



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

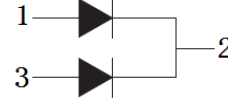
APPLICATIONS

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

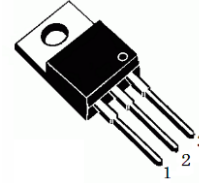
FEATURES

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

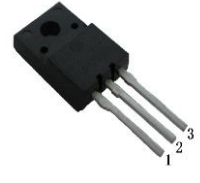
封装 Package



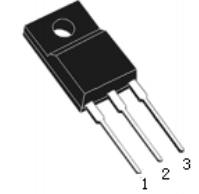
TO-220



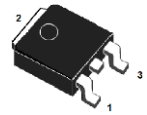
TO-220HF



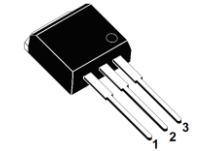
TO-220MF-K1



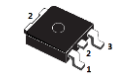
TO-263



TO-262



DPAKM



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 | | |
| HBR20150S-CA-B | HBR20150S-CA-BR | N/A | N/A | HBR20150S | TO-220 |
| HBR20150S-FA-B | HBR20150S-FA-BR | N/A | N/A | HBR20150S | TO-220HF |
| HBR20150S-F1-B | HBR20150S-F1-BR | N/A | N/A | HBR20150S | TO-220MF-K1 |
| HBR20150S-B-B | HBR20150S-B-BR | N/A | N/A | HBR20150S | TO-262 |
| HBR20150S-S-B | HBR20150S-S-BR | HBR20150S-S-A | HBR20150S-S-AR | HBR20150S | TO-263 |
| N/A | N/A | HBR20150S-RM-A | HBR20150S-RM-AR | HBR20150S | DPAKM |



**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} | 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/DPAKM) | 整个器件 per device | 20 | A |
| | $T_c=125^\circ\text{C}$ (TO-220HF/ TO-220MF-K1) | 单 侧 per diode | 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

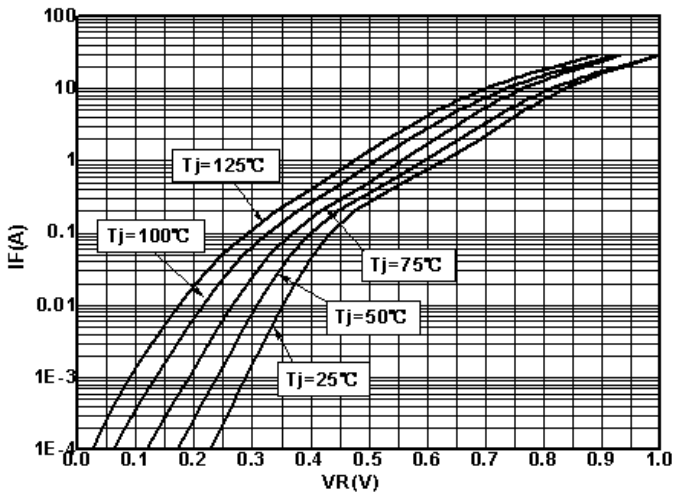
| 项 目 Parameter | 符 号 Symbol | 最小值 Value(min) | 最大值 Value(max) | 单 位 Unit |
|--|---------------|-------------------|-------------------|--------------------|
| 结到管壳的热阻 Thermal resistance from junction to case | TO-220 | | 2.2 | $^\circ\text{C/W}$ |
| | TO-263 | | 2.2 | |
| | TO-262 | | 2.2 | |
| | DPAKM | $R_{th(j-c)}$ | 2.5 | |
| | TO-220HF | | 3.5 | |
| | TO-220MF-K1 | | 3.5 | |



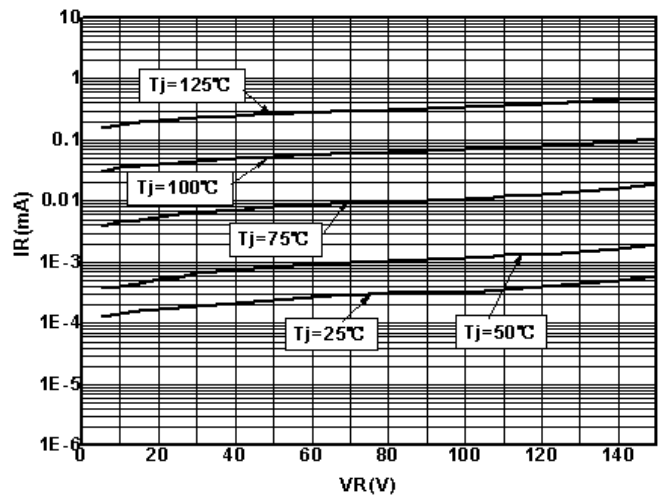


特征曲线 ELECTRICAL CHARACTERISTICS (curves)

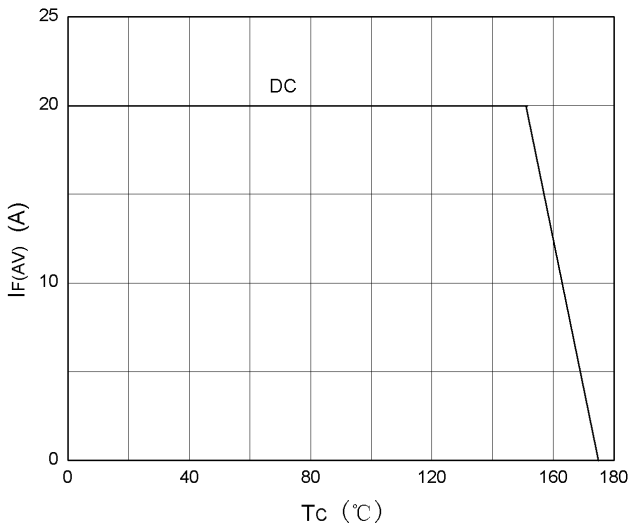
IF vs VF



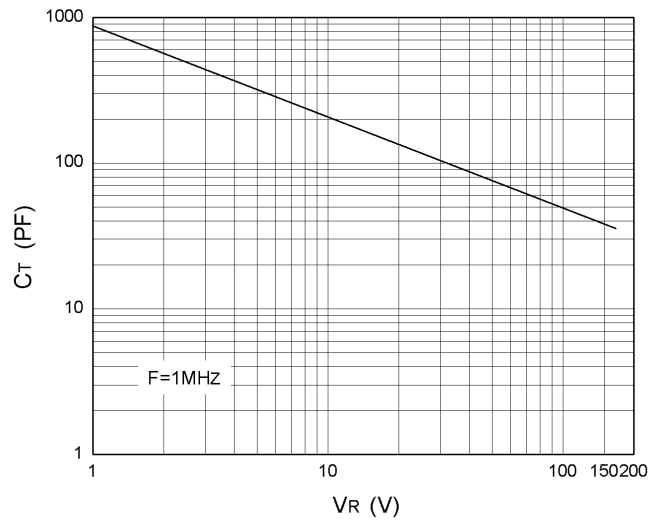
IR vs VR

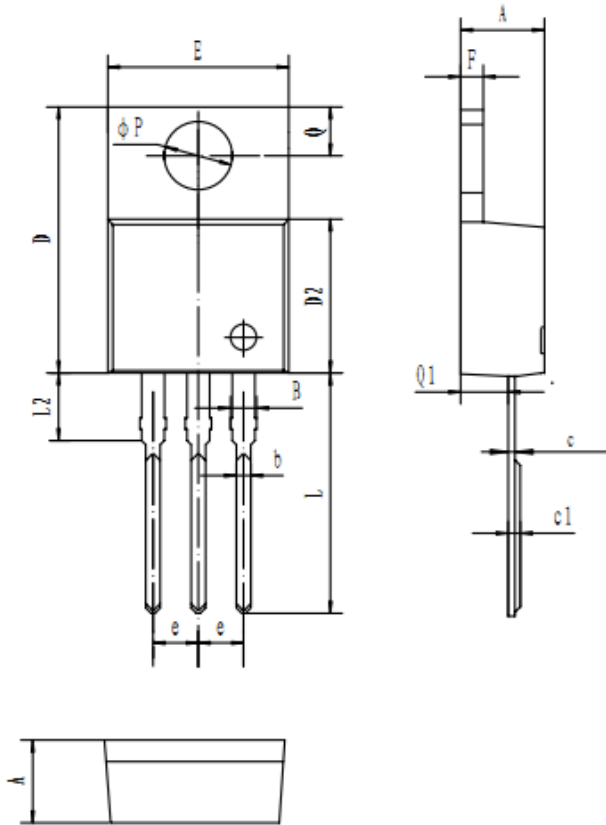


IF(AV) vs Tc



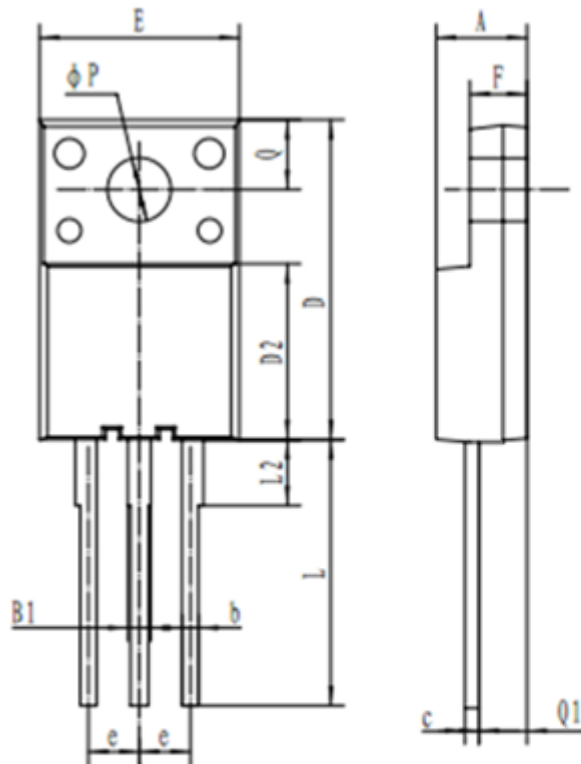
CT vs VR





| 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 |





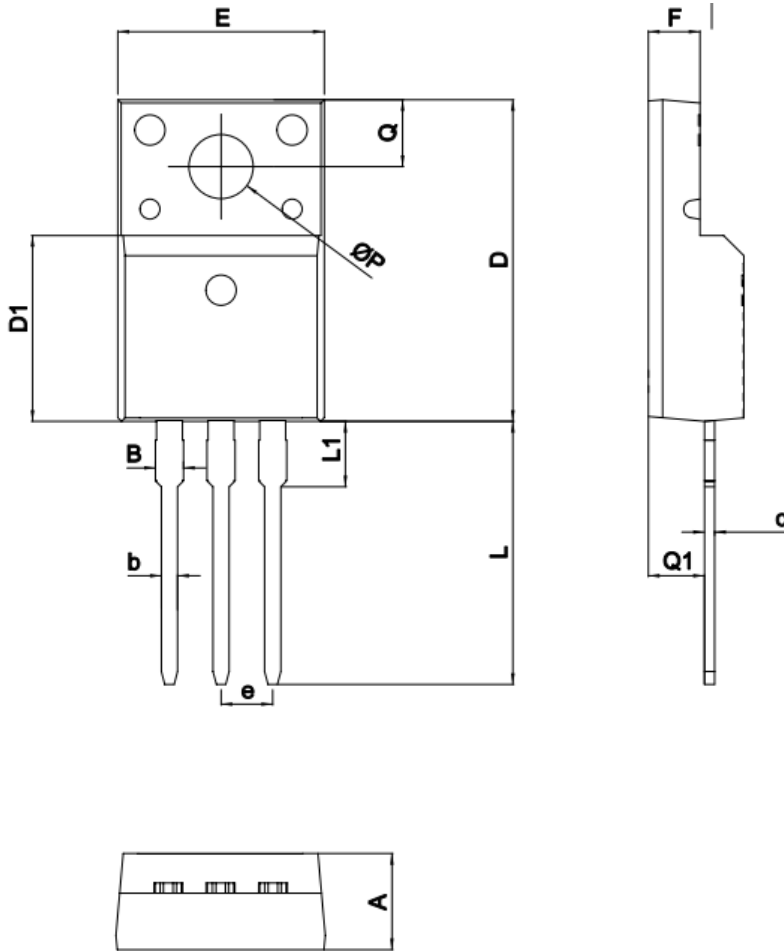
| 符号 symbol | MIN | MAX |
|--------------|----------|-------|
| A | 4.0 | 5.0 |
| B1 | 0.87 | 1.27 |
| b | 0.72 | 0.92 |
| c | 0.5 | 0.7 |
| D | 15.0 | 16.5 |
| D2 | 7.8 | 9.4 |
| E | 9.62 | 10.62 |
| e | 2.54 TYP | |
| F | 2.3 | 3.3 |
| L | 13.0 | 14.0 |
| L2 | 3.1 | 3.5 |
| ϕp | 3.0 | 3.4 |
| Q | 3.15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





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

单位 Unit : mm



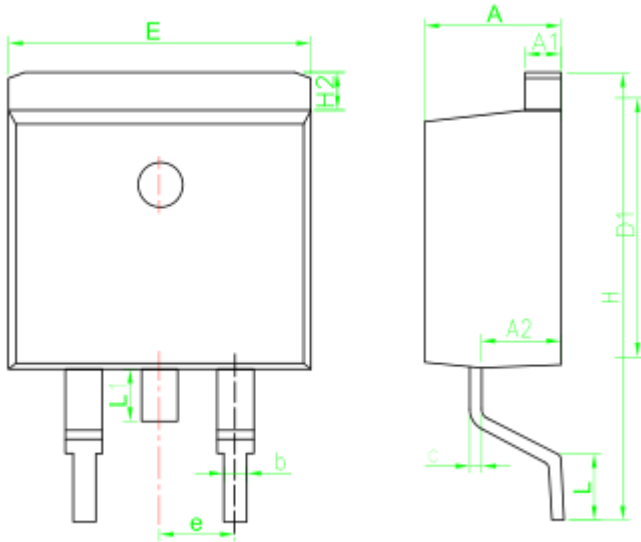
| SYMBOL | mm | |
|--------|----------|------|
| | MIN | MAX |
| A | 4.5 | 4.9 |
| B | 1.22 | 1.47 |
| b | 0.7 | 0.9 |
| c | 0.45 | 0.60 |
| D | 15.6 | 16.1 |
| D1 | 9.0 | 9.3 |
| e | 2.54TYPE | |
| E | 9.9 | 10.4 |
| F | 2.3 | 2.8 |
| L | 12.6 | 13.3 |
| L1 | 3.1 | 3.4 |
| Q | 3.2 | 3.4 |
| Q1 | 2.6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





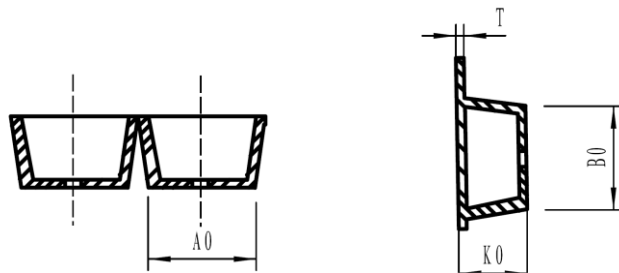
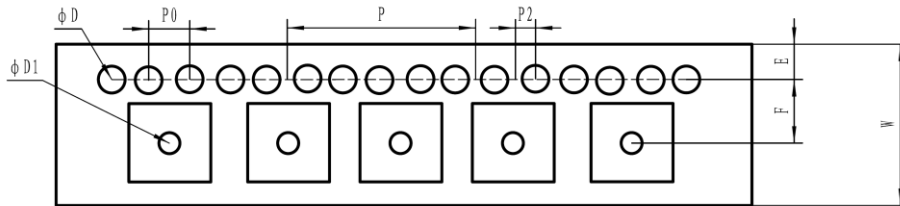
外形尺寸 PACKAGE MECHANICAL DATA
TO-263

单位 Unit : mm



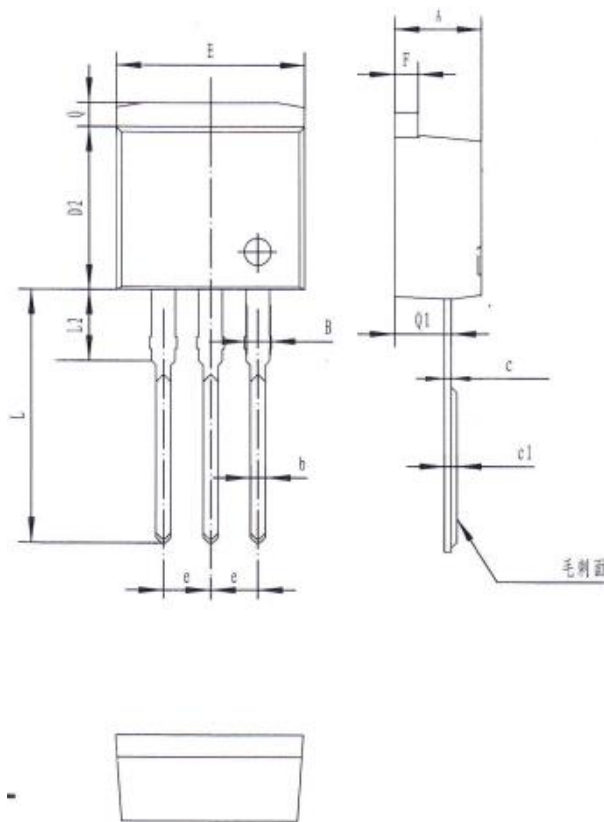
| SYMBOL | MM | |
|--------|---------|-------|
| | MIN | MAX |
| A | 4.30 | 4.80 |
| A1 | 1.12 | 1.42 |
| A2 | 2.54 | 2.84 |
| b | 0.67 | 1.00 |
| c | 0.29 | 0.52 |
| D1 | 8.40 | 9.00 |
| E | 9.80 | 10.46 |
| e | 2.54BSC | |
| H | 14.00 | 16.00 |
| H2 | 1.12 | 1.45 |
| L | 1.50 | 3.10 |
| L1 | 1.45 |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





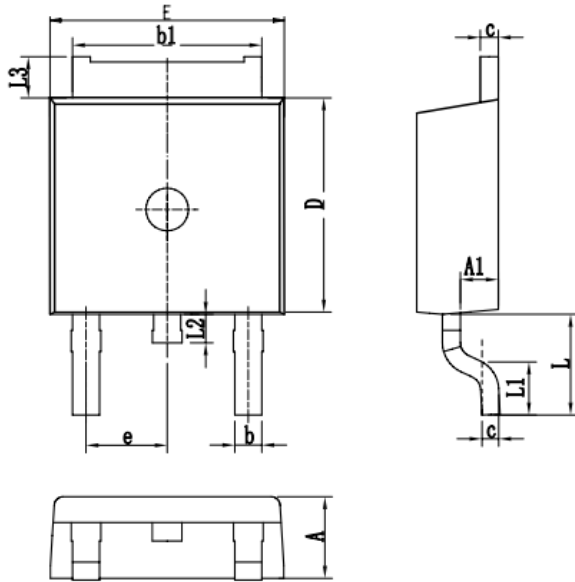
| 符号 symbol | MIN | MAX |
|--------------|-------|-------|
| A | 4.40 | 4.90 |
| B | 1.10 | 1.40 |
| b | 0.70 | 0.95 |
| c | 0.30 | 0.60 |
| c1 | 0.33 | 0.63 |
| D2 | 8.20 | 9.20 |
| E | 9.60 | 10.50 |
| e | 2.39 | 2.69 |
| F | 1.20 | 1.35 |
| L | 13.11 | 14.61 |
| L2 | 3.55 | 4.05 |
| Q | 1.10 | 1.40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





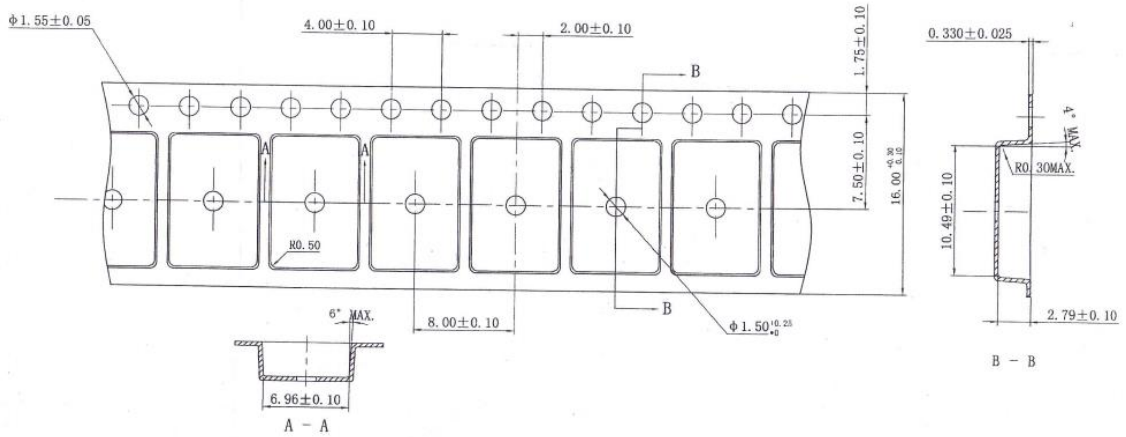
外形尺寸 PACKAGE MECHANICAL DATA
DPAKM

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



**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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