



# HBR20120U

## 主要参数 MAIN CHARACTERISTICS

$I_{F(AV)}$	20A
$V_{RRM}$	120 V
$T_j$	175 °C
$V_{F(max)}$	0.58V (@10A $T_j=125^{\circ}C$ )

### 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

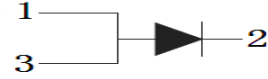
### APPLICATIONS

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

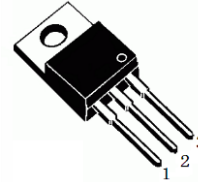
### FEATURES

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

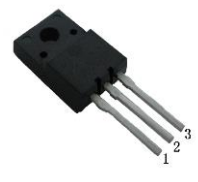
## 封装 Package



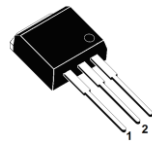
TO-220



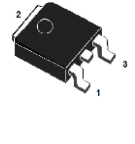
TO-220HF



TO-262



TO-263



## 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		
HBR20120U-CA-B	HBR20120U-CA-BR	N/A	N/A	HBR20120U	TO-220
HBR20120U-FA-B	HBR20120U-FA-BR	N/A	N/A	HBR20120U	TO-220HF
HBR20120UB	HBR20120UBR	N/A	N/A	HBR20120U	TO-262
HBR20120U-S-B	HBR20120U-S-BR	HBR20120U-S-A	HBR20120U-S-AR	HBR20120U	TO-263



绝对最大额定值 ABSOLUTE RATINGS ( $T_c=25^\circ\text{C}$ )

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	$V_{RRM}$	120	V
最大直流阻断电压 Maximum DC blocking voltage	$V_{DC}$	120	V
正向平均整流电流 Average forward current	$I_{F(AV)}$	20	A
$T_c=150^\circ\text{C}$ (TO-220/262/ 263) $T_c=125^\circ\text{C}$ (TO-220HF)	整个器件 per device		
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)	$I_{FSM}$	300	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
$I_R$	$T_j=25^\circ\text{C}$	$V_R=V_{RRM}$			20	$\mu\text{A}$
	$T_j=125^\circ\text{C}$				20	mA
$V_F$	$T_j=25^\circ\text{C}$	$I_F=5\text{A}$		0.56	0.62	V
	$T_j=25^\circ\text{C}$	$I_F=10\text{A}$		0.68	0.72	V
	$T_j=125^\circ\text{C}$			0.56	0.58	V
	$T_j=25^\circ\text{C}$	$I_F=20\text{A}$		0.77	0.85	V
	$T_j=125^\circ\text{C}$				0.70	V

## 热特性 THERMAL CHARACTERISTICS

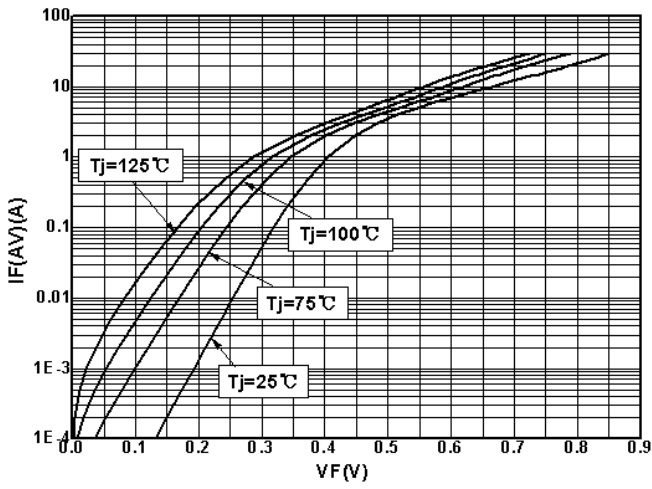
项 目 Parameter	符 号 Symbol	最小值 Value(min)	最大值 Value(max)	单 位 Unit
结到管壳的热阻 Thermal resistance from junction to case	$R_{th(j-c)}$		1.9	$^\circ\text{C}/\text{W}$
	TO-220		1.9	
	TO-262		1.9	
	TO-263		1.9	
	TO-220HF		2.5	



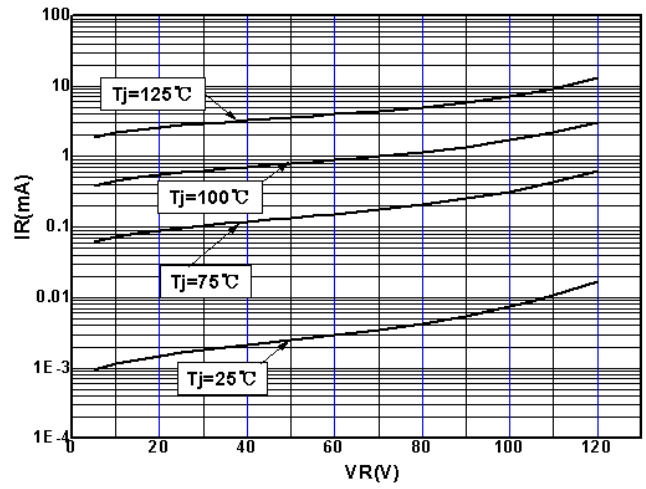


特征曲线 ELECTRICAL CHARACTERISTICS (curves)

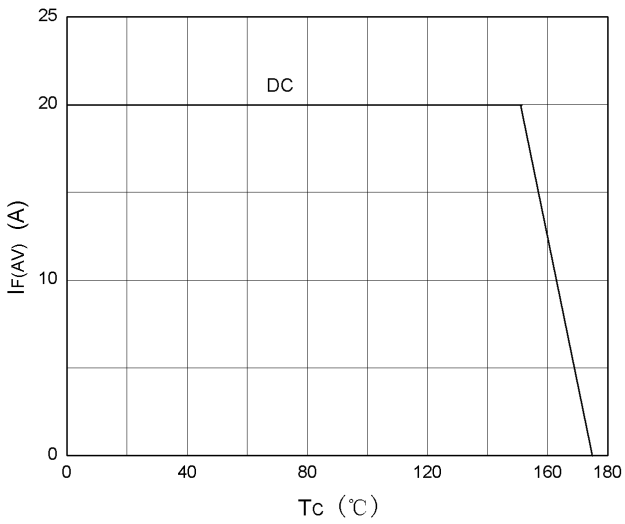
IF vs VF



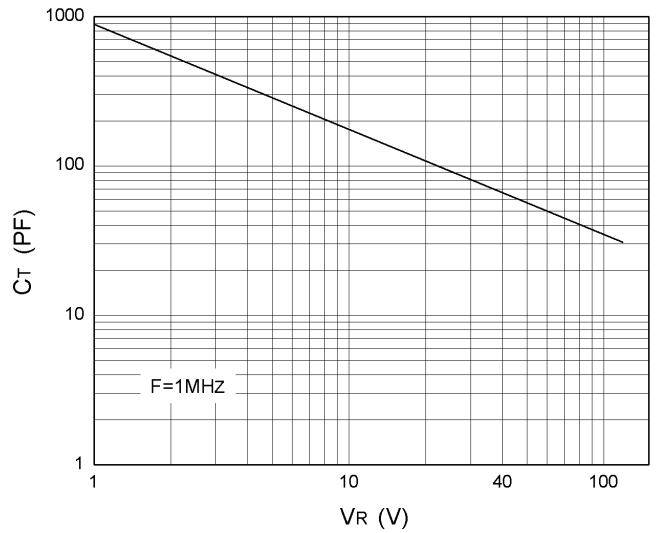
IR vs VR

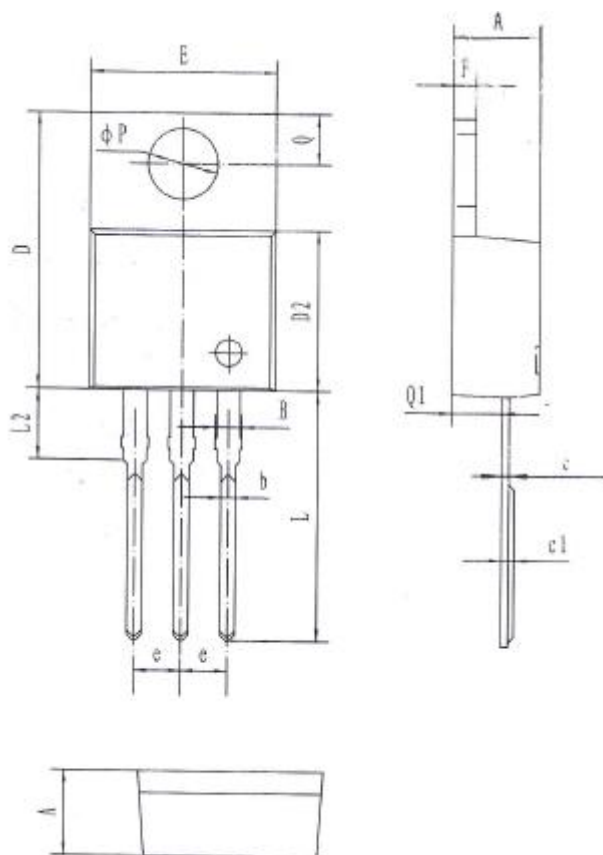


IF(AV) vs Tc



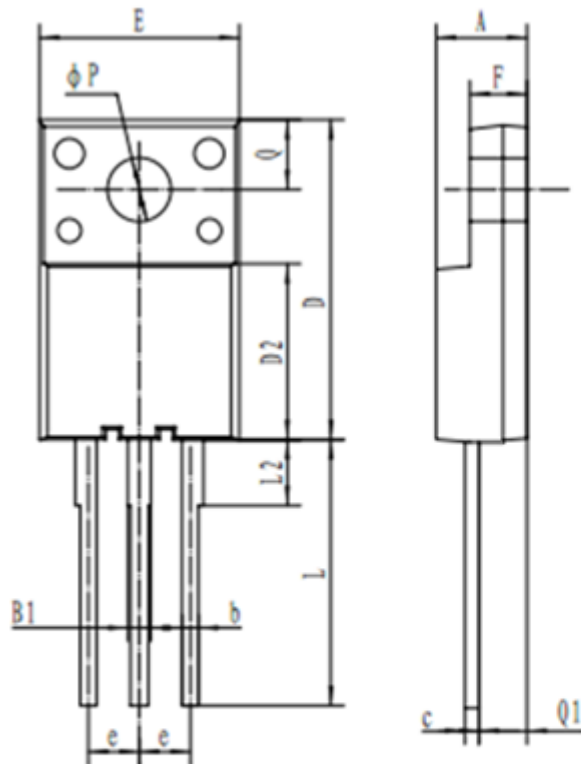
CT vs VR





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



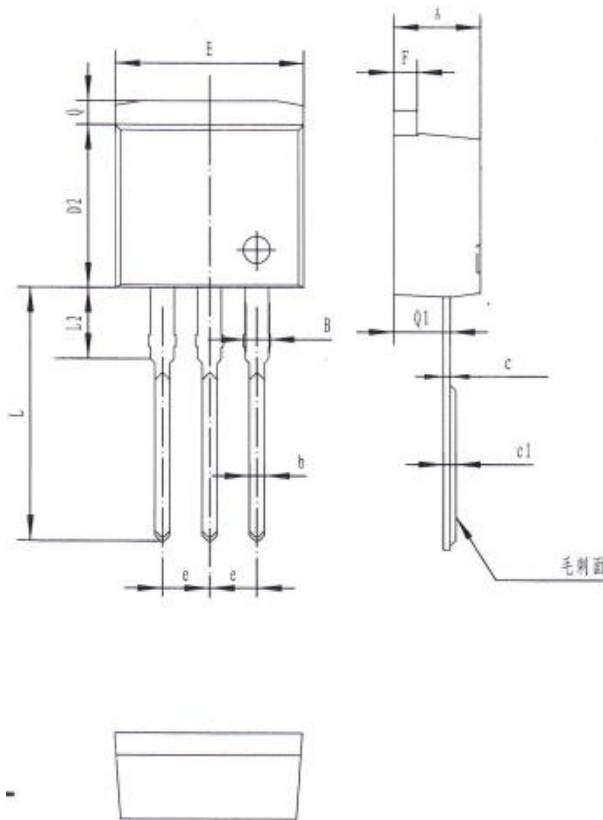


符号 symbol	MIN	MAX
A	4.0	5.0
B1	0.87	1.27
b	0.72	0.92
c	0.5	0.7
D	15.0	16.5
D2	7.8	9.4
E	9.62	10.62
e	2.54 TYP	
F	2.3	3.3
L	13.0	14.0
L2	3.1	3.5
$\phi p$	3.0	3.4
Q	3.15	3.55
Q1	2.2	2.5



外形尺寸 PACKAGE MECHANICAL DATA  
TO-262

单位 Unit : mm



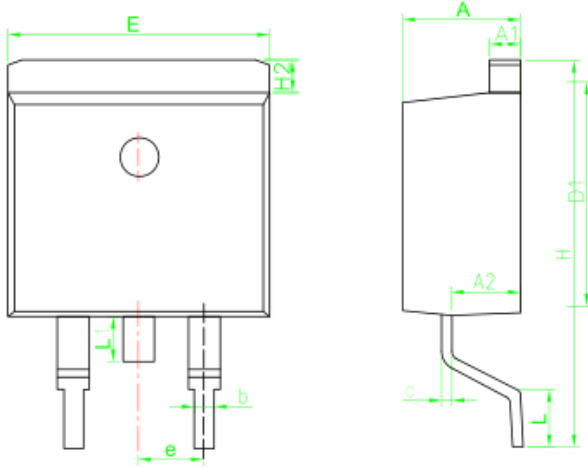
符号 symbol	MIN	MAX
A	4.40	4.90
B	1.10	1.40
b	0.70	0.95
c	0.30	0.60
c1	0.33	0.63
D2	8.20	9.20
E	9.60	10.50
e	2.39	2.69
F	1.20	1.35
L	13.11	14.61
L2	3.55	4.05
Q	1.10	1.40
Q1	2.65	2.85





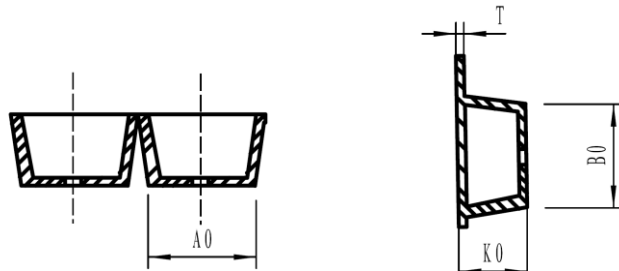
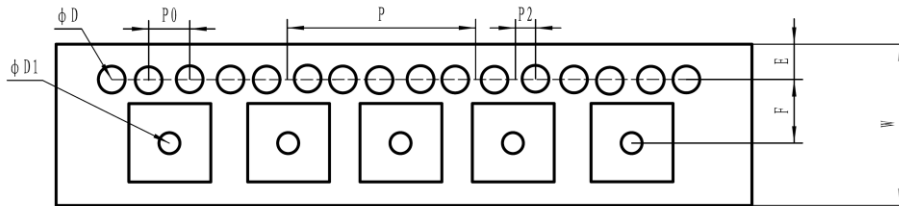
外形尺寸 PACKAGE MECHANICAL DATA  
TO-263

单位 Unit : mm



SYMBOL	MM	
	MIN	MAX
A	4.30	4.80
A1	1.12	1.42
A2	2.54	2.84
b	0.67	1.00
c	0.29	0.52
D1	8.40	9.00
E	9.80	10.46
e	2.54BSC	
H	14.00	16.00
H2	1.12	1.45
L	1.50	3.10
L1	1.45	1.70

编带 REEL



产品尺寸规格 (UNIT:mm)					
规格	W	A0	E	F	D
尺寸	24 ± 0.3	10.9 ± 0.2	1.75 ± 0.2	11.5 ± 0.2	1.5 +0.2/-0.1
规格	D1	P0	P2	P	T
尺寸	1.5 +0.2/-0.1	4 ± 0.2	2 ± 0.2	16 ± 0.2	0.35 ± 0.05
规格	K0	B0			
尺寸	4.9 ± 0.2	16.0 ± 0.2			



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3. Please do not exceed the absolute maximum ratings of the device when circuit designing.
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