



HBR20150S

主要参数 MAIN CHARACTERISTICS

$I_{F(AV)}$	20 (2×10) A
V_{RRM}	150 V
T_j	175 °C
$V_{F(max)}$	0.75V (@ $T_j=125^{\circ}C$)

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

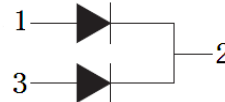
APPLICATIONS

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

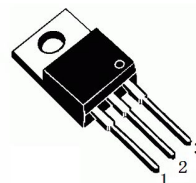
FEATURES

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

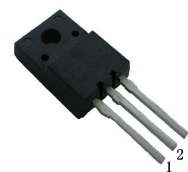
封装 Package



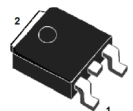
TO-220



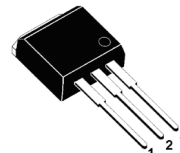
TO-220HF



TO-263



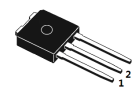
TO-262



DPAKM



IPAKM



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
HBR20150SZ	HBR20150S	TO-220	否 NO	条管 Tube	1.98 g(typ)
HBR20150SZR	HBR20150S	TO-220	是 YES	条管 Tube	1.98 g(typ)
HBR20150SS	HBR20150S	TO-263	否 NO	条管 Tube	1.90 g(typ)
HBR20150SSR	HBR20150S	TO-263	是 YES	条管 Tube	1.90 g(typ)
HBR20150SS	HBR20150S	TO-263	否 NO	编带 Reel	1.90 g(typ)
HBR20150SSR	HBR20150S	TO-263	是 YES	编带 Reel	1.90 g(typ)
HBR20150SHF	HBR20150S	TO-220HF	否 NO	条管 Tube	1.70 g(typ)
HBR20150SHFR	HBR20150S	TO-220HF	是 YES	条管 Tube	1.70 g(typ)
HBR20150SB	HBR20150S	TO-262	否 NO	条管 Tube	1.70 g(typ)
HBR20150SBR	HBR20150S	TO-262	是 YES	条管 Tube	1.70 g(typ)
HBR20150SVM	HBR20150S	IPAKM	否 NO	条管 Tube	0.38 g(typ)
HBR20150SVMR	HBR20150S	IPAKM	是 YES	条管 Tube	0.38 g(typ)
HBR20150SRM	HBR20150S	DPAKM	否 NO	编带 Reel	0.33 g(typ)
HBR20150SRMR	HBR20150S	DPAKM	是 YES	编带 Reel	0.33 g(typ)





绝对最大额定值 ABSOLUTE RATINGS (Tc=25°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}	150	V
最大直流阻断电压 Maximum DC blocking voltage		V_{DC}	150	V
正向平均整流电流 Average forward current	$T_C=150^\circ\text{C}$ (TO-220/263/262 /IPAKM/DPAKM)	整个器件 per device 单 侧 per diode	20	A
	$T_C=125^\circ\text{C}$ (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}	180	A
最高结温 Maximum junction temperature		T_j	175	$^\circ\text{C}$
储存温度 Storage temperature range		T_{STG}	-40~+15 0	$^\circ\text{C}$

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	$T_j=25^\circ\text{C}$	$V_R=V_{RRM}$			10	μA
	$T_j=125^\circ\text{C}$				5	mA
V_F	$T_j=25^\circ\text{C}$	$I_F=10\text{A}$		0.83	0.9	V
	$T_j=125^\circ\text{C}$			0.69	0.75	V

热特性 THERMAL CHARACTERISTICS

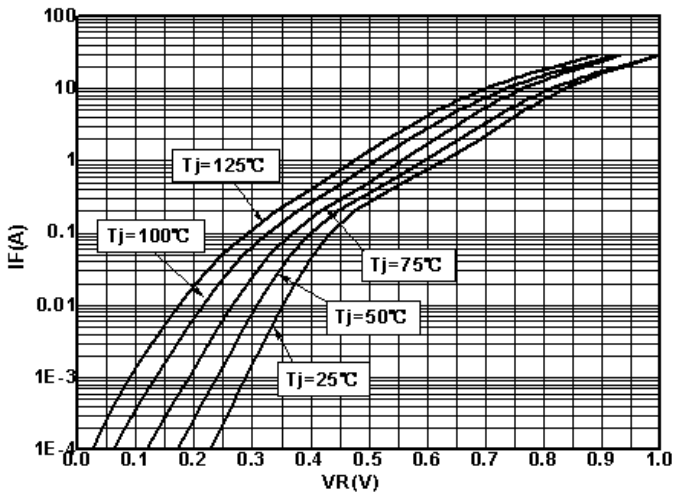
项 目 Parameter	符 号 Symbol	最小值 Value(min)	最大值 Value(max)	单 位 Unit	
结到管壳的热阻 Thermal resistance from junction to case	TO-220		2.2	$^\circ\text{C}/\text{W}$	
	TO-263		2.2		
	TO-262	$R_{th(j-c)}$			2.2
	IPAKM				2.5
	DPAKM				2.5
	TO-220HF				3.0



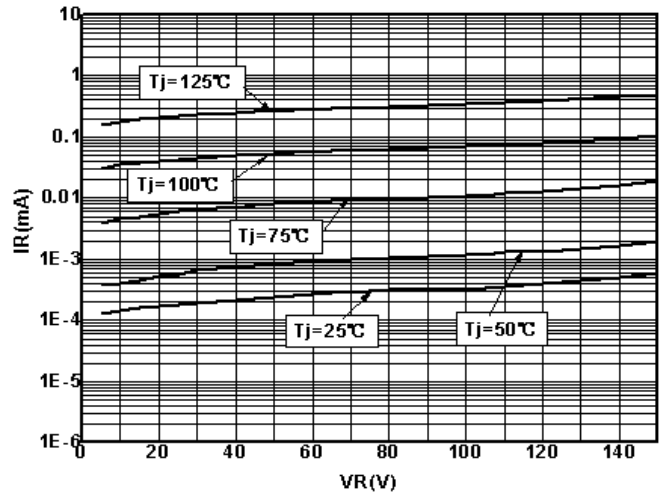


特征曲线 ELECTRICAL CHARACTERISTICS (curves)

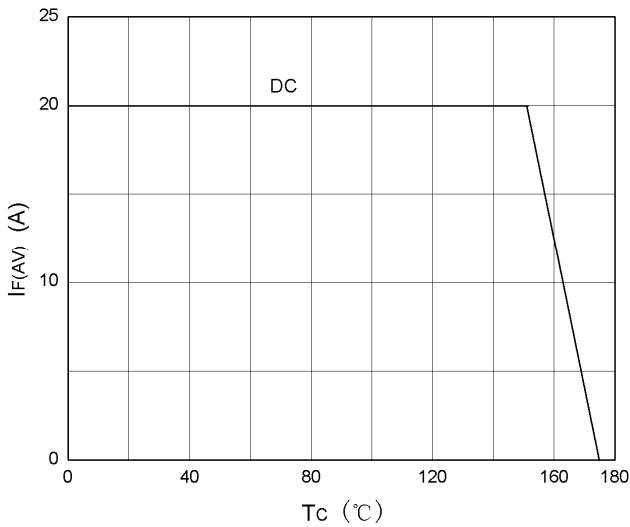
IF vs VF



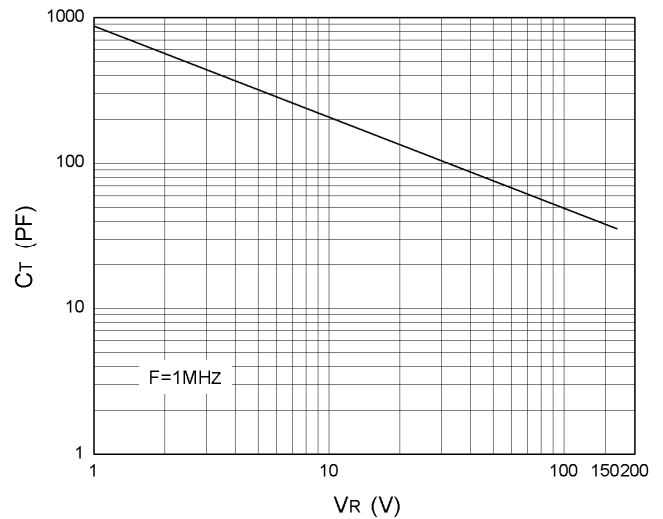
IR vs VR

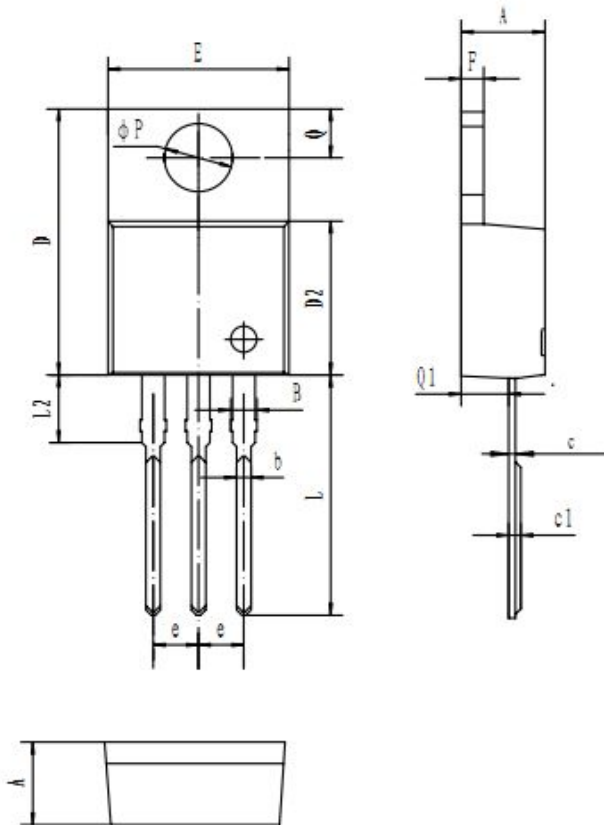


IF(AV) vs Tc

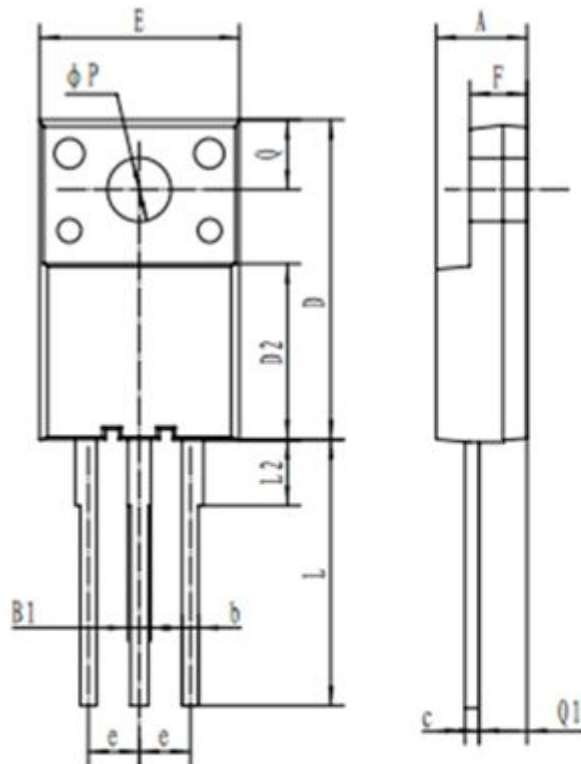


CT vs VR





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
ϕp	3.0	3.4
Q	3.15	3.55
Q1	2.2	2.5

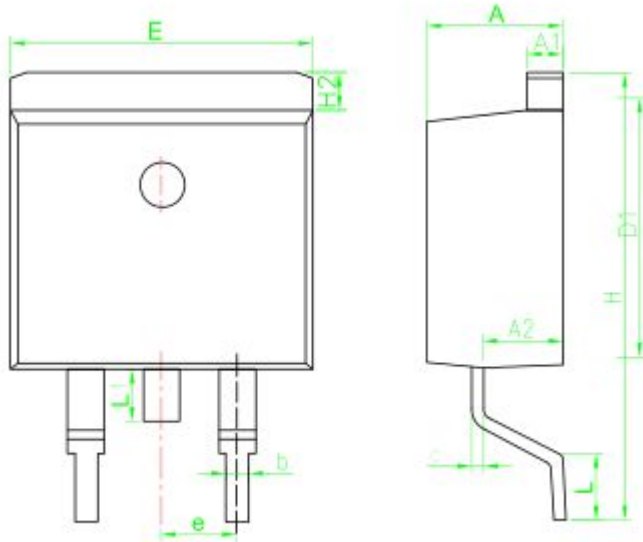




外形尺寸 PACKAGE MECHANICAL DATA

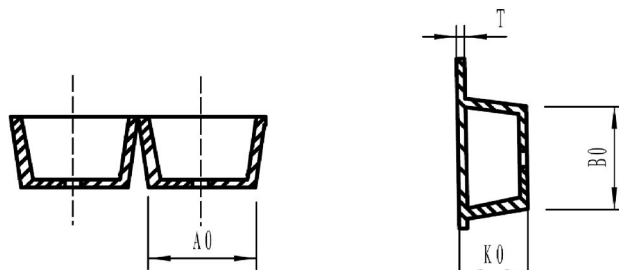
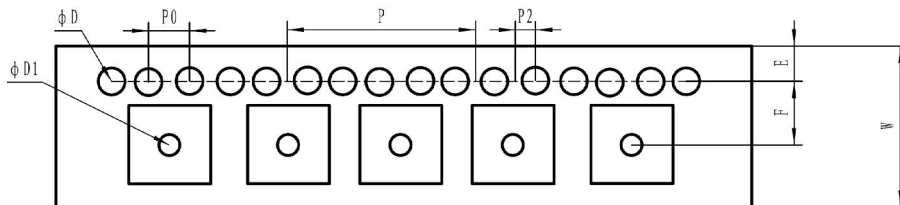
TO-263

单位 Unit : mm



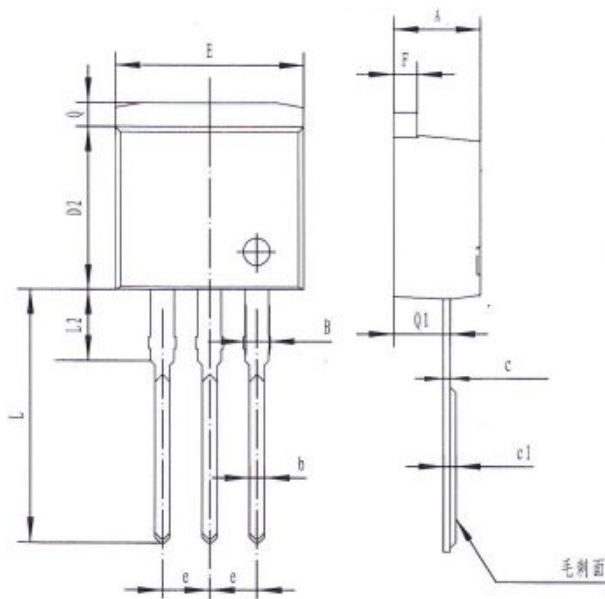
SYMBOL	MM	
	MIN	MAX
A	4.30	4.80
A1	1.12	1.42
A2	2.54	2.84
b	0.67	1.00
c	0.29	0.52
D1	8.40	9.00
E	9.80	10.46
e	2.54BSC	
H	14.00	16.00
H2	1.12	1.45
L	1.50	3.10
L1	1.45	1.70

编带 REEL



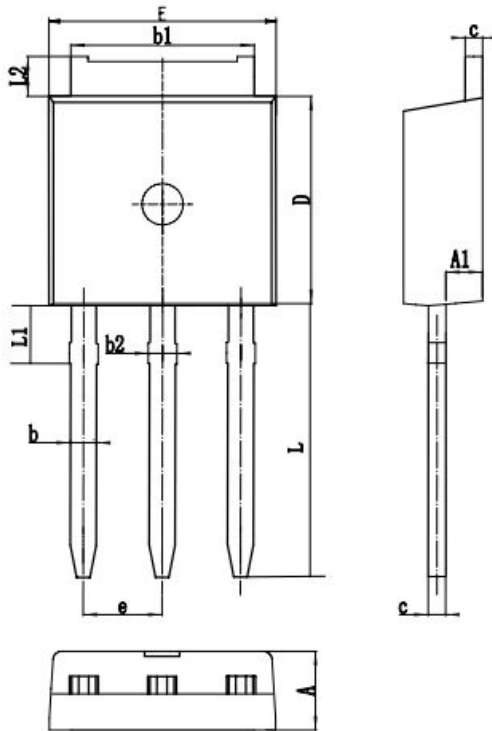
产品尺寸规格 (UNIT:mm)					
规格	W	A0	E	F	D
尺寸	24 ± 0.3	10.9 ± 0.2	1.75 ± 0.2	11.5 ± 0.2	1.5 + 0.2/-0.1
规格	D1	P0	P2	P	T
尺寸	1.5 + 0.2/-0.1	4 ± 0.2	2 ± 0.2	16 ± 0.2	0.35 ± 0.05
规格	K0	B0			
尺寸	4.9 ± 0.2	16.0 ± 0.2			





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





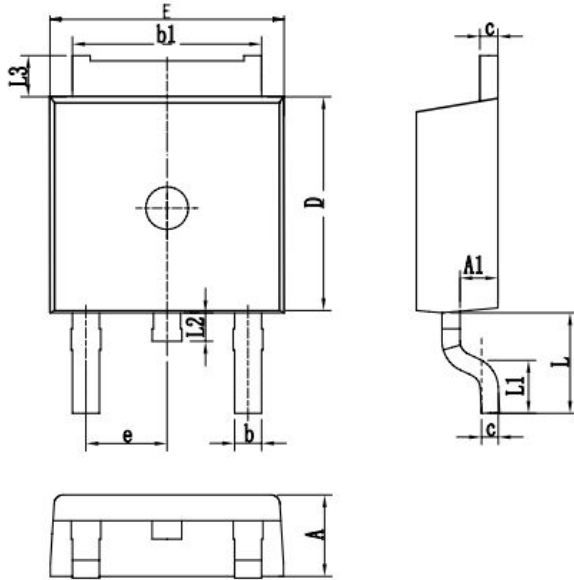
SYMBOL	mm	
	MIN	MAX
A	2.10	2.50
A1	0.80	1.20
b	0.66	0.96
b1	5.10	5.50
b2	0.85	1.25
c	0.40	0.62
D	5.85	6.45
E	6.30	6.90
e	2.286BSC	
L	9.00	9.60
L1	0.80	2.20
L2	0.67	1.07





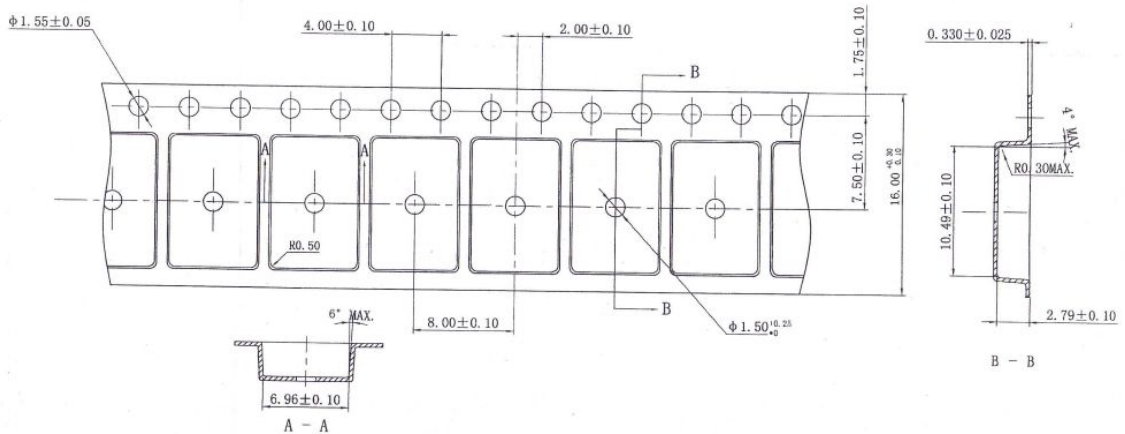
外形尺寸 PACKAGE MECHANICAL DATA
DPAKM

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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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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3. Please do not exceed the absolute maximum ratings of the device when circuit designing.
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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
20130531	201303B	201306C	Corrected the mistakes.
20150727		201507D	<ol style="list-style-type: none"> 1. Deleted IPAK DPAK Spec. 2. Added IPAKM DPAKM Spec. 3. Revised TO-263 PACKAGE MECHANICAL DATA

