



3FT4C/F/M/U

主要参数 MAIN CHARACTERISTICS

| | |
|--------------|--------------|
| $I_{T(RMS)}$ | 4A |
| V_{DRM} | 600V or 800V |
| I_{GT} | 10mA |

用途

- 交流开关
- 相位控制

产品特性

- 玻璃钝化芯片，高可靠性和一致性
- 低通态电流和高浪涌电流能力
- 环保 RoHS 产品

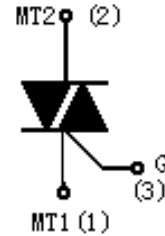
APPLICATIONS

- AC switching
- Phase control

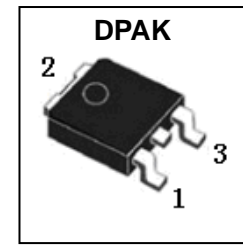
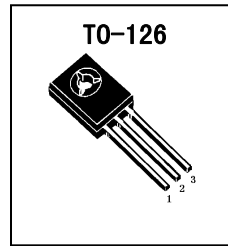
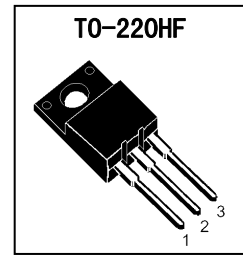
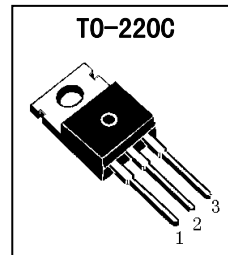
FEATURES

- Glass-passivated mesa chip for reliability and uniform
- Low on-state voltage and High I_{TSM}
- RoHS products

封装 Package



| 序号 Pin | 引线名称 Description |
|-----------|---------------------|
| 1 | 主电极 1 MT1 |
| 2 | 主电极 2 MT2 |
| 3 | 门极 G |



订货信息 ORDER MESSAGES

| 订货型号 Order code | 印记 Marking | 封装 Package | 包装 Packaging |
|--------------------|---------------|---------------|-----------------|
| 3FT4C-O-C-N-B | 3FT4C | TO-220C | 条管 Tube |
| 3FT4F-O-HF-N-B | 3FT4F | TO-220HF | 条管 Tube |
| 3FT4M-O-M-N-C | 3FT4M | TO-126 | 袋装 Bag |
| 3FT4U-O-U-B-A | 3FT4U | DPAK | 编带 Tape |

概述 GENERAL DESCRIPTION

3FT4C/F/M/U是玻璃钝化芯片结构的四象限双向晶闸管。器件封装形式有TO-220C、TO-220HF、TO-126和DPAK。

3FT4C/F/M/U are Glass passivated four quadrant triacs. Available packages are TO-220C、TO-220HF、TO-126 and DPAK.



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

| 项 目 Parameter | 符 号 Symbol | 试 验 条 件 Condition | 数 值 Value | 单 位 Unit |
|--|---------------------|--|------------------------|------------------------|
| 重复峰值断态电压 Repetitive peak off-state voltage | V_{DRM} | | ± 600 ± 800 | V |
| 通态方均根电流 On-state RMS current | $I_{\text{T(RMS)}}$ | full sine wave | 4 | A |
| 非重复浪涌峰值通态电流 Non-repetitive surge peak on-state current | I_{TSM} | full sine wave ,t=20ms | 25 | A |
| | | full sine wave ,t=16.7ms | 27 | A |
| | | I^2t | t=10ms | 3.1 |
| 通态电流临界上升率 Repetitive rate of rise of on-state current after triggering | di/dt | $I_{\text{TM}}=6\text{A}$, $I_{\text{G}}=0.2\text{A}$, $di_{\text{G}}/dt=0.2\text{A}/\mu\text{s}$ | 50 | $\text{A}/\mu\text{s}$ |
| 峰值门极电流 Peak gate current | I_{GM} | | 2 | A |
| 峰值门极电压 Peak gate voltage | V_{GM} | | 5 | V |
| 峰值门极功率 Peak gate power | P_{GM} | | 5 | W |
| 平均门极功率 Average gate power | $P_{\text{G(AV)}}$ | over any 20ms period | 0.5 | W |
| 存储温度 Storage temperature | T_{stg} | | -40~150 | $^\circ\text{C}$ |
| 操作结温 Operation junction temperature | T_{VJ} | | 125 | $^\circ\text{C}$ |



电特性 ELECTRICAL CHARACTERISTIC ($T_C=25^\circ\text{C}$)

| 项 目 Parameter | 符 号 Symbol | 测 试 条 件 Condition | 最小 Min | 典型 Typ | 最大 Max | 单位 Unit | |
|--|------------------|--|--------------------|-----------|-----------|------------------------|----|
| 峰值重复断态电流 Peak Repetitive Blocking Current | I_{DRM} | $V_{\text{DM}}=V_{\text{DRM}}$, $T_j=25^\circ\text{C}$, gate open | - | - | 10 | μA | |
| | | $V_{\text{DM}}=V_{\text{DRM}}$, $T_j=125^\circ\text{C}$, gate open | - | - | 0.5 | mA | |
| 峰值通态电压 Peak on-state voltage | V_{TM} | $I_{\text{TM}}=5\text{A}$ | - | - | 1.7 | V | |
| 门极触发电流 Gate trigger current | I_{GT} | $V_{\text{DM}}=12\text{V}$, $R_L=100\ \Omega$ | MT1(-),MT2(+),G(+) | - | - | 10 | mA |
| | | | MT1(-),MT2(+),G(-) | - | - | 10 | mA |
| | | | MT1(+),MT2(-),G(-) | - | - | 10 | mA |
| | | | MT1(+),MT2(-),G(+) | - | - | 45 | mA |
| 门极触发电压 Gate trigger voltage | V_{GT} | $V_{\text{DM}}=12\text{V}$, $R_L=100\ \Omega$ | MT1(-),MT2(+),G(+) | - | - | 1.5 | V |
| | | | MT1(-),MT2(+),G(-) | - | - | 1.5 | V |
| | | | MT1(+),MT2(-),G(-) | - | - | 1.5 | V |
| | | | MT1(+),MT2(-),G(+) | - | - | 2.0 | V |
| 维持电流 Holding current | I_{H} | $V_{\text{DM}}=12\text{V}$, $I_{\text{GT}}=0.1\text{A}$ | - | - | 15 | mA | |
| 擎住电流 Latching current | I_{L} | $V_{\text{DM}}=12\text{V}$, $I_{\text{GT}}=0.1\text{A}$ | - | - | 30 | mA | |
| 断态临界电压上升率 Rise of off-state voltage | dV/dt | $V_{\text{DM}}=67\% V_{\text{DRM(MAX)}}$, $T_j=125^\circ\text{C}$, gate open | - | 50 | - | $\text{V}/\mu\text{s}$ | |
| 门极开通时间 Gate controlled turn-on time | t_{gt} | $I_{\text{TM}}=6\text{A}$, $V_{\text{DM}}=V_{\text{DRM(MAX)}}$, $I_{\text{G}}=0.1\text{A}$, $dI_{\text{G}}/dt=5\text{A}/\mu\text{S}$ | - | 2 | - | μs | |

热特性 THERMAL CHARACTERISTIC

| 项 目 Parameter | 符 号 Symbol | 条 件 Condition | 最小 Min | 典型 Typ | 最大 Max | 单位 Unit |
|---|----------------------|---------------------------------------|-----------|-----------|-----------|---------------------------|
| 结到管壳的热阻 Thermal resistance junction to case | $R_{\text{th(j-c)}}$ | full cycle (TO-220C/TO-126/TO-252) | | | 3.0 | $^\circ\text{C}/\text{W}$ |
| | | full cycle(TO-220HF) | | | 5.5 | $^\circ\text{C}/\text{W}$ |

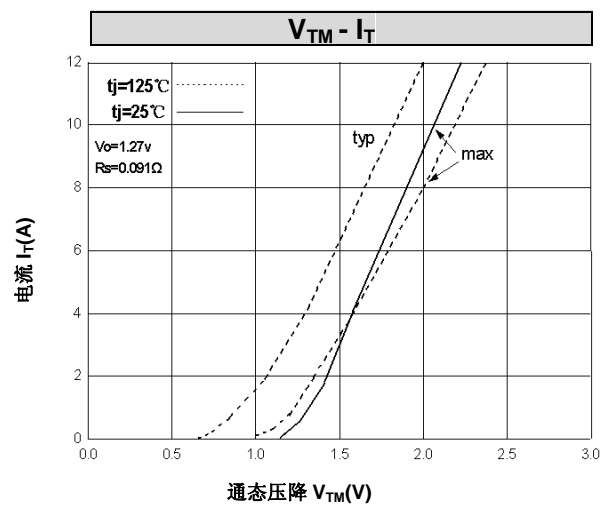
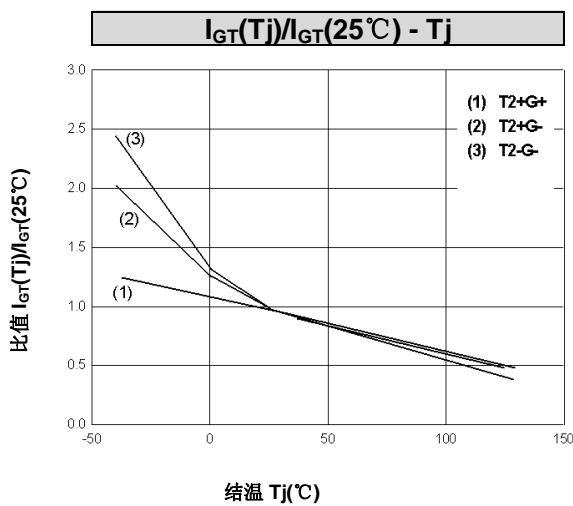
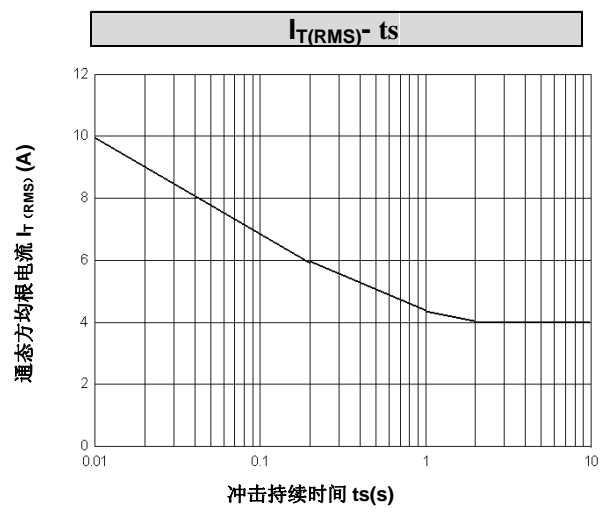
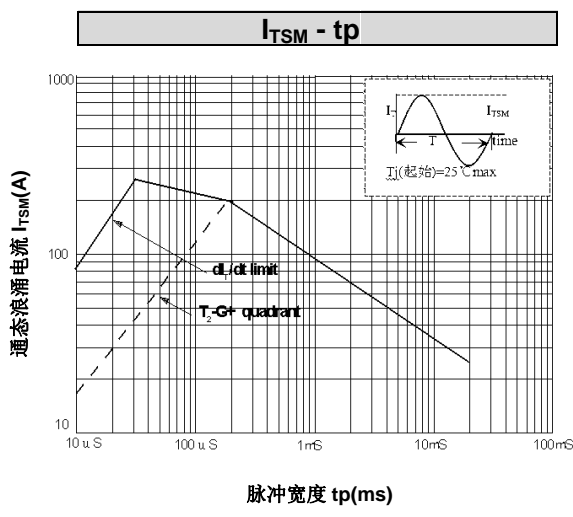
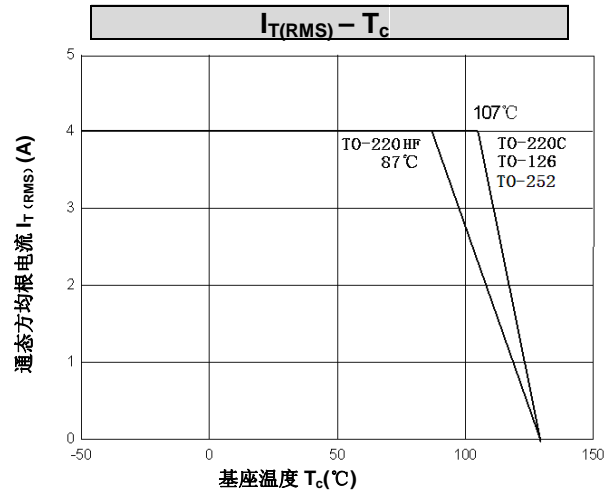
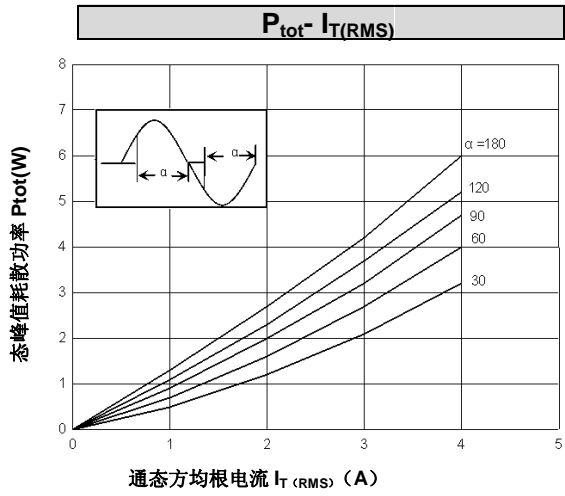
电绝缘特性 ELECTRICAL ISOLATION

| 项 目 Parameter | 符 号 Symbol | 条 件 Condition | 数 值 Value | 单 位 Unit |
|---------------------------|-------------------|--|--------------|-------------|
| 绝缘电压 Isolation voltage | V_{ISOL} | 1 minute, leads to mounting tab TO-220HF | 2000 | V |





特征曲线 ELECTRICAL CHARACTERISTICS (curves)

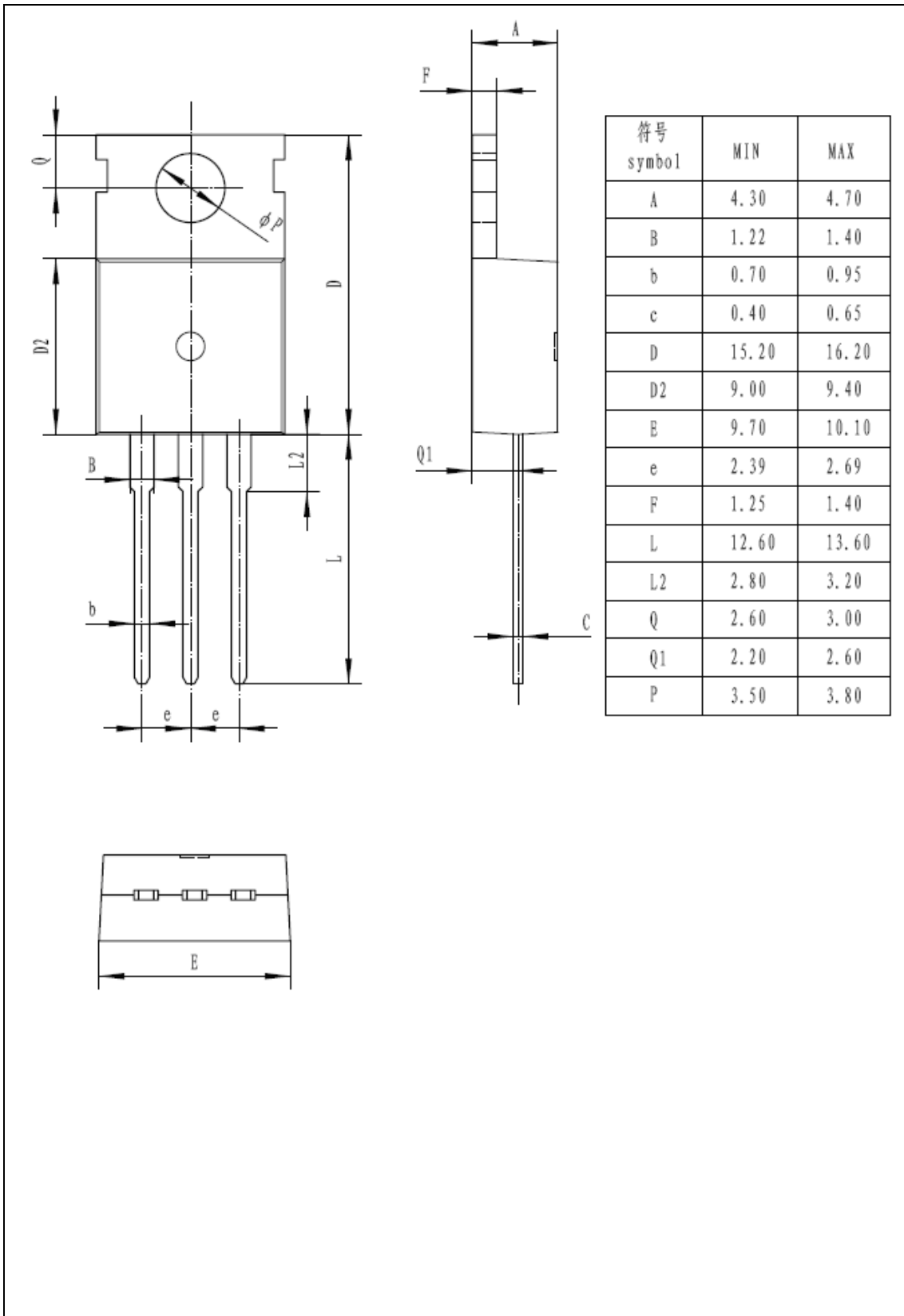




外形尺寸 PACKAGE MECHANICAL DATA

TO-220C

单位 Unit : mm

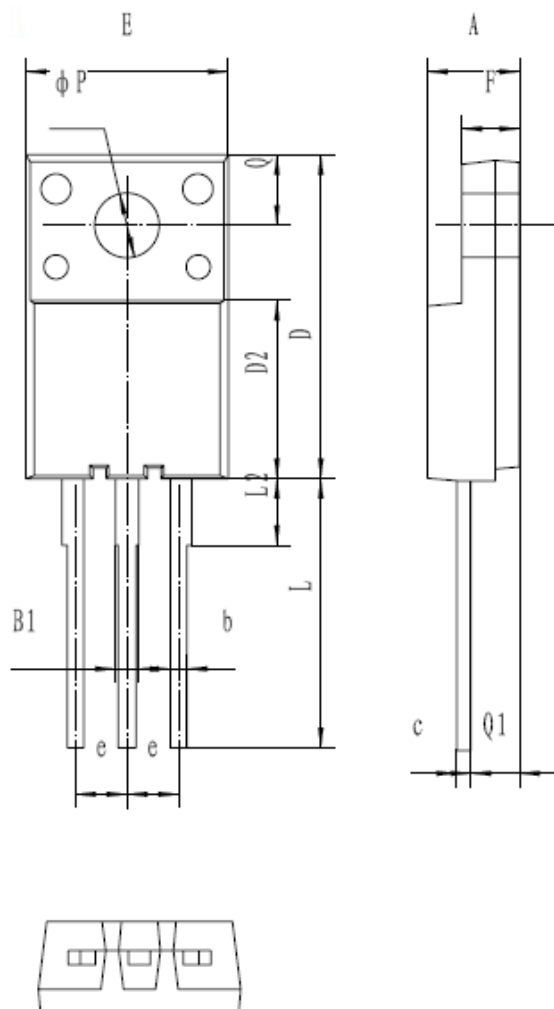




外形尺寸 PACKAGE MECHANICAL DATA

TO-220HF

单位 Unit : mm



| 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 |

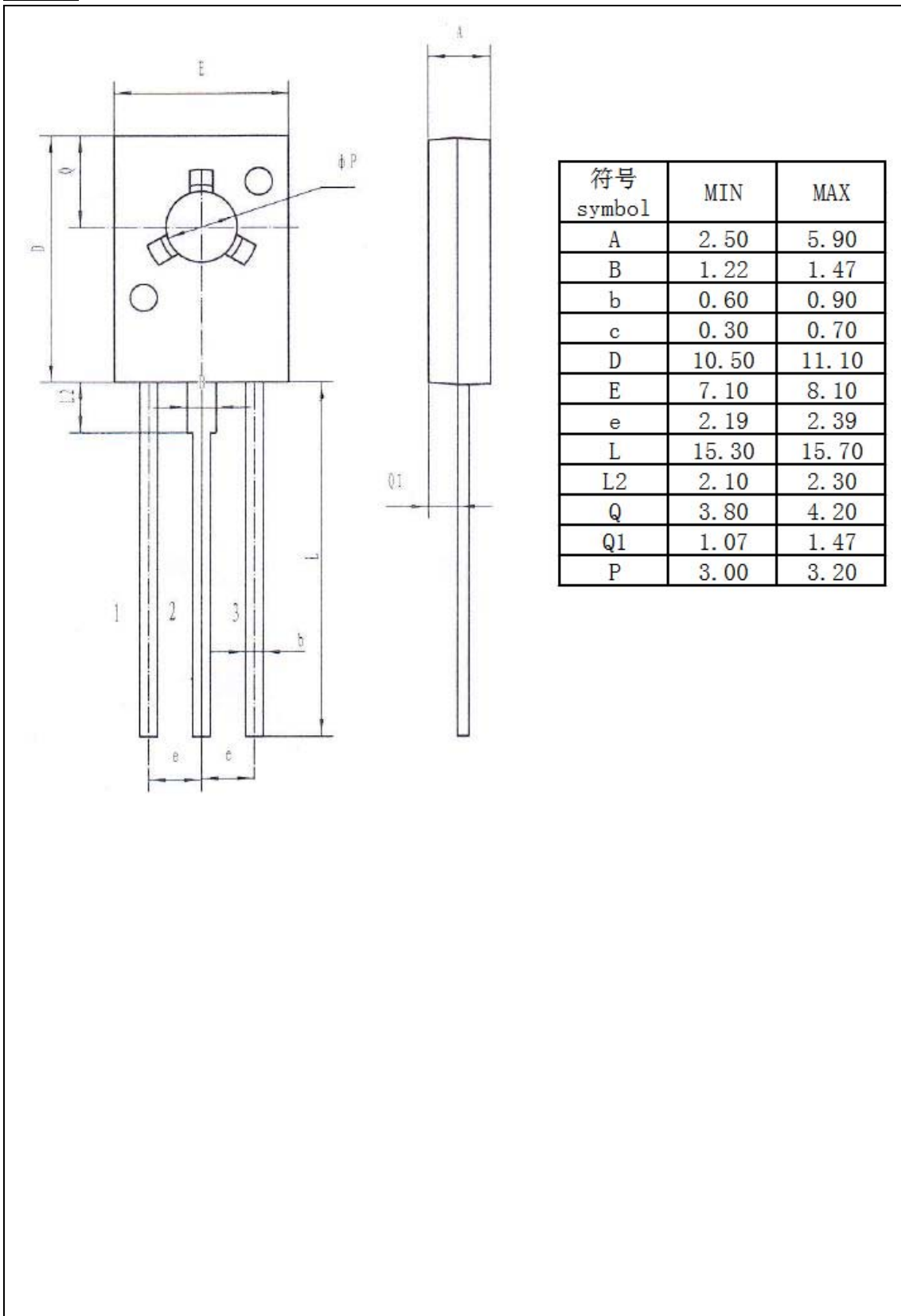




外形尺寸 PACKAGE MECHANICAL DATA

TO-126

单位 Unit : mm

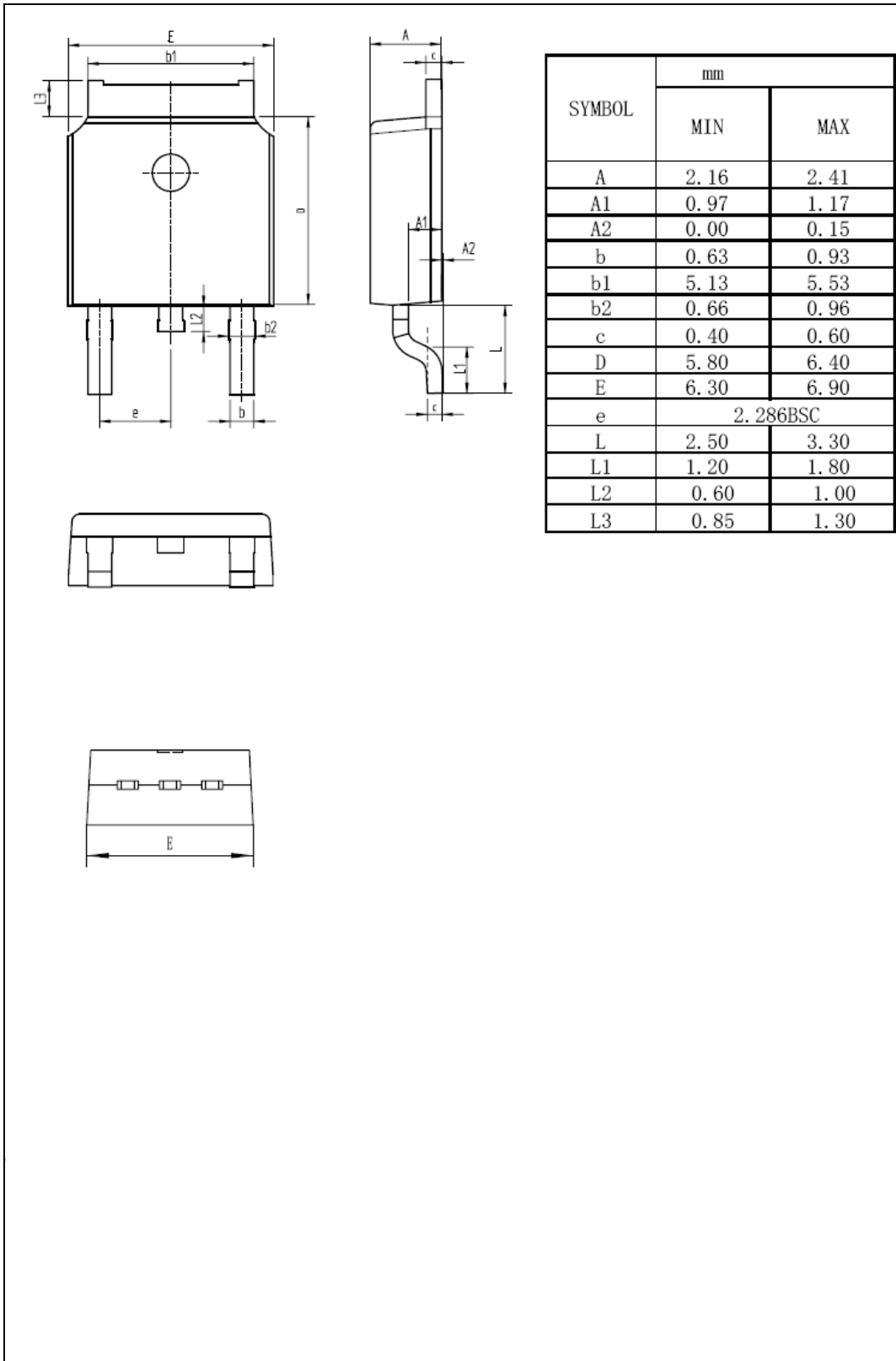




外形尺寸 PACKAGE MECHANICAL DATA

DPAK

单位 Unit : mm



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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.
4. Jilin Sino-microelectronics co., Ltd reserves the right to make changes in this specification sheet and is subject to change without prior notice.

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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 |
|------------|---------------|--------------|-----------------------------|
| 2014-4-21 | 201112G | 201404H | 更新 DPAK 外形 |
| 2015-1-10 | 201404H | 201501I | 更新 DPAK 管腿间距 |
| 2015-10-21 | 201501I | 201510J | 更改热阻、外形图 |
| | | | |

