



# HBR20100S

## 主要参数 MAIN CHARACTERISTICS

$I_{F(AV)}$	20 (2×10) A
$V_{RRM}$	100 V
$T_j$	175 °C
$V_{F(max)}$	0.7V (@ $T_j=125^{\circ}C$ )

### 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

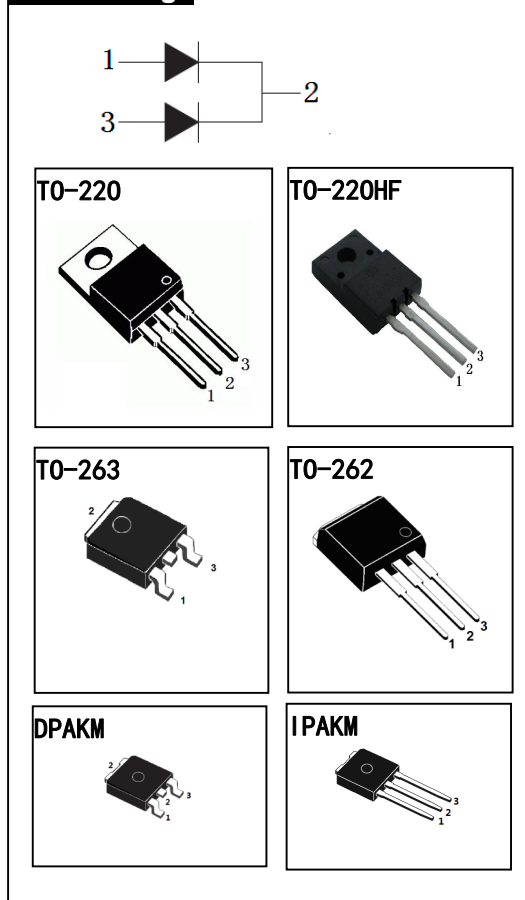
### APPLICATIONS

- 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



## 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
HBR20100SZ	HBR20100S	TO-220	否 NO	条管 Tube	1.98 g(typ)
HBR20100SZR	HBR20100S	TO-220	是 YES	条管 Tube	1.98 g(typ)
HBR20100SHF	HBR20100S	TO-220HF	否 NO	条管 Tube	1.70 g(typ)
HBR20100SHFR	HBR20100S	TO-220HF	是 YES	条管 Tube	1.70 g(typ)
HBR20100SS	HBR20100S	TO-263	否 NO	条管 Tube	1.90 g(typ)
HBR20100SSR	HBR20100S	TO-263	是 YES	条管 Tube	1.90 g(typ)
HBR20100SS	HBR20100S	TO-263	否 NO	编带 Reel	1.90 g(typ)
HBR20100SSR	HBR20100S	TO-263	是 YES	编带 Reel	1.90 g(typ)
HBR20100SB	HBR20100S	TO-262	否 NO	条管 Tube	1.70 g(typ)
HBR20100SBR	HBR20100S	TO-262	是 YES	条管 Tube	1.70 g(typ)
HBR20100SVM	HBR20100S	IPAKM	否 NO	条管 Tube	0.38 g(typ)
HBR20100SVMR	HBR20100S	IPAKM	是 YES	条管 Tube	0.38 g(typ)
HBR20100SRM	HBR20100S	DPAKM	否 NO	编带 Reel	0.33 g(typ)
HBR20100SRMR	HBR20100S	DPAKM	是 YES	编带 Reel	0.33 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 <sub>RRM</sub>	100	V
最大直流阻断电压 Maximum DC blocking voltage	V <sub>DC</sub>	100	V
正向平均整流电流 Average forward current	I <sub>F(AV)</sub>	T <sub>C</sub> =150℃ (TO-220/263/262 /IPAKM/DPAKM)	20 A
		T <sub>C</sub> =125℃ (TO-220HF)	10 A
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>	180	A
最高结温 Maximum junction temperature	T <sub>j</sub>	175	℃
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>			10	μA
	T <sub>j</sub> =125℃				5	mA
V <sub>F</sub>	T <sub>j</sub> =25℃	I <sub>F</sub> =10A		0.78	0.85	V
	T <sub>j</sub> =125℃			0.65	0.7	V

## 热特性 THERMAL CHARACTERISTICS

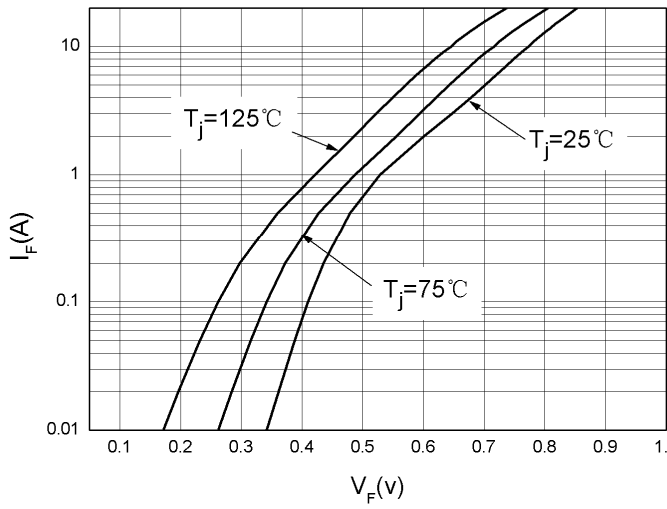
项 目 Parameter	符 号 Symbol	最小值 Value(min)	最大值 Value(max)	单 位 Unit	
结到管壳的热阻 Thermal resistance from junction to case	TO-220		1.9	℃/W	
	TO-263		1.9		
	TO-262		1.9		
	IPAKM	R <sub>th(j-c)</sub>			2.3
	DPAKM				2.3
	TO-220HF				2.5



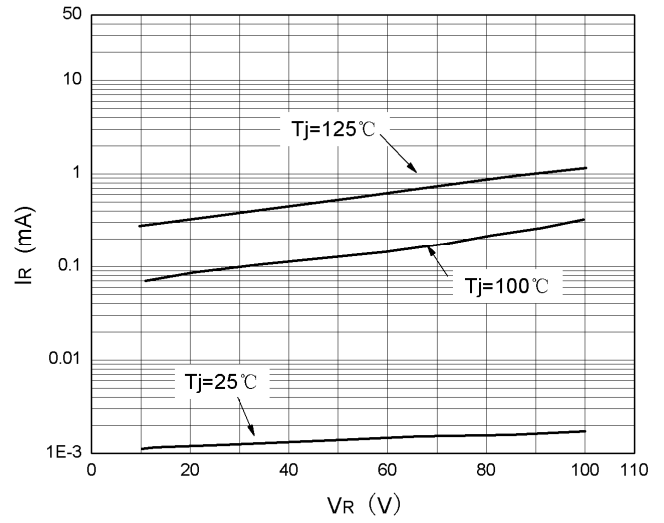


特征曲线 ELECTRICAL CHARACTERISTICS (curves)

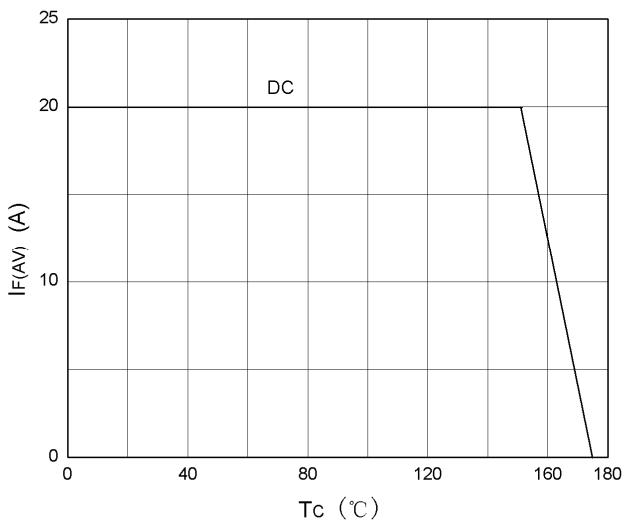
$I_F$  vs  $V_F$



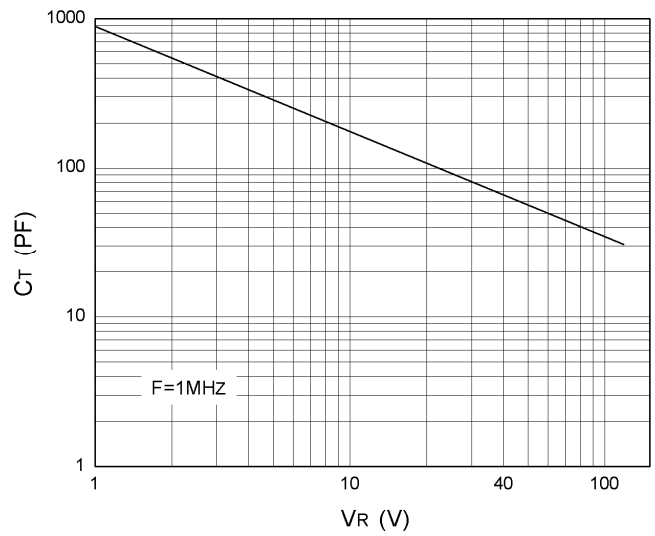
$I_R$  vs  $V_R$

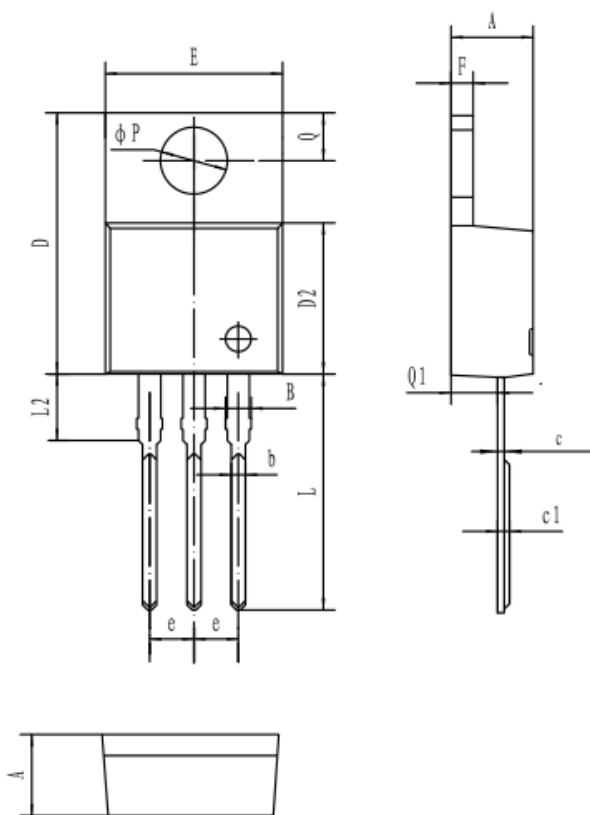


$I_{F(AV)}$  vs  $T_c$



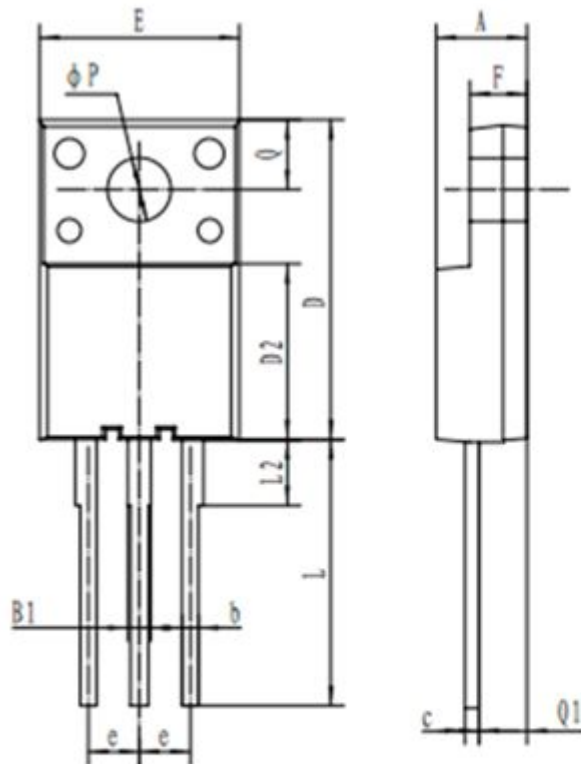
$C_T$  vs  $V_R$





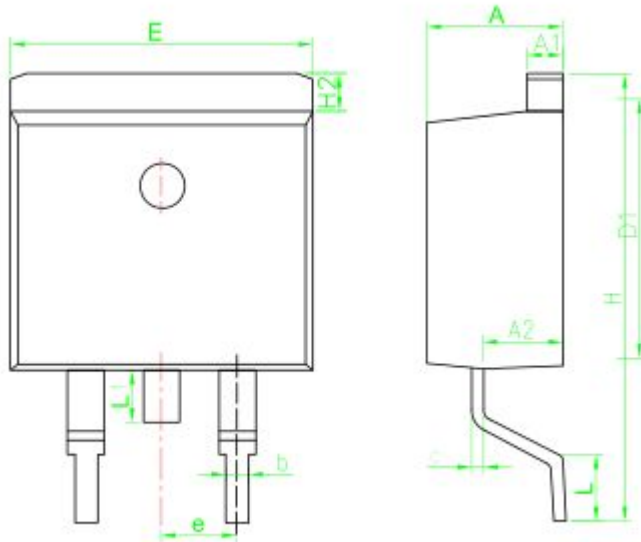
符号 symbol	MIN	MAX
A	4.40	4.80
B	1.10	1.40
b	0.70	0.95
c	0.28	0.48
c1	0.32	0.52
D	14.45	16.00
D2	8.20	9.20
E	9.60	10.40
e	2.39	2.69
F	1.20	1.35
L	13.05	14.05
L2	3.70	3.90
Q	2.40	3.00
Q1	2.20	2.90
P	3.50	4.00





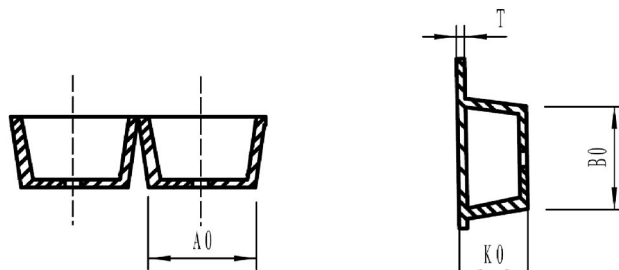
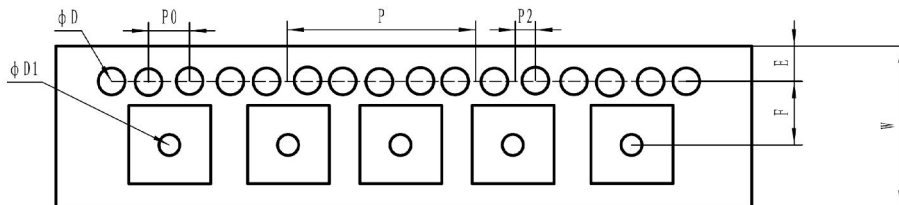
符号 symbol	MIN	MAX
A	4.0	5.0
B1	0.87	1.27
b	0.72	0.92
c	0.5	0.7
D	15.0	16.5
D2	7.8	9.4
E	9.62	10.62
e	2.54 TYP	
F	2.3	3.3
L	13.0	14.0
L2	3.1	3.5
$\phi p$	3.0	3.4
Q	3.15	3.55
Q1	2.2	2.5





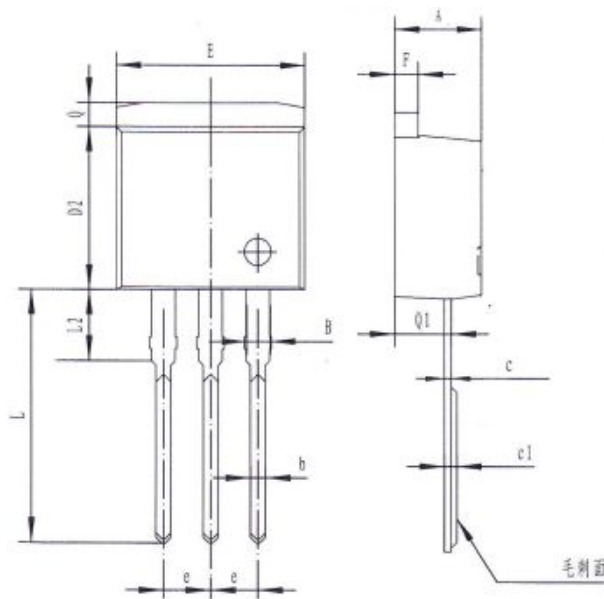
SYMBOL	MM	
	MIN	MAX
A	4.30	4.80
A1	1.12	1.42
A2	2.54	2.84
b	0.67	1.00
c	0.29	0.52
D1	8.40	9.00
E	9.80	10.46
e	2.54BSC	
H	14.00	16.00
H2	1.12	1.45
L	1.50	3.10
L1	1.45	1.70

编带 REEL



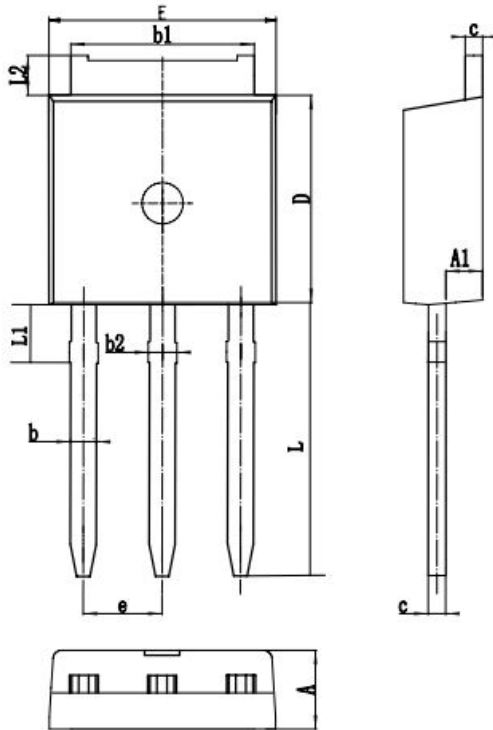
产品尺寸规格 (UNIT: mm)					
规格	W	A0	E	F	D
尺寸	24 ± 0.3	10.9 ± 0.2	1.75 ± 0.2	11.5 ± 0.2	1.5 + 0.2/-0.1
规格	D1	P0	P2	P	T
尺寸	1.5 + 0.2/-0.1	4 ± 0.2	2 ± 0.2	16 ± 0.2	0.35 ± 0.05
规格	K0	B0			
尺寸	4.9 ± 0.2	16.0 ± 0.2			





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





SYMBOL	mm	
	MIN	MAX
A	2.10	2.50
A1	0.80	1.20
b	0.66	0.96
b1	5.10	5.50
b2	0.85	1.25
c	0.40	0.62
D	5.85	6.45
E	6.30	6.90
e	2.286BSC	
L	9.00	9.60
L1	0.80	2.20
L2	0.67	1.07

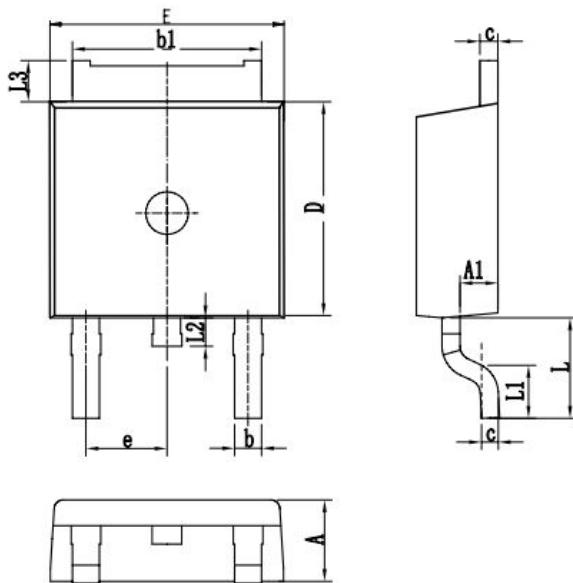






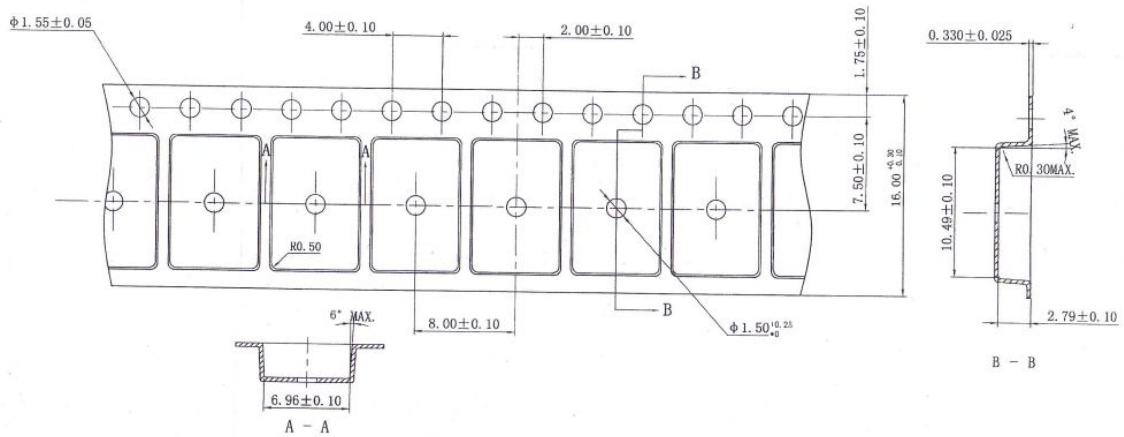
外形尺寸 PACKAGE MECHANICAL DATA  
DPAKM

单位 Unit : mm



SYMBOL	mm	
	MIN	MAX
A	2.10	2.50
A1	0.80	1.20
b	0.66	0.96
b1	5.10	5.50
c	0.40	0.62
D	5.85	6.45
E	6.30	6.90
e	2.286BSC	
L	2.40	3.00
L1	0.85	1.45
L2	0.60	1.10
L3	0.67	1.07

编带 REEL



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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
20130321	201211B	201303C	Added TO-262 IPAK DPAK Spec.
20150727		201507D	1. Deleted IPAK DPAK Spec. 2. Added IPAKM DPAKM Spec. 3. Revised TO-263 PACKAGE MECHANICAL DATA

