



# HBR2060

## 主要参数 MAIN CHARACTERISTICS

$I_{F(AV)}$	20 (2×10) A
$V_{RRM}$	60 V
$T_j$	175 °C
$V_{F(max)}$	0.65V (@ $T_j=125^{\circ}C$ )

### 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

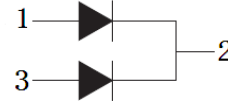
### APPLICATIONS

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

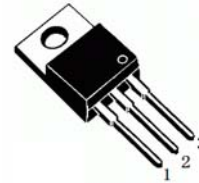
### FEATURES

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

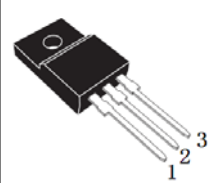
## 封装 Package



TO-220



TO-220F



TO-220HF



## 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
HBR2060Z	HBR2060	TO-220	否 NO	条管 Tube	1.98 g(typ)
HBR2060ZR	HBR2060	TO-220	是 YES	条管 Tube	1.98 g(typ)
HBR2060F	HBR2060	TO-220F	否 NO	条管 Tube	1.70 g(typ)
HBR2060FR	HBR2060	TO-220F	是 YES	条管 Tube	1.70 g(typ)
HBR2060HF	HBR2060	TO-220HF	否 NO	条管 Tube	1.70 g(typ)
HBR2060HFR	HBR2060	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		$V_{RRM}$	60	V
最大直流阻断电压 Maximum DC blocking voltage		$V_{DC}$	60	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	20	A
	$T_C=125^{\circ}\text{C}$ (TO-220F, TO-220HF)		10	
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)		$I_{FSM}$	150	A
最高结温 Maximum junction temperature		$T_J$	175	$^{\circ}\text{C}$
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
$I_R$	$T_j = 25^{\circ}\text{C}$	$V_R = V_{RRM}$			30	$\mu\text{A}$
	$T_j = 125^{\circ}\text{C}$				30	mA
$V_F$	$T_j = 25^{\circ}\text{C}$	$I_F = 10\text{A}$		0.67	0.76	V
	$T_j = 125^{\circ}\text{C}$			0.63	0.68	V

**热特性 THERMAL CHARACTERISTICS**

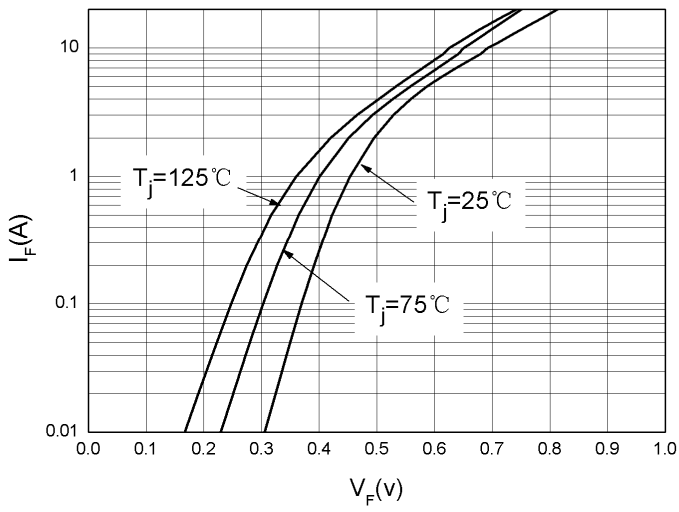
项 目 Parameter	符 号 Symbol	最小值 Value(min)	最大值 Value(max)	单 位 Unit
结到管壳的热阻 Thermal resistance from junction to case	$R_{th(j-c)}$		1.9 2.5 2.5	$^{\circ}\text{C}/\text{W}$
			TO-220	
			TO-220F	
			TO-220HF	



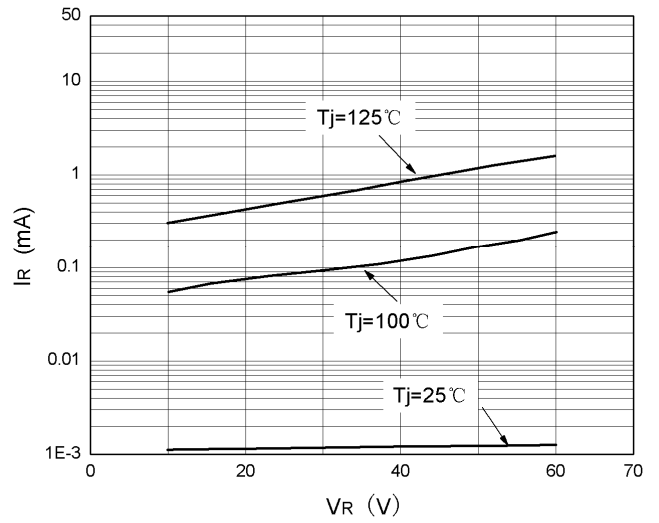


特征曲线 ELECTRICAL CHARACTERISTICS (curves)

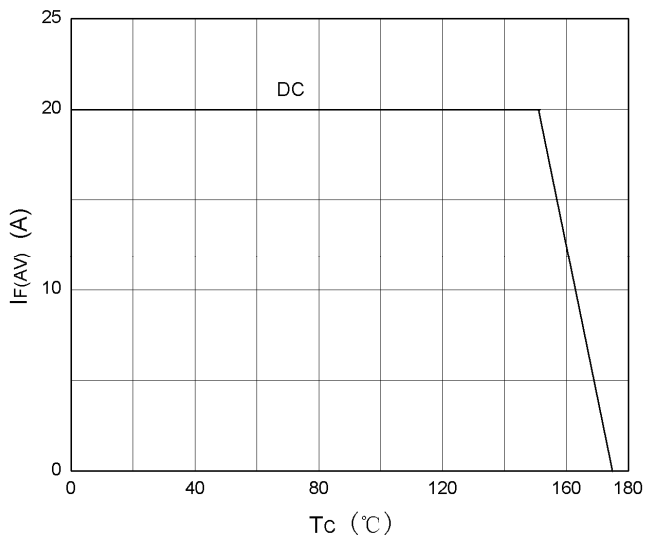
$I_F$  vs  $V_F$



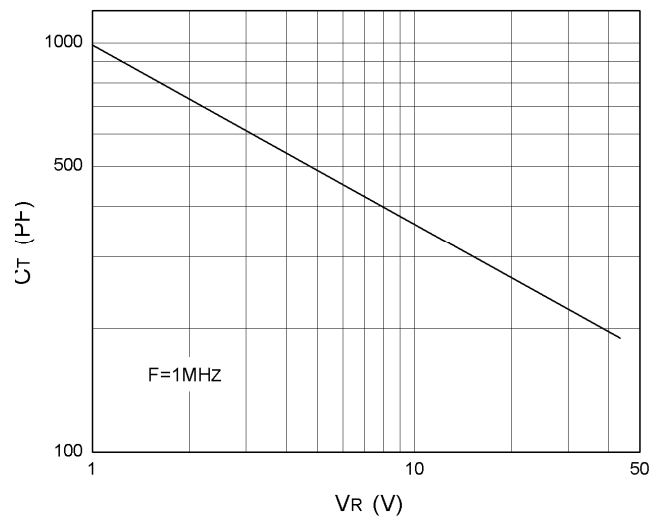
$I_R$  vs  $V_R$

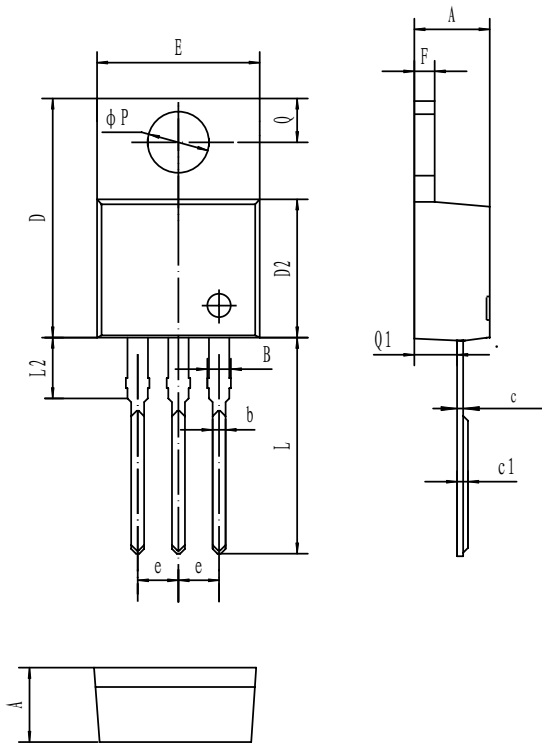


$I_{F(AV)}$  vs  $T_C$



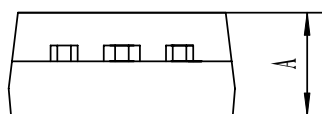
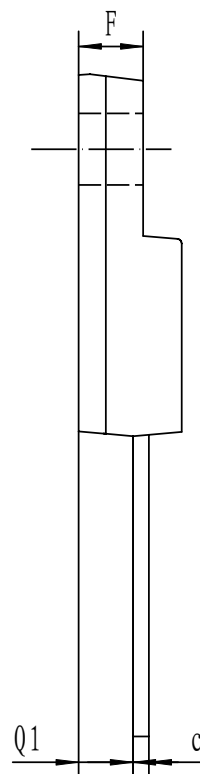
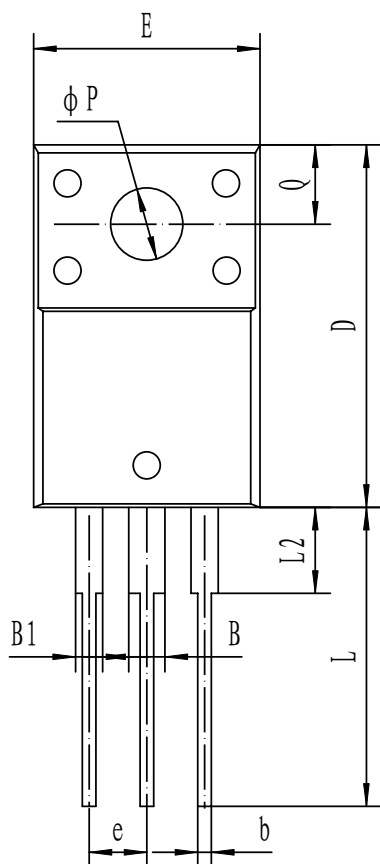
$C_T$  vs  $V_R$





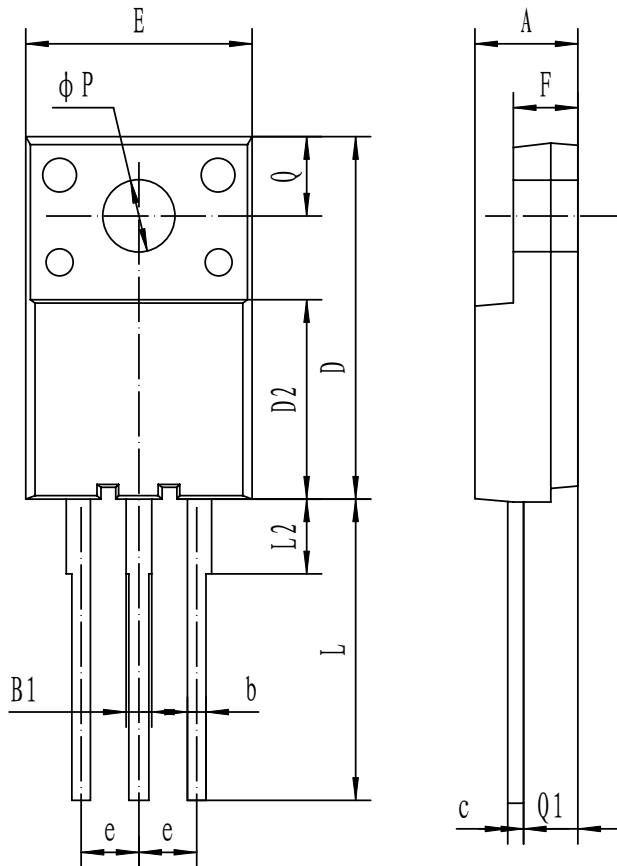
符号 symbol	MIN	MAX
A	4.40	4.80
B	1.10	1.40
b	0.70	0.95
c	0.28	0.48
c1	0.32	0.52
D	14.45	16.00
D2	8.20	9.20
E	9.60	10.40
e	2.39	2.69
F	1.20	1.35
L	13.05	14.05
L2	3.70	3.90
Q	2.40	3.00
Q1	2.20	2.90
P	3.50	4.00



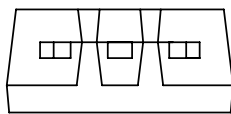


符号 Symbol	Min	Max
A	4.3	4.7
B	1.5	1.75
B1	1.1	1.35
b	0.5	0.75
c	0.5	0.75
D	14.5	15.5
E	9.96	10.36
e	2.54 (typ)	
F	2.8	3.2
L	12.7	13.7
L2	3.6	4.0
$\Phi P$	3.3	3.7
Q	2.5	2.9
Q1	2.5	2.9





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



**注意事项**

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- 2.购买时请认清公司商标,如有疑问请与公司本部联系。
- 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

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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
2010-02-03	200911E	201002F	Added TO-220HF.

