



MBR1040

主要参数 MAIN CHARACTERISTICS

I_F (AV)	10 (2×5) A
V_{RRM}	40 V
T_j	150 °C
V_F (max)	0.48V (@ $T_j=125^\circ\text{C}$)

用途

- 高频开关电源
- 低压续流电路和保护电路

产品特性

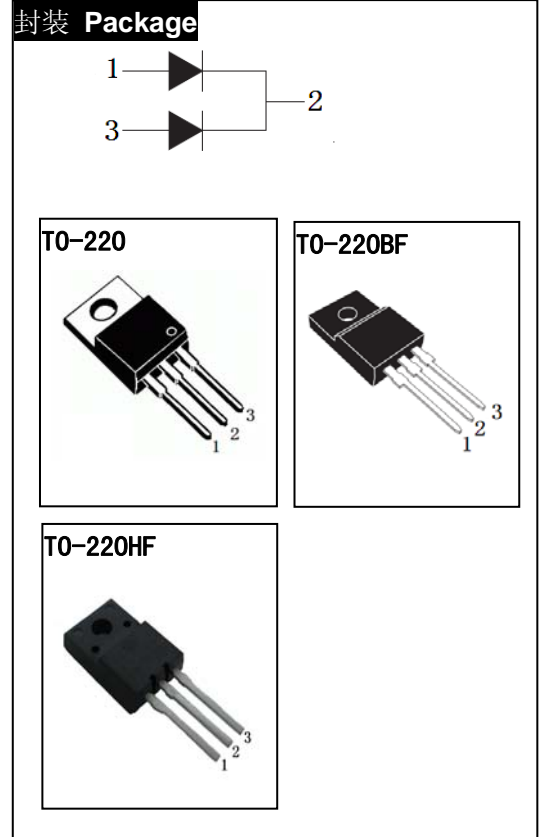
- 共阴结构
- 低功耗，高效率
- 良好的高温特性
- 有过压保护环，高可靠性
- 环保 (RoHS) 产品

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



订货信息 ORDER MESSAGE

订货型号 Order codes	印记 Marking	封装 Package	无卤素 Halogen Free	包 装 Packaging	器件重量 Device Weight
MBR1040Z	MBR1040	TO-220	否 NO	条管 Tube	1.98 g(typ)
MBR1040ZR	MBR1040	TO-220	是 YES	条管 Tube	1.98 g(typ)
MBR1040BF	MBR1040	TO-220BF	否 NO	条管 Tube	1.70 g(typ)
MBR1040BFR	MBR1040	TO-220BF	是 YES	条管 Tube	1.70 g(typ)
MBR1040HF	MBR1040	TO-220HF	否 NO	条管 Tube	1.70 g(typ)
MBR1040HFR	MBR1040	TO-220HF	是 YES	条管 Tube	1.70 g(typ)



**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_{RRM}	40	V
最大直流阻断电压 Maximum DC blocking voltage		V_{DC}	40	V
正向平均整流电流 Average forward current	$T_C=150^{\circ}\text{C}$ (TO-220)	整个器件 per device 单 侧 per diode	10	A
	$T_C=125^{\circ}\text{C}$ (TO-220BF, TO-220HF)		5	
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_{FSM}	80	A
最高结温 Maximum junction temperature		T_j	150	$^{\circ}\text{C}$
储存温度 Storage temperature range		T_{STG}	-40~+150	$^{\circ}\text{C}$

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_R	$T_j=25^{\circ}\text{C}$	$V_R=V_{RRM}$			50	μA
	$T_j=125^{\circ}\text{C}$				50	mA
V_F	$T_j=25^{\circ}\text{C}$	$I_F=5\text{A}$		0.52	0.58	V
	$T_j=125^{\circ}\text{C}$				0.48	V

热特性 THERMAL CHARACTERISTICS

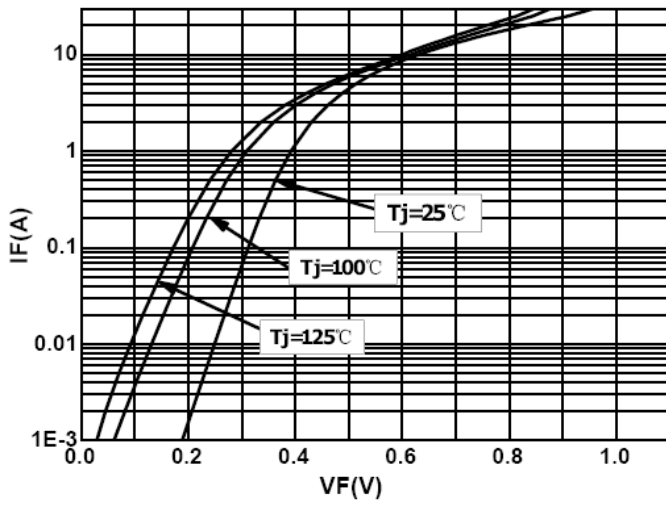
项 目 Parameter		符 号 Symbol	最小值 Value(min)	最大值 Value(max)	单 位 Unit
结到管壳的热阻 Thermal resistance from junction to case	TO-220 TO-220BF TO-220HF	$R_{th(j-c)}$		1.9 2.5 2.5	$^{\circ}\text{C}/\text{W}$



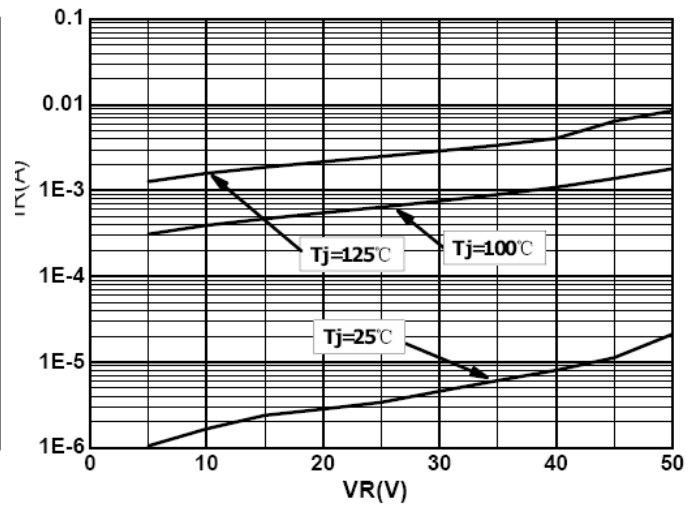


特征曲线 ELECTRICAL CHARACTERISTICS (curves)

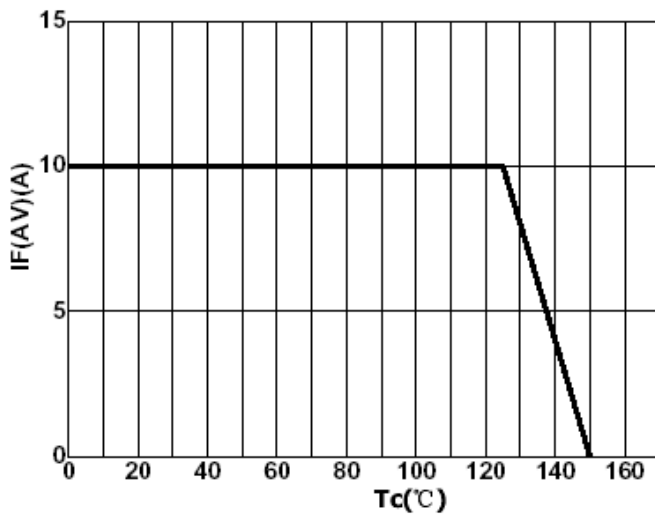
IF vs VF



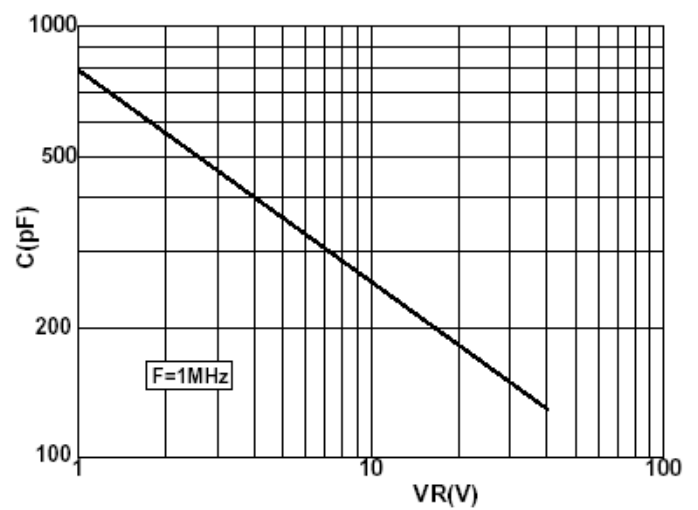
IR vs VR

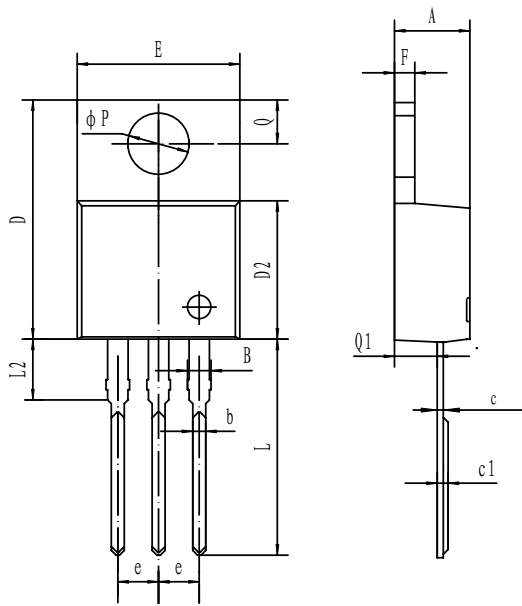


IF(AV) vs Tc



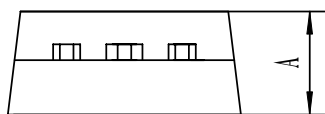
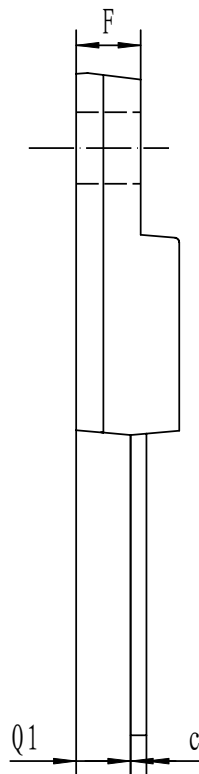
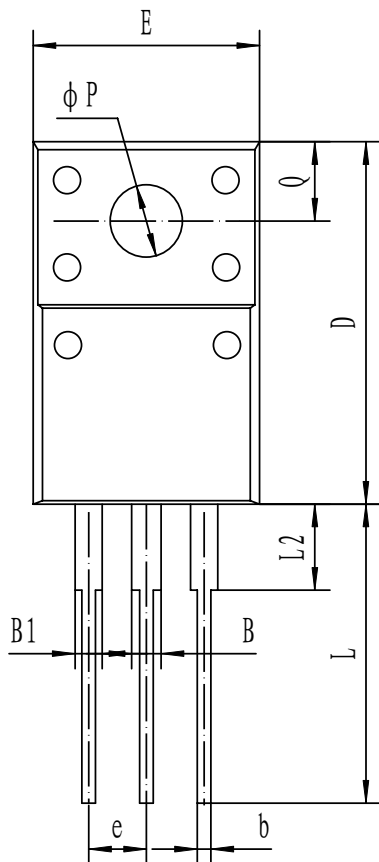
CT vs VR





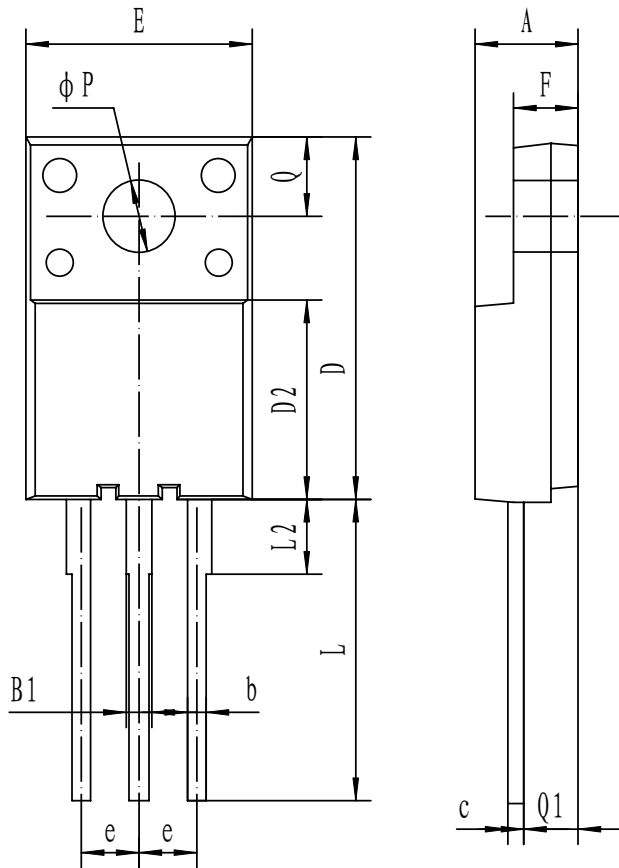
符号 symbol	MIN	MAX
A	4.40	4.80
B	1.10	1.40
b	0.70	0.95
c	0.28	0.48
c1	0.32	0.52
D	14.45	16.00
D2	8.20	9.20
E	9.60	10.40
e	2.39	2.69
F	1.20	1.35
L	13.05	14.05
L2	3.70	3.90
Q	2.40	3.00
Q1	2.20	2.90
P	3.50	4.00



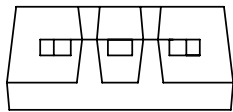


符号 Symbol	Min	Typ	Max
A	4.3	4.5	4.7
B	1.1	1.3	1.5
B1	1.0	1.2	1.4
b	0.55	0.65	0.75
c	0.5	0.6	0.75
D	14.5	15	15.5
E	9.7	10	10.3
e		2.54	
F	2.5	2.7	2.9
L	12.5	13.0	13.5
L2	3.5	4.0	4.5
ΦP	3.0	3.2	3.4
Q	2.8	3.0	3.2
Q1	2.4	2.6	2.8





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
ϕP	3.0	3.4
Q	3.15	3.55
Q1	2.2	2.5





注意事项

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3. 在电路设计时请不要超过器件的绝对最大额定值，否则会影响整机的可靠性。
4. 本说明书如有版本变更不另外告知

NOTE

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2. We strongly recommend customers check carefully on the trademark when buying our product, if there is any question, please don't be hesitate to contact us.
3. Please do not exceed the absolute maximum ratings of the device when circuit designing.
4. Jilin Sino-microelectronics co., Ltd reserves the right to make changes in this specification sheet and is subject to change without prior notice.

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附录 (Appendix): 修订记录 (Revision History)

日期 Date	旧版本 Last Rev.	新版本 New Rev.	修订内容 Description of Changes
2010-3-16	200911D	201003E	Added TO-220HF.

