

Features

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

HF

Typical Applications

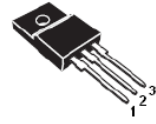
Device Optimized For Low Forward Voltage Drop to Maximize Efficiency in Power Supply Applications

Mechanical Data

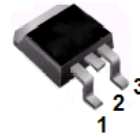
- Case: TO-220AB、ITO-220AB、TO-263
- Molding Compound, UL flammability Classification Rating 94V-0.
- Terminals: Matte Tin Plated Leads, Solderable Per MIL-STD-202, Method 208.



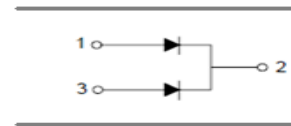
MBR2040CT
TO-220AB



MBRF2040CT
ITO-220AB



MBRB2040CT
TO-263



Ordering Information

Part Number	Package	Shipping	Marking Code
MBR2040CT	TO-220AB	50pcs / Tube	MBR2040CT
MBRF2040CT	ITO-220AB	50pcs / Tube	MBRF2040CT
MBRB2040CT	TO-263	50pcs / Tube or 800pcs / Tape & Reel	MBRB2040CT

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

Characteristic	Symbol	Value	Units
Peak repetitive reverse voltage	V _{RRM}	40	V
RMS reverse voltage	V _{RMS}	28	V
DC blocking voltage	V _{DC}	40	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	MBR2040CT	MBRF2040CT	MBRB2040CT	Units
Typical thermal resistance per leg	$R_{\theta JC}^*$	2	4	3	$^{\circ}C/W$
Operating junction temperature range	T_J	-55 to +150			$^{\circ}C$
Storage temperature range	T_{STG}	-55 to +150			$^{\circ}C$

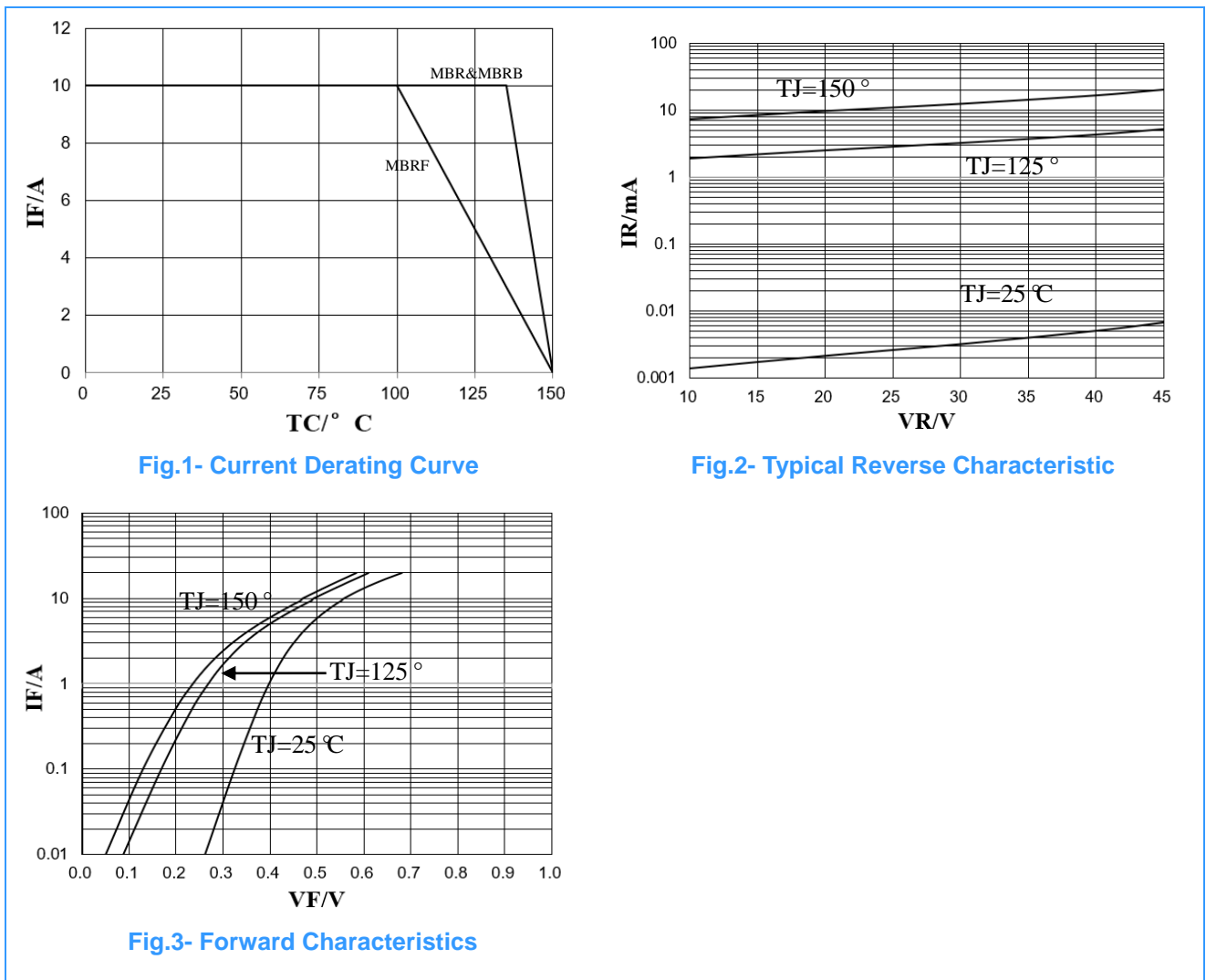
* Device mounted on additional heatsink, (50mm x 50mm x 23mm Al heatsink).

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

Parameter	Symbol	Test conditions	Min.	Typ.	Max.	Units
Forward Voltage	V_F^*	$I_F=10A, T_J=25^{\circ}C$	-	-	0.65	V
		$I_F=10A, T_J=125^{\circ}C$	-	-	0.57	
Maximum Peak Reverse Current	I_R^*	$V_R= \text{Rated } V_{RRM}, T_J=25^{\circ}C$	-	-	0.1	mA
		$V_R= \text{Rated } V_{RRM}, T_J=125^{\circ}C$	-	-	15	mA

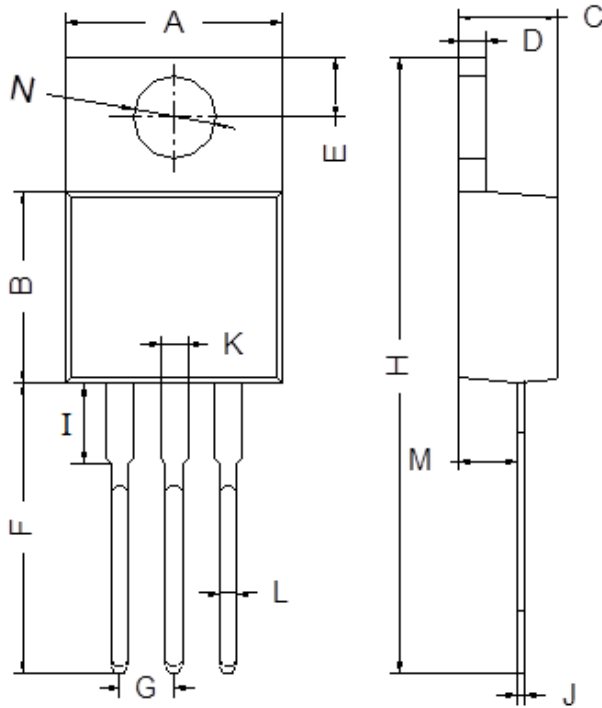
*Pulse width < 300 uS, Duty cycle < 2%

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



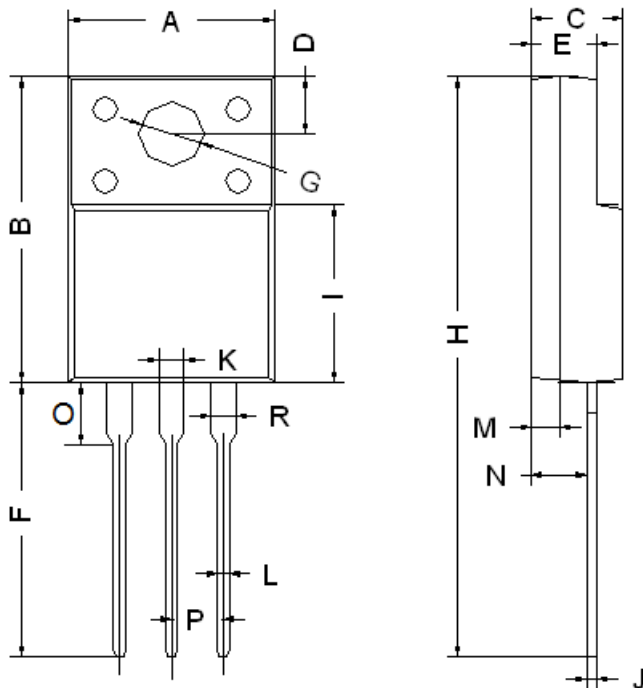
Package Outline Dimensions (unit: mm)

TO-220AB



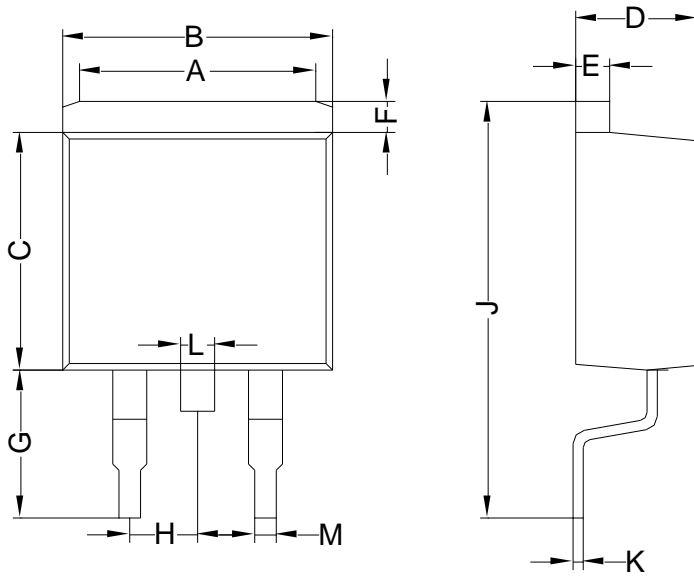
TO-220AB		
Dim	Min	Max
A	9.80	10.30
B	8.70	9.10
C	4.37	4.77
D	1.07	1.47
E	2.64	2.84
F	13.14	13.74
G	2.44	2.64
H	28.03	28.83
I	3.50	4.00
J	0.28	0.48
K	1.22	1.32
L	0.71	0.91
M	2.40	2.60
N	3.76	3.96

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

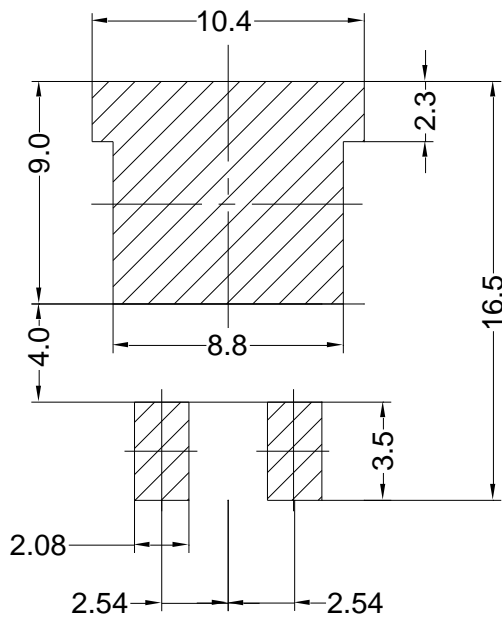
TO-263



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



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