



# HBR30100C

## 主要参数 MAIN CHARACTERISTICS

|              |                               |
|--------------|-------------------------------|
| $I_{F(AV)}$  | 30 (2×15) A                   |
| $V_{RRM}$    | 100 V                         |
| $T_j$        | 175 °C                        |
| $V_{F(max)}$ | 0.72V (@ $T_j=125^{\circ}C$ ) |

### 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

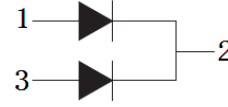
### APPLICATIONS

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

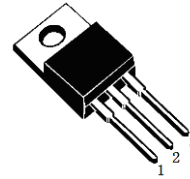
### FEATURES

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

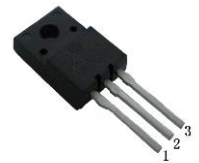
## 封装 Package



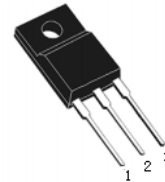
TO-220



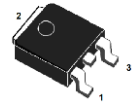
TO-220HF



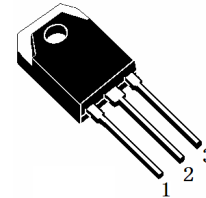
TO-220MF-K1



TO-263



TO-3PB



## 订货信息 ORDER MESSAGE

| 订货型号 Order codes      |                            |                       |                            | 印记<br>Marking | 封装<br>Package |
|-----------------------|----------------------------|-----------------------|----------------------------|---------------|---------------|
| 有卤-条管<br>Halogen-Tube | 无卤-条管<br>Halogen Free-Tube | 有卤-编带<br>Halogen-Reel | 无卤-编带<br>Halogen Free-Reel |               |               |
| HBR30100C-CA-B        | HBR30100C-CA-BR            | N/A                   | N/A                        | HBR30100C     | TO-220        |
| HBR30100C-FA-B        | HBR30100C-FA-BR            | N/A                   | N/A                        | HBR30100C     | TO-220HF      |
| HBR30100C-F1-B        | HBR30100C-F1-BR            | N/A                   | N/A                        | HBR30100C     | TO-220MF-K1   |
| HBR30100C-S-B         | HBR30100C-S-BR             | HBR30100C-S-A         | HBR30100C-S-AR             | HBR30100C     | TO-263        |
| HBR30100C-GD-B        | HBR30100C-GD-BR            | N/A                   | N/A                        | HBR30100C     | TO-3PB        |



## 绝对最大额定值 ABSOLUTE RATINGS (Tc=25°C)

| 项 目<br>Parameter  | 符 号<br>Symbol      | 数 值<br>Value | 单 位<br>Unit |
|---|--------------------|--------------|-------------|
| 最大反向重复峰值电压<br>Repetitive peak reverse voltage   | V <sub>RRM</sub>   | 100          | V           |
| 最大直流阻断电压<br>Maximum DC blocking voltage   | V <sub>DC</sub>    | 100          | V           |
| 正向平均整流电流<br>Average forward current   | I <sub>F(AV)</sub> | 30           | A           |
| T <sub>C</sub> =150°C<br>(TO-220/263/3PB)<br>整个器件<br>per device   |                    | 15           |             |
| T <sub>C</sub> =125°C<br>(TO-220HF/220M<br>F-K1)<br>单 侧<br>per diode                                    |                    |              |             |
| 正向峰值浪涌电流<br>Surge non repetitive forward current<br>(额定负载 8.3ms 半正弦波)<br>(8.3 ms single half-sine-wave) | I <sub>FSM</sub>   | 200          | A           |
| 最高结温<br>Maximum junction temperature  | T <sub>j</sub>     | 175          | °C          |
| 储存温度<br>Storage temperature range   | T <sub>STG</sub>   | -40~+150     | °C          |

## 电特性 ELECTRICAL CHARACTERISTICS

| 项 目<br>Parameter | 测试条件<br>Tests conditions |                                  | 最小值<br>Value(min) | 典型值<br>Value(typ) | 最大值<br>Value(max) | 单 位<br>Unit |
|------------------|--------------------------|----------------------------------|-------------------|-------------------|-------------------|-------------|
| I <sub>R</sub>   | T <sub>j</sub> =25°C     | V <sub>R</sub> =V <sub>RRM</sub> |                   |                   | 10                | μA          |
|                  | T <sub>j</sub> =125°C    |                                  |                   |                   | 5                 | mA          |
| V <sub>F</sub>   | T <sub>j</sub> =25°C     | I <sub>F</sub> =10A              |                   | 0.73              | 0.80              | V           |
|                  | T <sub>j</sub> =125°C    |                                  |                   | 0.62              | 0.66              | V           |
|                  | T <sub>j</sub> =25°C     | I <sub>F</sub> =15A              |                   | 0.81              | 0.87              | V           |
|                  | T <sub>j</sub> =125°C    |                                  |                   | 0.67              | 0.72              | V           |

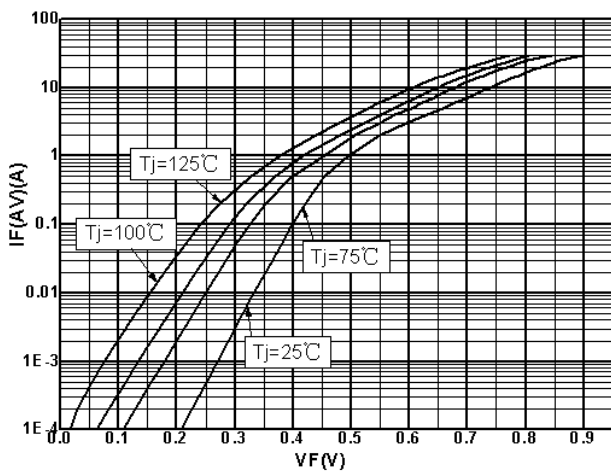
## 热特性 THERMAL CHARACTERISTICS

| 项 目<br>Parameter                                       | 符 号<br>Symbol        | 最小值<br>Value(min) | 最大值<br>Value(max)               | 单 位<br>Unit |
|--|----------------------|-------------------|---------------------------------|-------------|
| 结到管壳的热阻<br>Thermal resistance from<br>junction to case | R <sub>th(j-c)</sub> |                   | 1.9<br>2.2<br>3.0<br>3.5<br>1.9 | °C/W        |
|  |                      |                   |                                 |             |
|  |                      |                   |                                 |             |
|  |                      |                   |                                 |             |
|  |                      |                   |                                 |             |

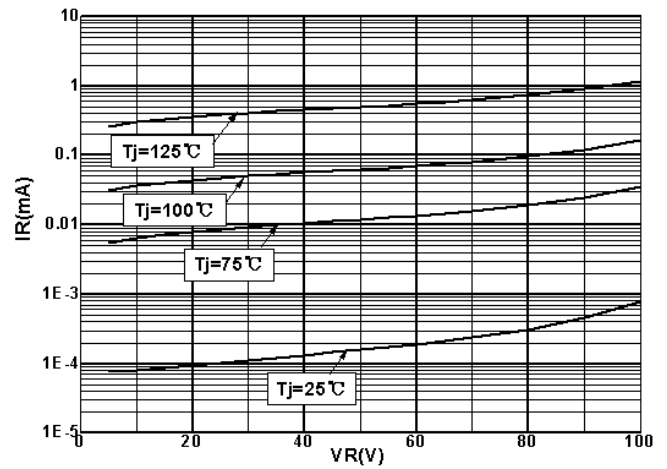


特征曲线 ELECTRICAL CHARACTERISTICS (curves)

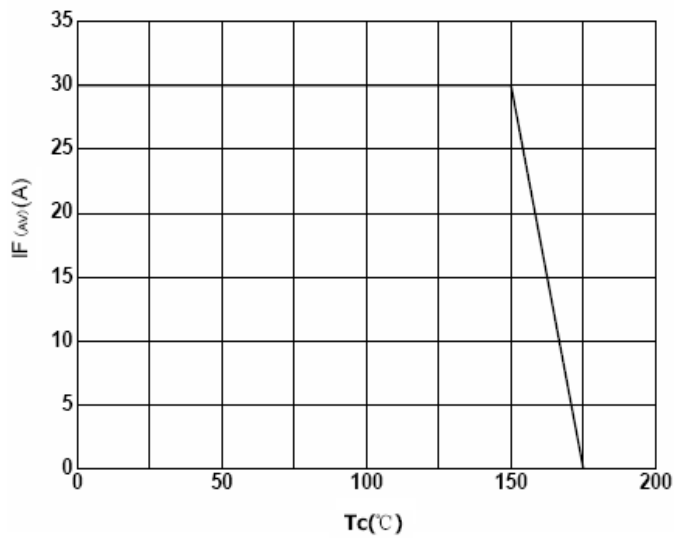
IF vs VF



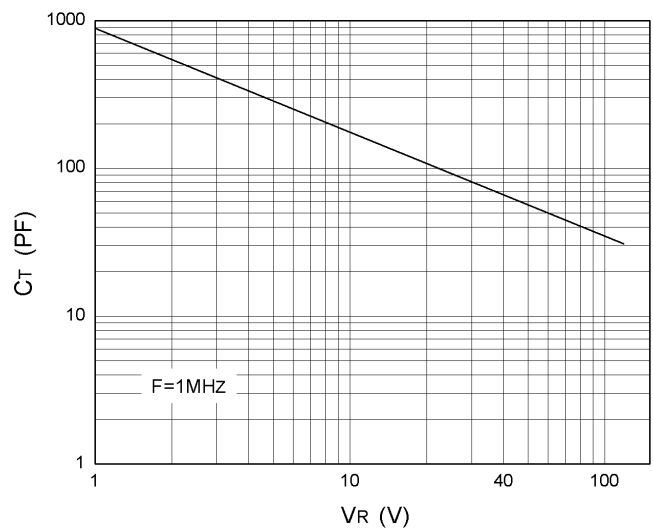
IR vs VR

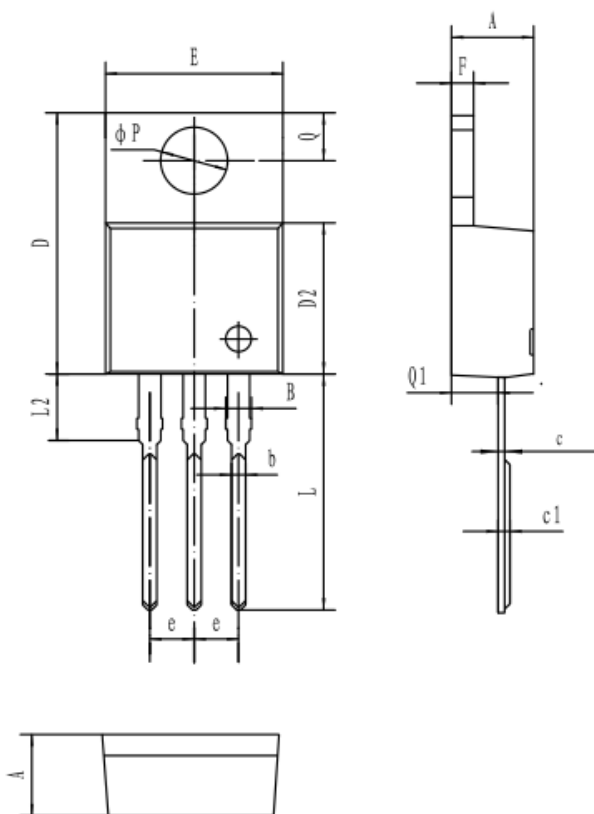


IF(AV) vs Tc

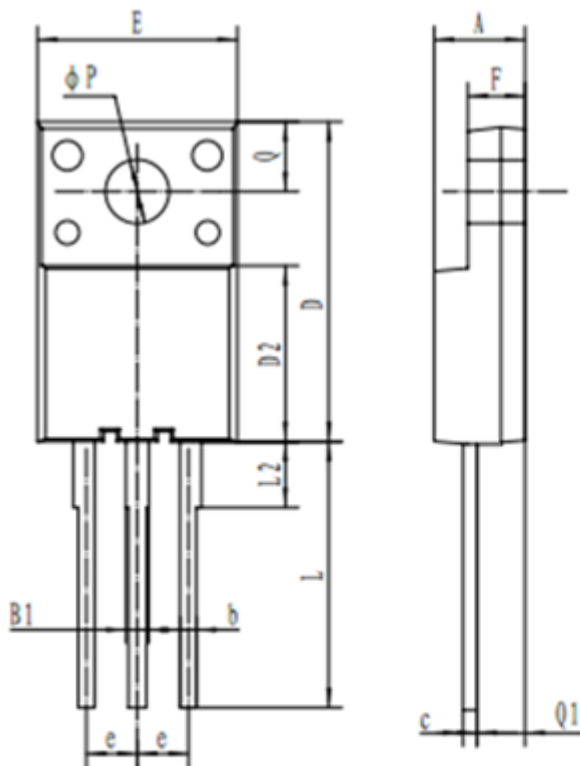


Ct vs VR





| 符号<br>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  |



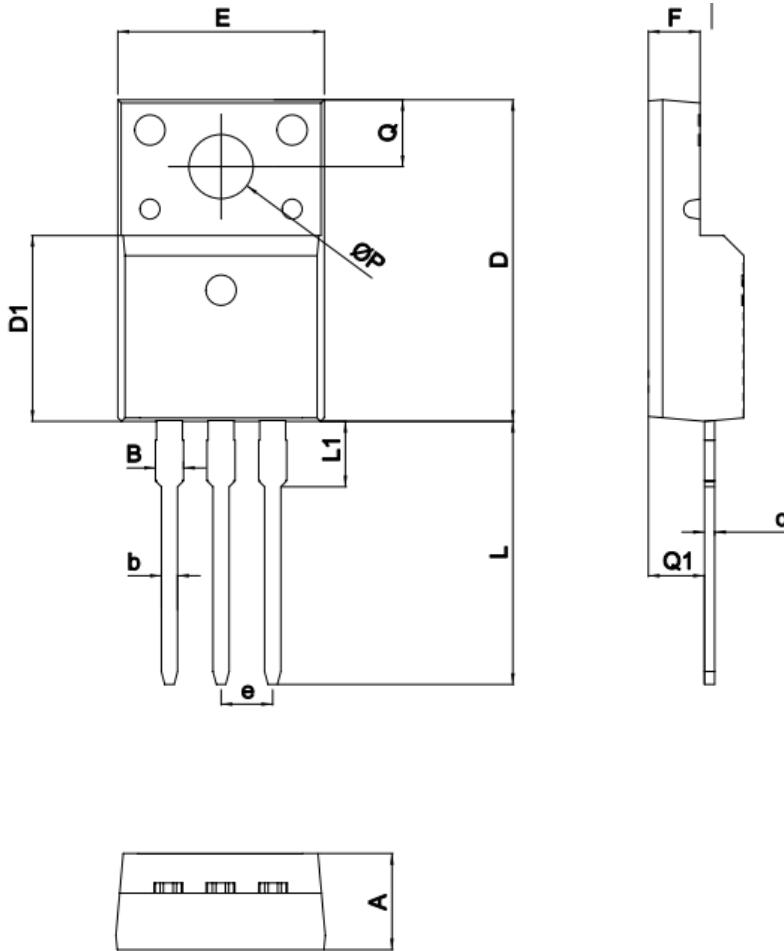
| 符号<br>symbol | MIN      | MAX   |
|--------------|----------|-------|
| A            | 4.0      | 5.0   |
| B1           | 0.87     | 1.27  |
| b            | 0.72     | 0.92  |
| c            | 0.5      | 0.7   |
| D            | 15.0     | 16.5  |
| D2           | 7.8      | 9.4   |
| E            | 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   |



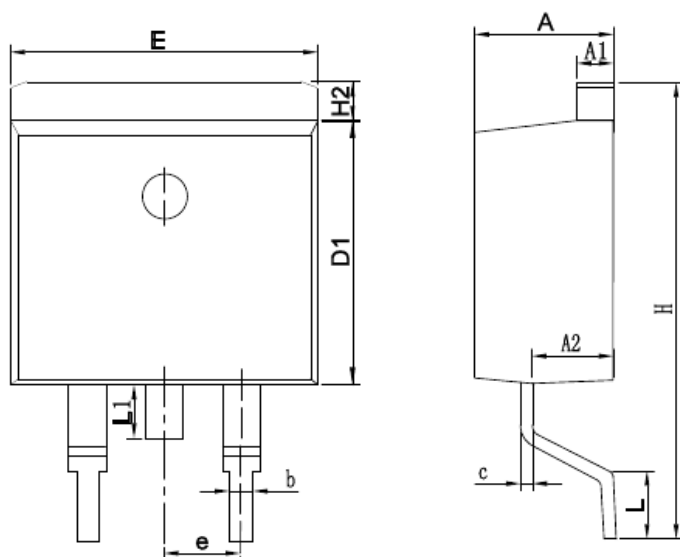


外形尺寸 PACKAGE MECHANICAL DATA  
TO-220MF-K1

单位 Unit : mm

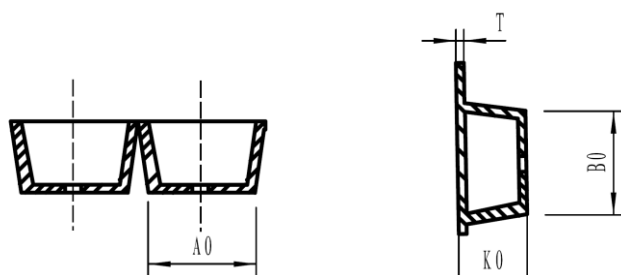
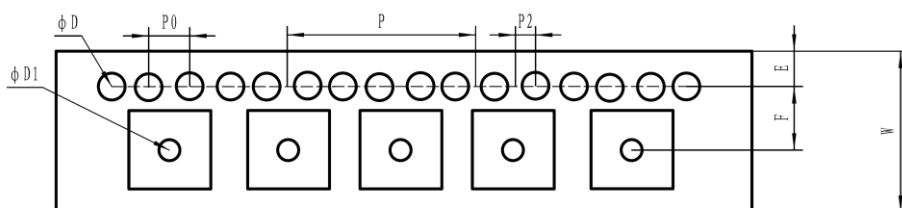


| SYMBOL | mm       |      |
|--------|----------|------|
|        | MIN      | MAX  |
| A      | 4.5      | 4.9  |
| B      | 1.22     | 1.47 |
| b      | 0.7      | 0.9  |
| c      | 0.45     | 0.60 |
| D      | 15.6     | 16.1 |
| D1     | 9.0      | 9.3  |
| e      | 2.54TYPE |      |
| E      | 9.9      | 10.4 |
| F      | 2.3      | 2.8  |
| L      | 12.6     | 13.3 |
| L1     | 3.1      | 3.4  |
| Q      | 3.2      | 3.4  |
| Q1     | 2.6      | 2.9  |
| ΦP     | 3.0      | 3.5  |

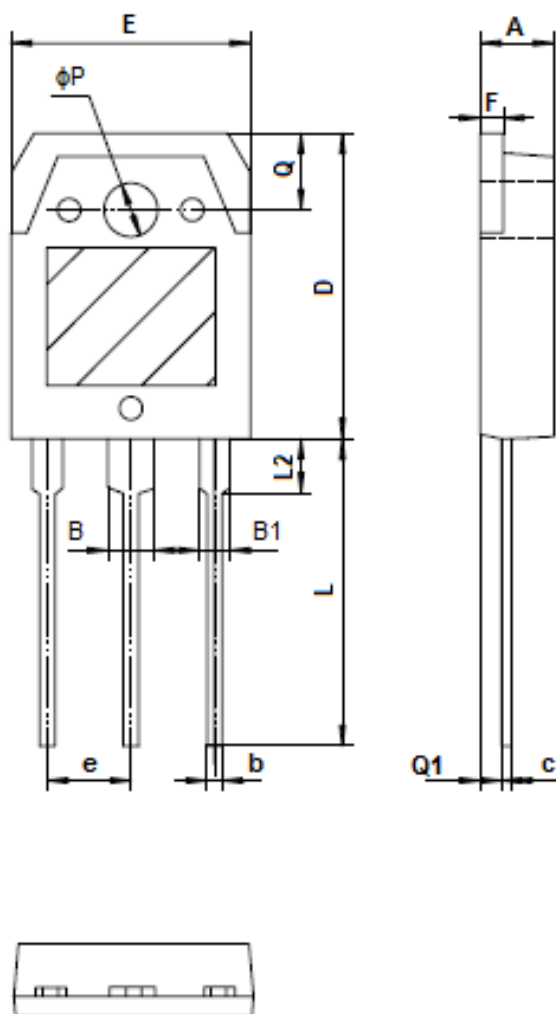


| SYMBOL | MM      |       |
|--------|---------|-------|
|        | MIN     | MAX   |
| A      | 4.30    | 4.80  |
| A1     | 1.12    | 1.42  |
| A2     | 2.54    | 2.84  |
| b      | 0.67    | 1.00  |
| c      | 0.29    | 0.52  |
| D1     | 8.40    | 9.00  |
| E      | 9.80    | 10.46 |
| e      | 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<br>Symbol | MIN       | MAX   |
|--------------|-----------|-------|
| A            | 4.60      | 5.00  |
| B            | 2.90      | 3.20  |
| B1           | 1.90      | 2.20  |
| b            | 0.90      | 1.10  |
| c            | 0.50      | 0.70  |
| D            | 19.40     | 20.40 |
| E            | 15.40     | 15.80 |
| e            | 5.45(TYP) |       |
| F            | 1.40      | 1.60  |
| L            | 19.50     | 20.50 |
| L2           | 3.30      | 3.70  |
| Q            | 4.90      | 5.10  |
| Q1           | 1.30      | 1.50  |
| P            | 3.10      | 3.50  |





## 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。

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