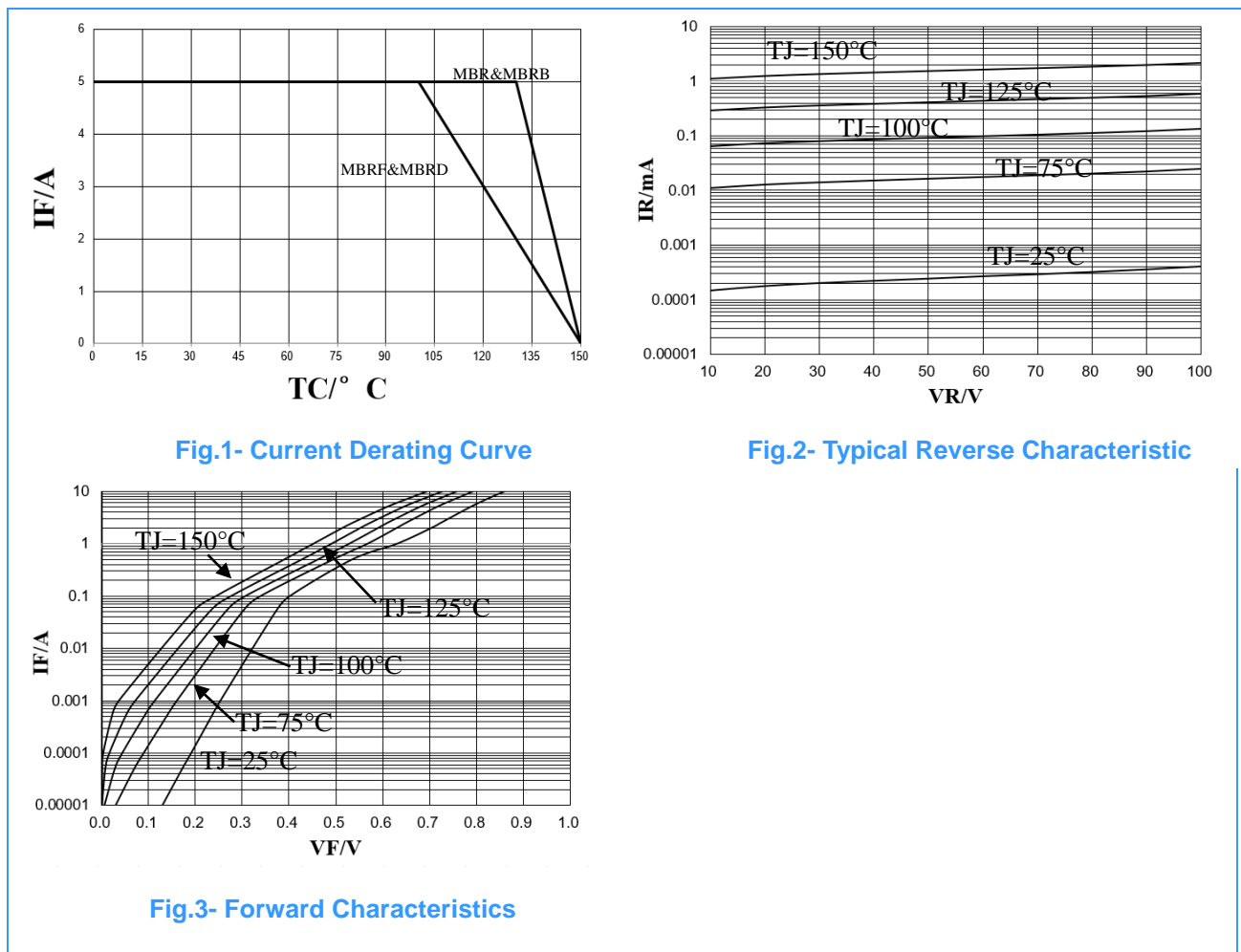
\* Device mounted on additional heatsink, (50mm x 50mm x 23mm Al heatsink).

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

Parameter	Symbol	Test conditions	Min.	Typ.	Max.	Units
Forward Voltage	$V_F^*$	$I_F=5A, T_J=25^{\circ}C$	-	-	0.85	V
		$I_F=5A, T_J=125^{\circ}C$	-	0.65	0.75	
Maximum Peak Reverse Current	$I_R^*$	$V_R= \text{Rated } V_{RRM}, T_J=25^{\circ}C$	-	-	0.1	mA
		$V_R= \text{Rated } V_{RRM}, T_J=125^{\circ}C$	-	0.6	5	mA

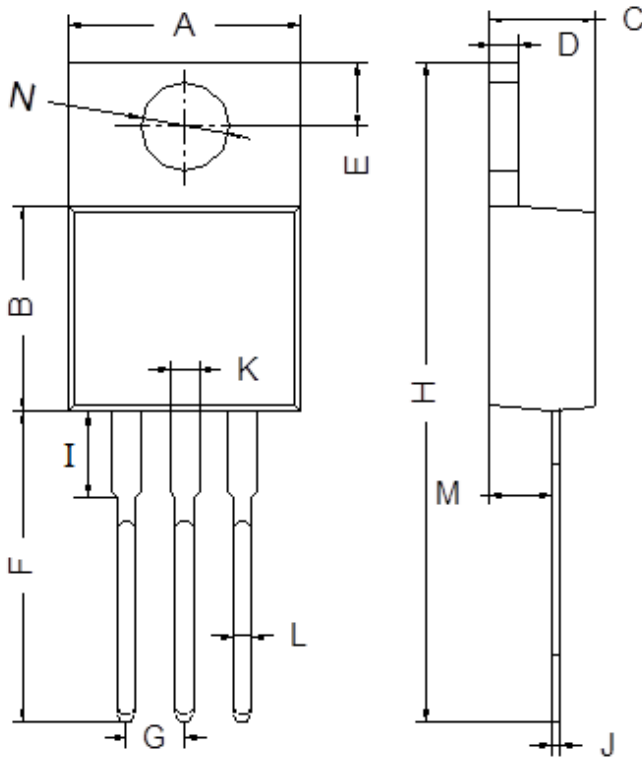
\*Pulse width < 300 uS, Duty cycle < 2%

### Ratings and Characteristic Curves ( $T_A=25^{\circ}C$ unless otherwise noted)



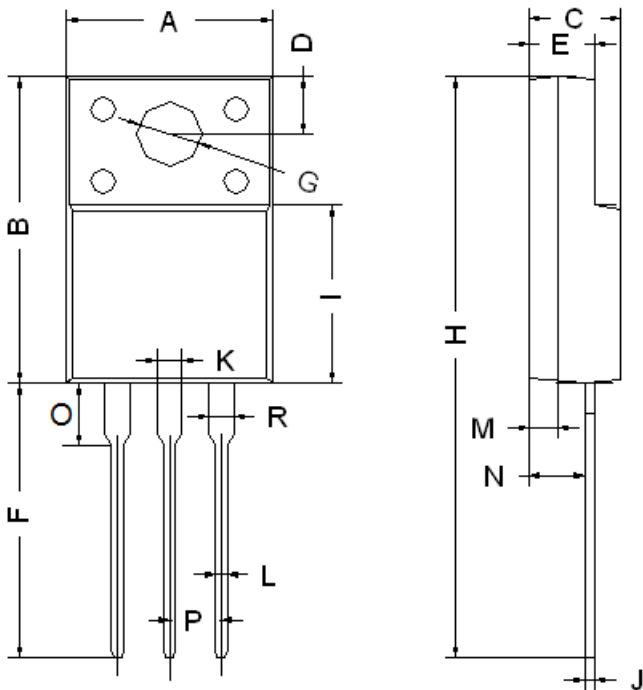
Package Outline Dimensions(unit:mm)

TO-220AB



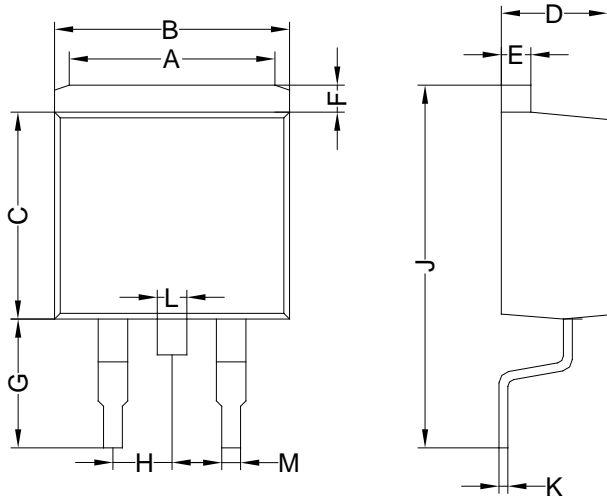
TO-220AB		
Dim	Min	Max
A	9.80	10.30
B	8.70	9.10
C	4.37	4.77
D	1.07	1.47
E	2.64	2.84
F	13.14	13.74
G	2.44	2.64
H	28.03	28.83
I	3.50	4.00
J	0.28	0.48
K	1.22	1.32
L	0.71	0.91
M	2.40	2.60
N	3.76	3.96

ITO-220AB



ITO-220AB		
Dim	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

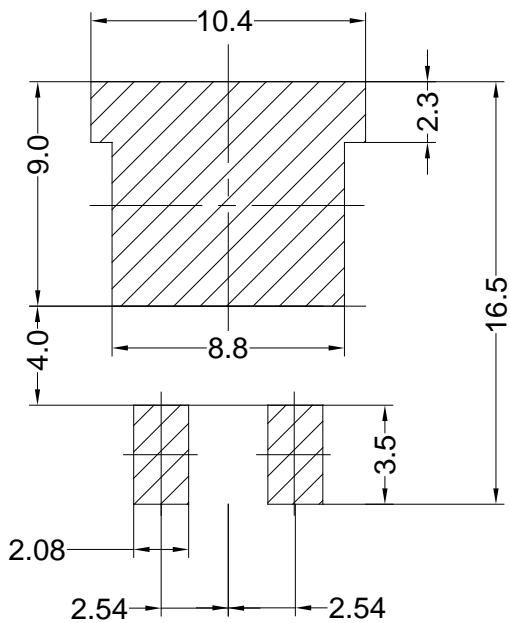
TO-263



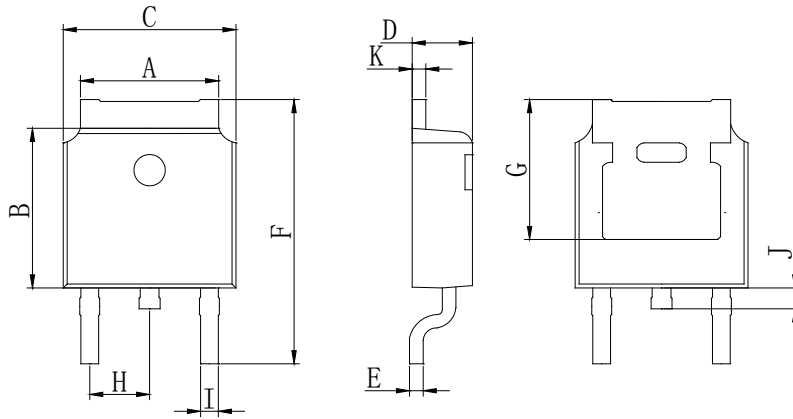
TO-263		
A	6.00	8.00
B	9.90	10.30
C	8.50	9.10
D	4.37	4.77
E	1.07	1.47
F	1.07	1.47
G	5.34	5.74
H	2.44	2.64
J	15.30	15.90
K	0.28	0.48
L	1.17	1.37
M	0.71	0.91

Mounting Pad Layout(unit:mm)

TO-263



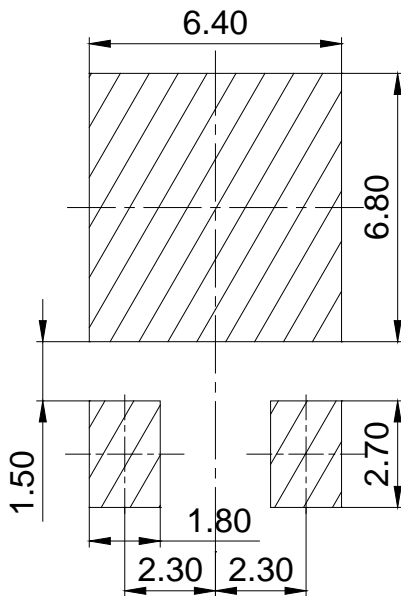
**TO-252**



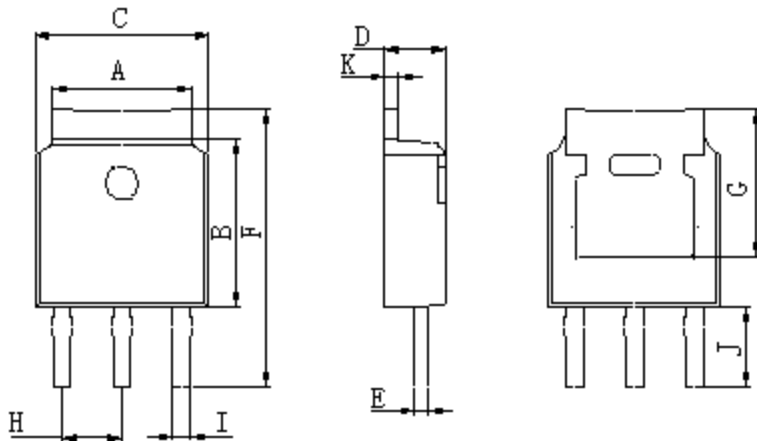
TO-252		
A	5.05	5.65
B	5.80	6.40
C	6.25	6.85
D	2.20	2.40
E	0.40	0.60
F	9.71	10.31
G	5.05	5.65
H	2.10	2.50
I	0.70	0.90
J	0.50	0.7
K	0.40	0.60

**Mounting Pad Layout**(unit:mm)

**TO-252**



**TO-251**



TO-251		
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	12.00	12.60
G	5.05	5.65
H	2.10	2.50
I	0.70	0.90
J	4.90	5.50
K	0.40	0.60

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