



# MBR4045

## 主要参数 MAIN CHARACTERISTICS

$I_{F(AV)}$	40 (2×20) A
$V_{RRM}$	45 V
$T_j$	150 °C
$V_{F(max)}$	0.54V (@ $T_j=125^{\circ}C$ )

### 用途

- 高频开关电源
- 低压续流电路和保护电路

### 产品特性

- 共阴结构
- 低功耗，高效率
- 良好的高温特性
- 有过压保护环，高可靠性
- 环保 (RoHS) 产品

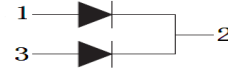
### APPLICATIONS

- High frequency switch power supply
- Free wheeling diodes, polarity protection applications

### FEATURES

- Common cathode structure
- Low power loss, high efficiency
- High Operating Junction Temperature
- Guard ring for overvoltage protection, High reliability
- RoHS product

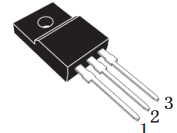
## 封装 Package



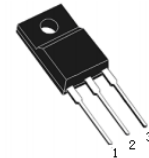
TO-220



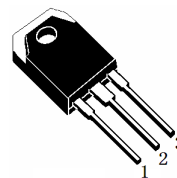
TO-220HF



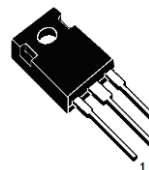
TO-220MF-K1



TO-3PB



TO-247



## 订货信息 ORDER MESSAGE

订货型号 Order codes				印 记 Marking	封 装 Package
有卤-条管 Halogen-Tube	无卤-条管 Halogen Free-Tube	有卤-编带 Halogen-Reel	无卤-编带 Halogen Free-Reel		
MBR4045-CA-B	MBR4045-CA-BR	N/A	N/A	MBR4045	TO-220
MBR4045-FA-B	MBR4045-FA-BR	N/A	N/A	MBR4045	TO-220HF
MBR4045-F1-B	MBR4045-F1-BR	N/A	N/A	MBR4045	TO-220MF-K1
MBR4045-GD-B	MBR4045-GD-BR	N/A	N/A	MBR4045	TO-3PB
MBR4045-GE-B	MBR4045-GE-BR	N/A	N/A	MBR4045	TO-247



**绝对最大额定值 ABSOLUTE RATINGS (Tc=25℃)**

项 目 Parameter		符 号 Symbol	数 值 Value	单 位 Unit
最大反向重复峰值电压 Repetitive peak reverse voltage		V <sub>RRM</sub>	45	V
最大直流阻断电压 Maximum DC blocking voltage		V <sub>DC</sub>	45	V
正向平均整流电流 Average forward current	T <sub>C</sub> =125℃ (TO-220, TO-3PB,TO-247)	整个器件 per device	40	A
	T <sub>C</sub> =100℃ (TO-220HF/220MF-K1)		20	
正向峰值浪涌电流 Surge non repetitive forward current (额定负载 8.3ms 半正弦波—按 JEDEC 方法) 8.3 ms single half-sine-wave (JEDEC Method)		I <sub>FSM</sub>	300	A
最高结温 Maximum junction temperature		T <sub>j</sub>	150	℃
储存温度 Storage temperature range		T <sub>STG</sub>	-40~+150	℃

**电特性 ELECTRICAL CHARACTERISTICS**

项 目 Parameter	测试条件 Tests conditions		最小值 Value(min)	典型值 Value(typ)	最大值 Value(max)	单 位 Unit
I <sub>R</sub>	T <sub>j</sub> =25℃	V <sub>R</sub> =V <sub>RRM</sub>			50	μA
	T <sub>j</sub> =125℃				40	mA
V <sub>F</sub>	T <sub>j</sub> =25℃	I <sub>F</sub> =10A		0.47	0.52	V
	T <sub>j</sub> =125℃			0.40	0.44	V
	T <sub>j</sub> =25℃	I <sub>F</sub> =20A		0.54	0.6	V
	T <sub>j</sub> =125℃			0.50	0.54	V

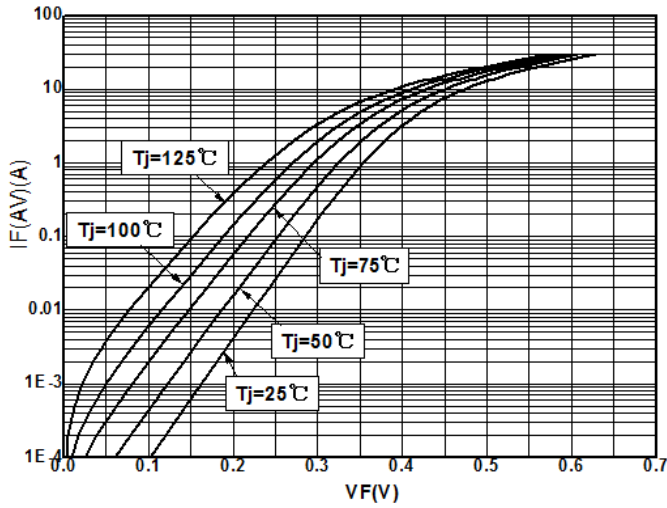
**热特性 THERMAL CHARACTERISTICS**

项 目 Parameter		符 号 Symbol	最小值 Value(min)	最大值 Value(max)	单 位 Unit
结到管壳的热阻 Thermal resistance from junction to case	TO-220	R <sub>th(j-c)</sub>		1.7	℃/W
	TO-3PB			1.9	
	TO-247			1.9	
	TO-220HF			2.4	
	TO-220MF-K1			3.5	

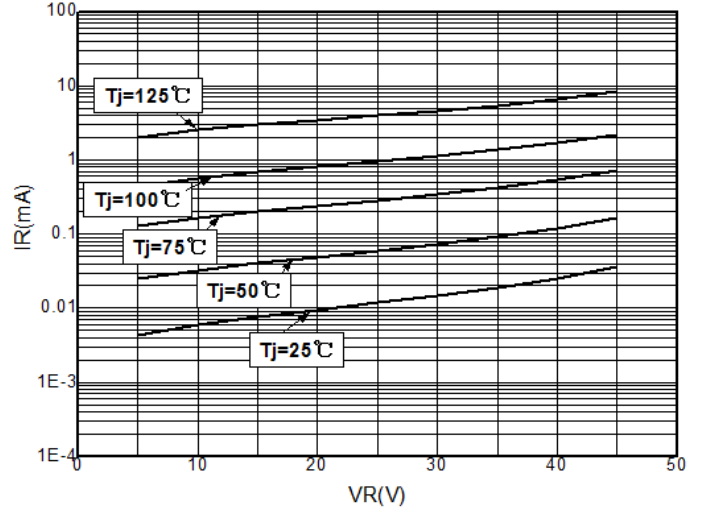


特征曲线 ELECTRICAL CHARACTERISTICS (curves)

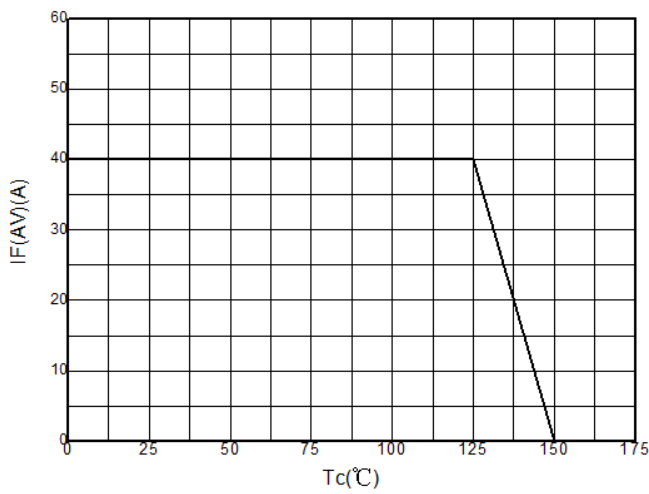
IF vs VF



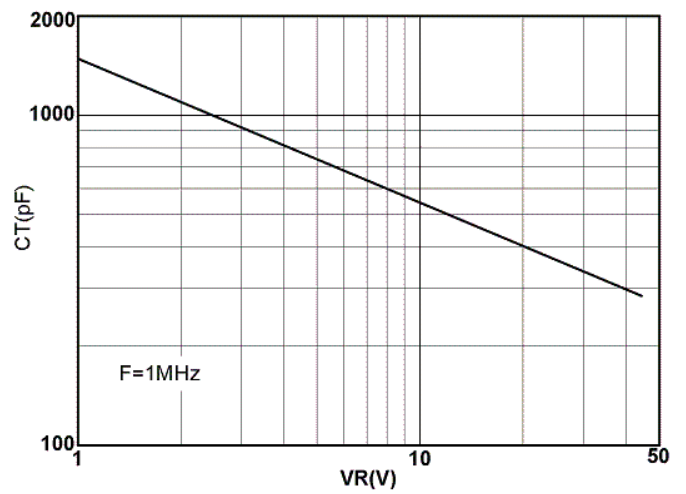
IR vs VR

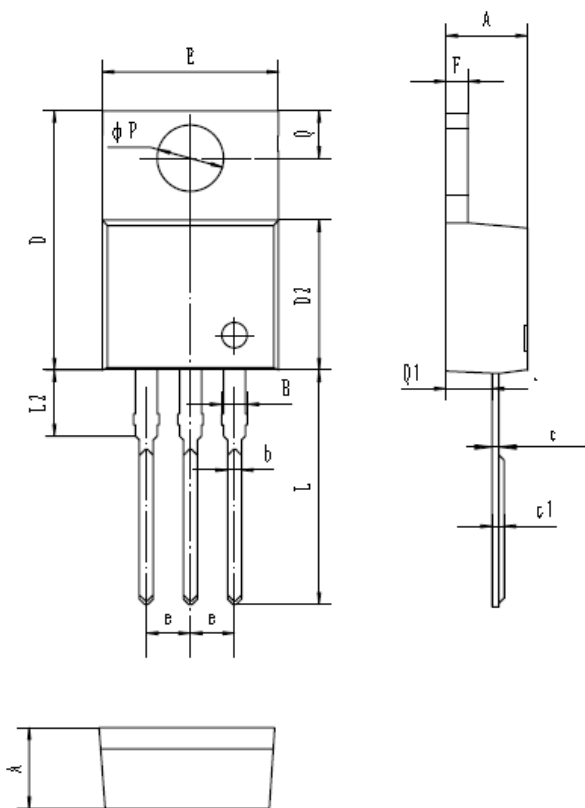


IF(AV) vs Tc

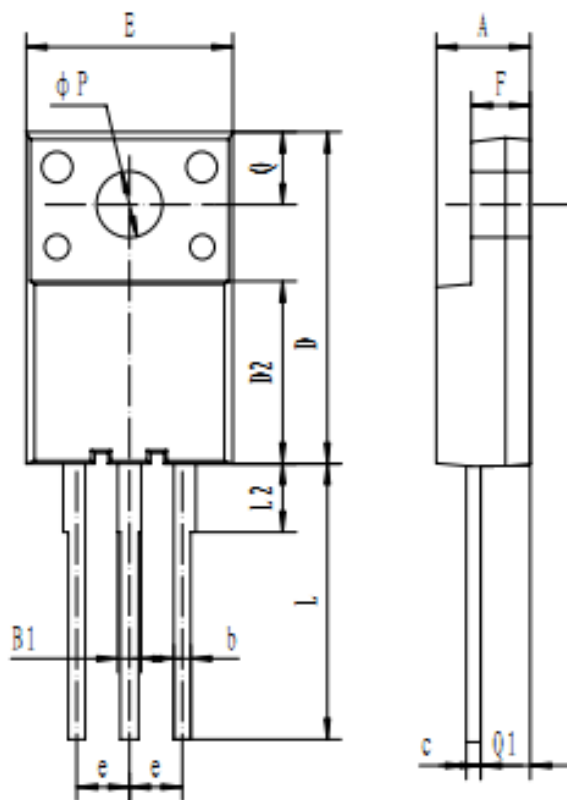


CT vs VR





符号 symbol	MIN	MAX
A	4.40	4.80
B	1.10	1.40
b	0.70	0.95
c	0.28	0.48
c1	0.32	0.52
D	14.45	16.00
D2	8.20	9.20
E	9.60	10.40
e	2.39	2.69
F	1.20	1.35
L	13.05	14.05
L2	3.70	3.90
Q	2.40	3.00
Q1	2.20	2.90
P	3.50	4.00

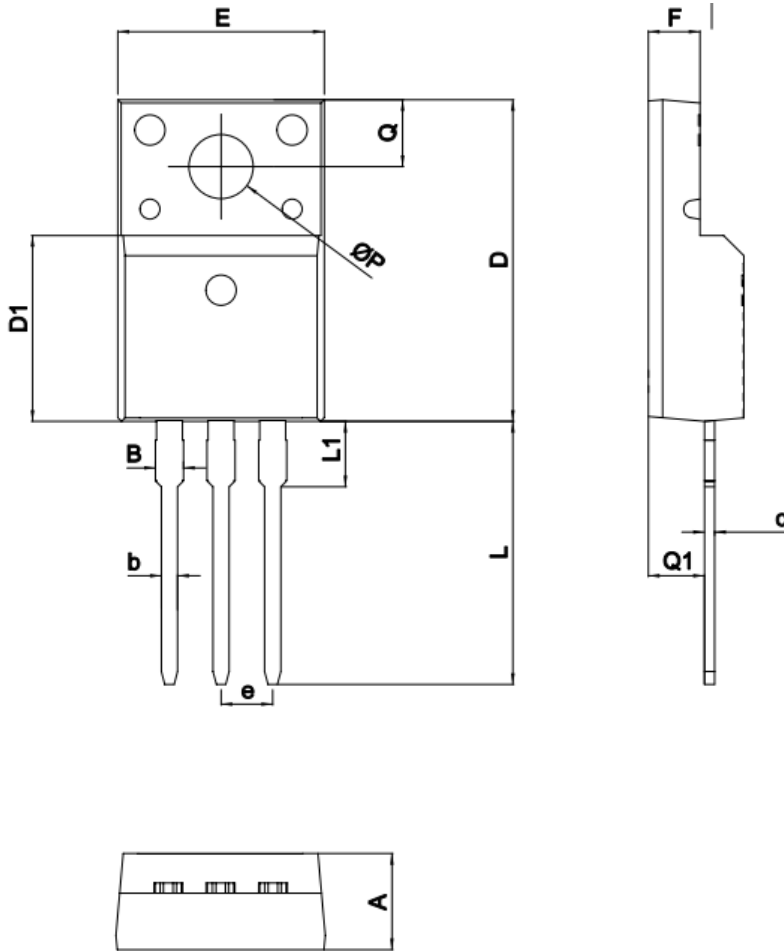


符号 Symbol	Min	Max
A	4.0	5.0
B1	0.87	1.27
b	0.72	0.92
c	0.5	0.70
D	15.0	16.5
D2	7.8	9.4
E	9.62	10.62
e	2.54(typ)	
F	2.3	3.3
L	12.0	14.0
L2	3.1	3.5
$\Phi P$	3.0	3.4
Q	3.15	3.55
Q1	2.2	2.5

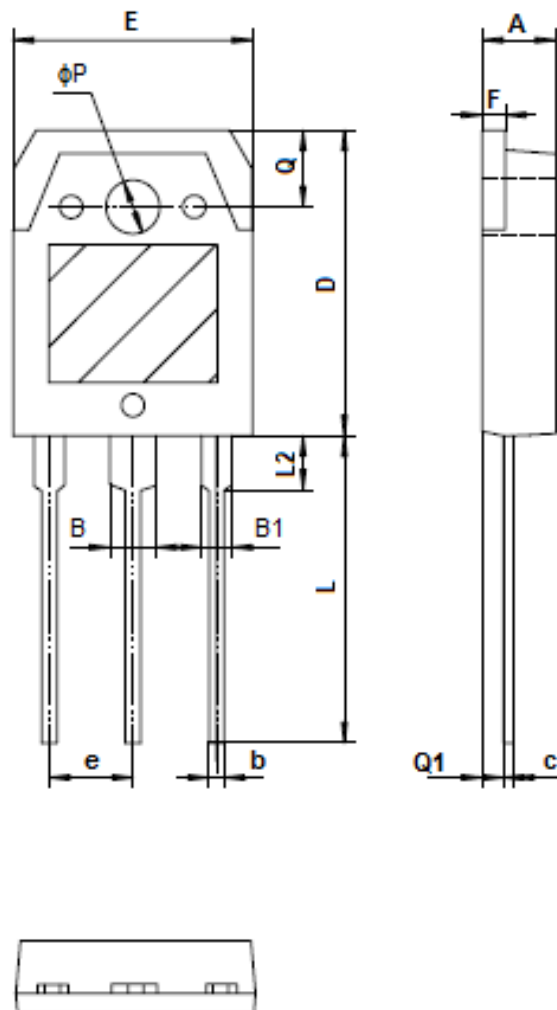


外形尺寸 PACKAGE MECHANICAL DATA  
TO-220MF-K1

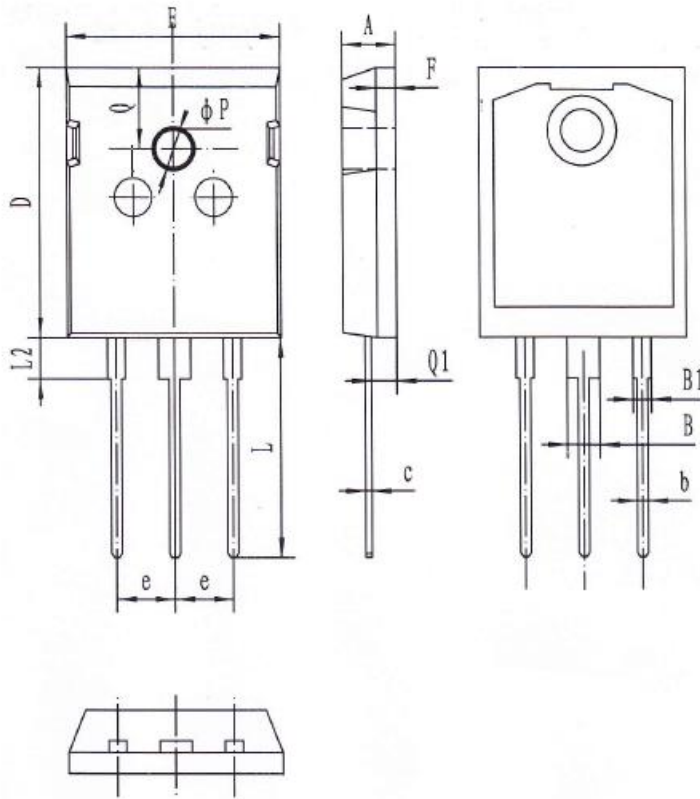
单位 Unit : mm



SYMBOL	mm	
	MIN	MAX
A	4.5	4.9
B	1.22	1.47
b	0.7	0.9
c	0.45	0.60
D	15.6	16.1
D1	9.0	9.3
e	2.54TYPE	
E	9.9	10.4
F	2.3	2.8
L	12.6	13.3
L1	3.1	3.4
Q	3.2	3.4
Q1	2.6	2.9
ΦP	3.0	3.5



符号 Symbol	MIN	MAX
A	4.60	5.00
B	2.90	3.20
B1	1.90	2.20
b	0.90	1.10
c	0.50	0.70
D	19.40	20.40
E	15.40	15.80
e	5.45(TYP)	
F	1.40	1.60
L	19.50	20.50
L2	3.30	3.70
Q	4.90	5.10
Q1	1.30	1.50
P	3.10	3.50



符号 symbol	MIN	MAX
A	4.90	5.10
B	2.85	3.11
B1	1.95	2.05
b	1.15	1.25
c	0.60TYP	
D	20.77	21.07
E	15.77	16.03
e	5.32	5.58
F	1.92	2.08
L	20.05	20.31
L2	4.22	4.32
Q	6.00	6.20
Q1	2.33	2.43
P	3.65	3.75





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3. Please do not exceed the absolute maximum ratings of the device when circuit designing.
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### 联系方式

#### 吉林华微电子股份有限公司

公司地址：吉林省吉林市深圳街 99 号

邮编：132013

总机：86-432-64678411

传真：86-432-64665812

网址：[www.hwdz.com.cn](http://www.hwdz.com.cn)

### CONTACT

#### JILIN SINO-MICROELECTRONICS CO., LTD.

ADD: No.99 Shenzhen Street, Jilin City, Jilin Province, China.

Post Code: 132013

Tel: 86-432-64678411

Fax: 86-432-64665812

Web Site: [www.hwdz.com.cn](http://www.hwdz.com.cn)