



CS1210N3A

主要参数 MAIN CHARACTERISTICS

| | |
|--------------|------|
| $I_{T(RMS)}$ | 12A |
| V_{DRM} | 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

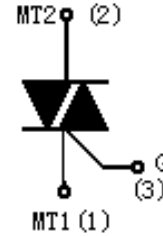
APPLICATIONS

- AC switching
- Phase control

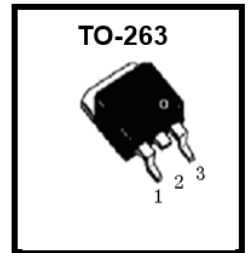
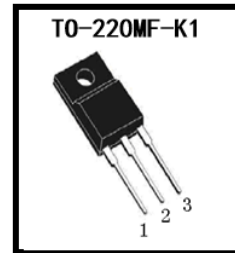
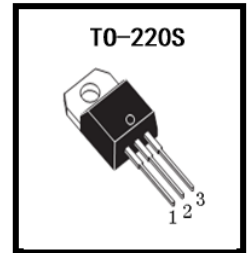
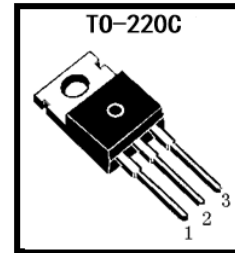
FEATURES

- Glass-passivated mesa chip for high 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 codes | | | | 印记 Marking | 封装 Package |
|------------------|-------------------|----------------|------------------|---------------|---------------|
| 有卤-条管 | 无卤-条管 | 有卤-袋装 | 无卤-袋装 | CS1210N3A | TO-263 |
| Halogen-Tube | halogen-Free-Tube | Halogen-Bag | Halogen-Free-Bag | | |
| CS1210N3A-S-B | CS1210N3A-S-BR | CS1210N3A-S-C | CS1210N3A-S-CR | | |
| 有卤-条管 | 无卤-条管 | 有卤-袋装 | 无卤-袋装 | CS1210N3A | TO-220C |
| Halogen-Tube | halogen-Free-Tube | Halogen-Bag | Halogen-Free-Bag | | |
| CS1210N3A-C-B | CS1210N3A-C-BR | CS1210N3A-C-C | CS1210N3A-C-CR | | |
| 有卤-条管 | 无卤-条管 | 有卤-袋装 | 无卤-袋装 | CS1210N3A | TO-220S |
| Halogen-Tube | halogen-Free-Tube | Halogen-Bag | Halogen-Free-Bag | | |
| CS1210N3A-CB-B | CS1210N3A-CB-BR | CS1210N3A-CB-C | CS1210N3A-CB-CR | | |
| 有卤-条管 | 无卤-条管 | 有卤-袋装 | 无卤-袋装 | CS1210N3A | TO-220MF-K1 |
| Halogen-Tube | halogen-Free-Tube | Halogen-Bag | Halogen-Free-Bag | | |
| CS1210N3A-F1-B | CS1210N3A-F1-BR | CS1210N3A-F1-C | CS1210N3A-F1-CR | | |

绝对最大额定值 ABSOLUTE RATINGS (T_c=25°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} | | ±800 | V |
| 通态方均根电流 On-state RMS current | I _{T(RMS)} | full sine wave | 12 | 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 | 150 | A |
| | | full sine wave, t=16.7ms | 161 | A |
| | I ² t | t=10ms | 112 | A ² s |
| 通态电流临界上升率 Repetitive rate of rise of on-state current after triggering | di/dt | I _{TM} =12A, I _G =0.2A, dI _G /dt=0.2A/μs | 100 | A/μs |
| 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 _{G(AV)} | over any 20ms period | 0.5 | W |
| 存储温度 Storage temperature | T _{stg} | | -40~150 | °C |
| 操作结温 Operation junction temperature | T _{VJ} | | 125 | °C |

电特性 ELECTRICAL CHARACTERISTIC (T_c=25°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 _{DM} =V _{DRM} , T _j =125°C, gate open | - | 0.2 | 0.8 | mA | |
| 峰值通态电压 Peak on-state voltage | V _{TM} | I _{TM} =10A | - | | 1.65 | V | |
| 门极触发电压 Gate trigger voltage | V _{GT} | V _{DM} =12V, R _L =100 Ω | - | - | 1.5 | V | |
| 门极开通时间 Gate controlled turn-on time | t _{gt} | I _{TM} =12A, V _{DM} =V _{DRM(MAX)} , I _G =0.1A, dI _G /dt=5A/μS | - | 2 | - | μs | |
| 门极触发电流 Gate trigger current | I _{GT} | V _{DM} =12V, R _L =100 Ω | MT1(-), MT2(+), G(+) | | | ≤10 | mA |
| | | | MT1(-), MT2(+), G(-) | | | | mA |
| | | | MT1(+), MT2(-), G(-) | | | | mA |
| 维持电流 Holding current | I _H | V _{DM} =12V, I _{GT} =0.1A | | ≤25 | | mA | |
| 擎住电流 Latching current | I _L | V _{DM} =12V, I _{GT} =0.1A | | ≤50 | | mA | |
| 断态临界电压上升率 Rise of off- state voltage | dV/dt | V _{DM} =67% V _{DRM(MAX)} , T _j =125°C, gate open | 40 | - | - | V/μs | |

热特性 THERMAL CHARACTERISTIC

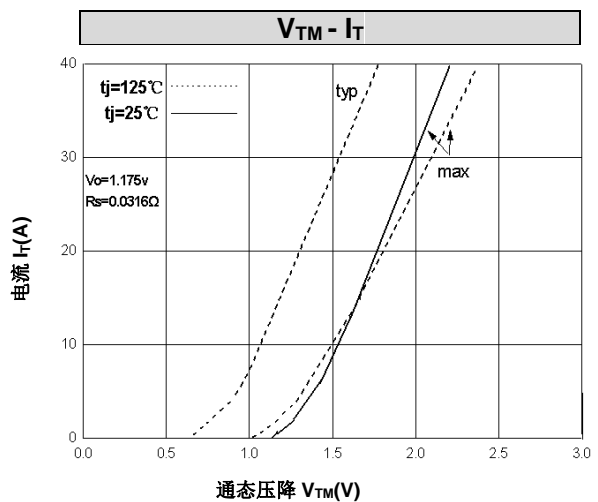
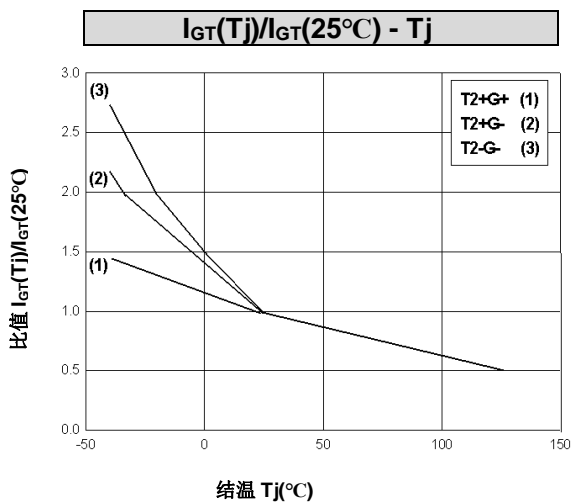
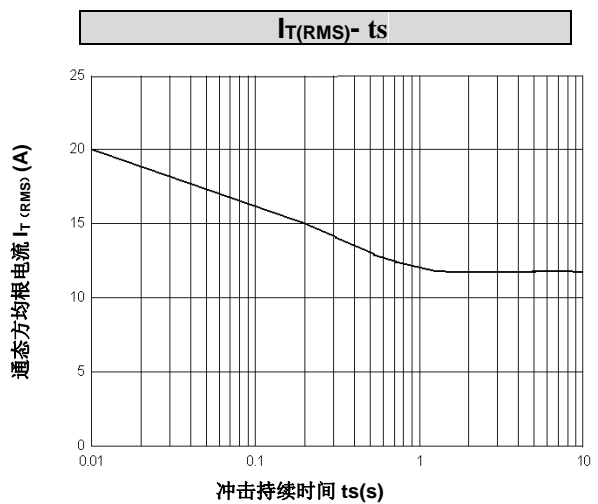
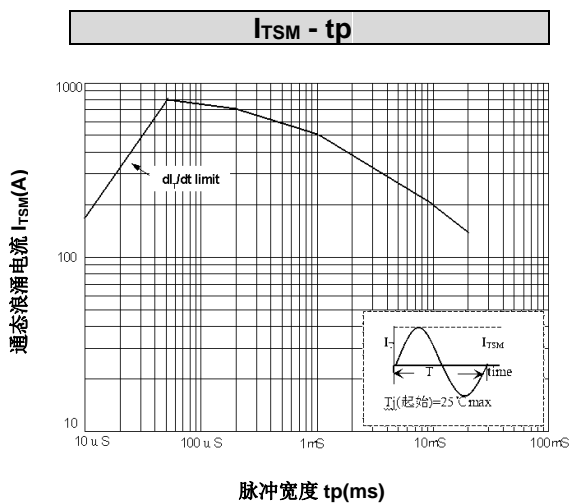
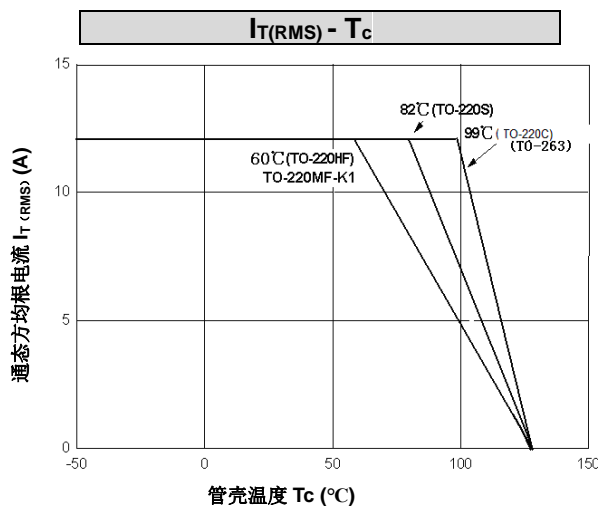
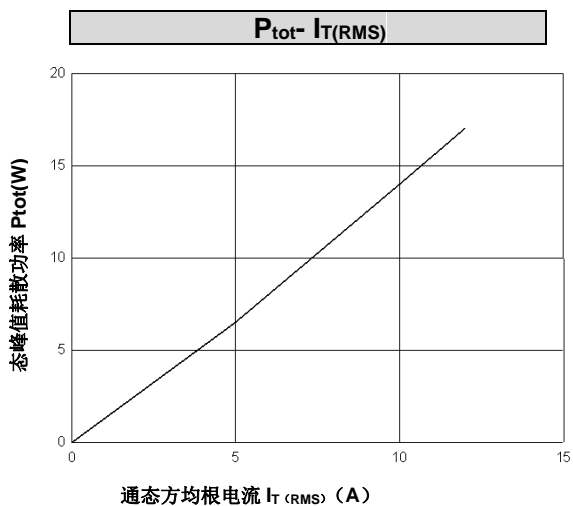
| 项 目 Parameter | 符 号 Symbol | 条 件 Condition | 最小 Min | 典型 Typ | 最大 Max | 单位 Unit |
|---|----------------------|----------------------------|-----------|-----------|-----------|------------|
| 结到管壳的热阻 Thermal resistance junction to case | R _{th(j-c)} | full cycle(TO-220MF-K1) | | | 4.0 | °C/W |
| | | full cycle(TO-220S) | | | 2.4 | °C/W |
| | | full cycle(TO-220C/TO-263) | | | 1.5 | °C/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-220MF-K1 | 2000 | V |



特征曲线 ELECTRICAL CHARACTERISTICS (curves)

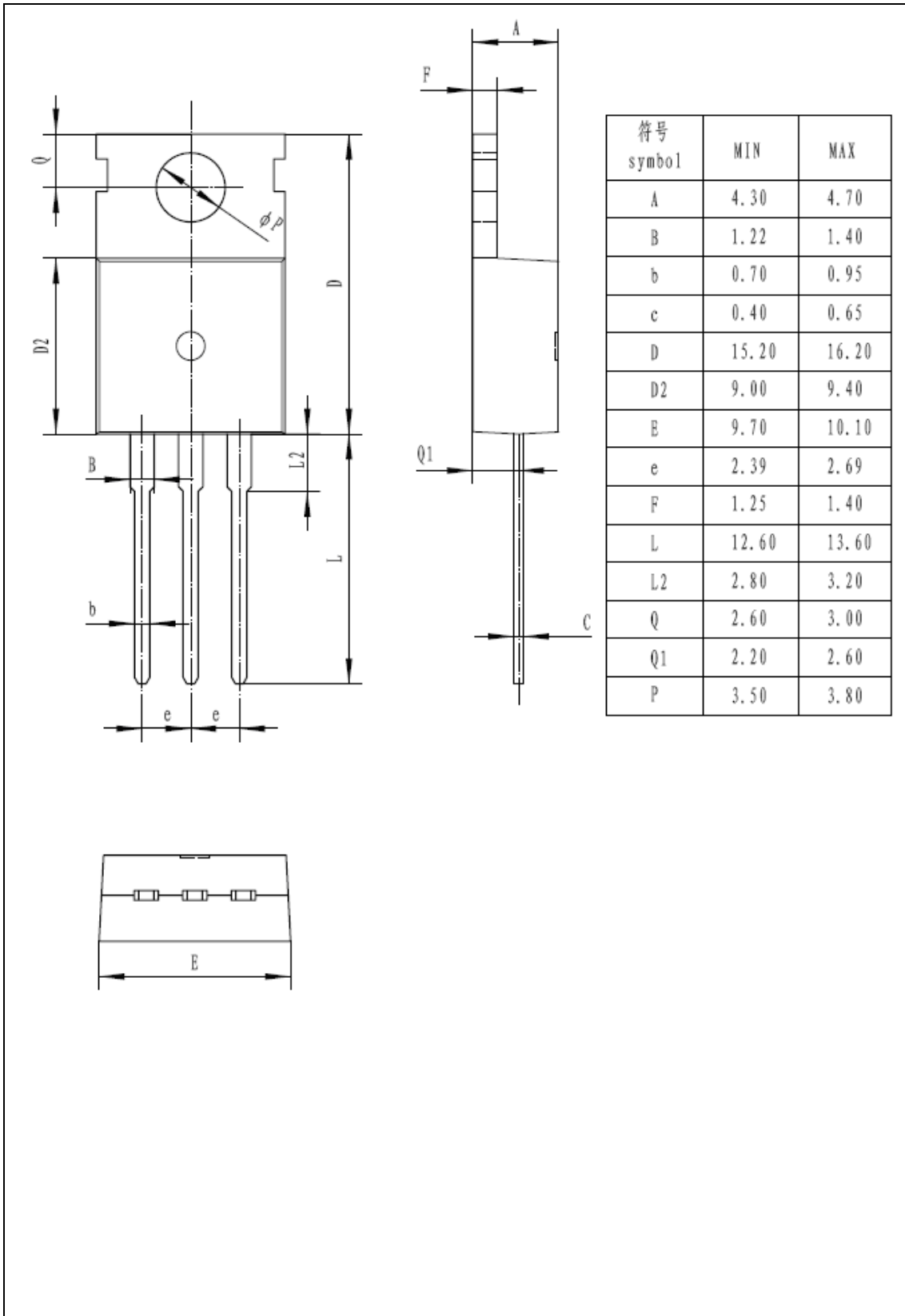




外形尺寸 PACKAGE MECHANICAL DATA

TO-220C

单位 Unit : mm

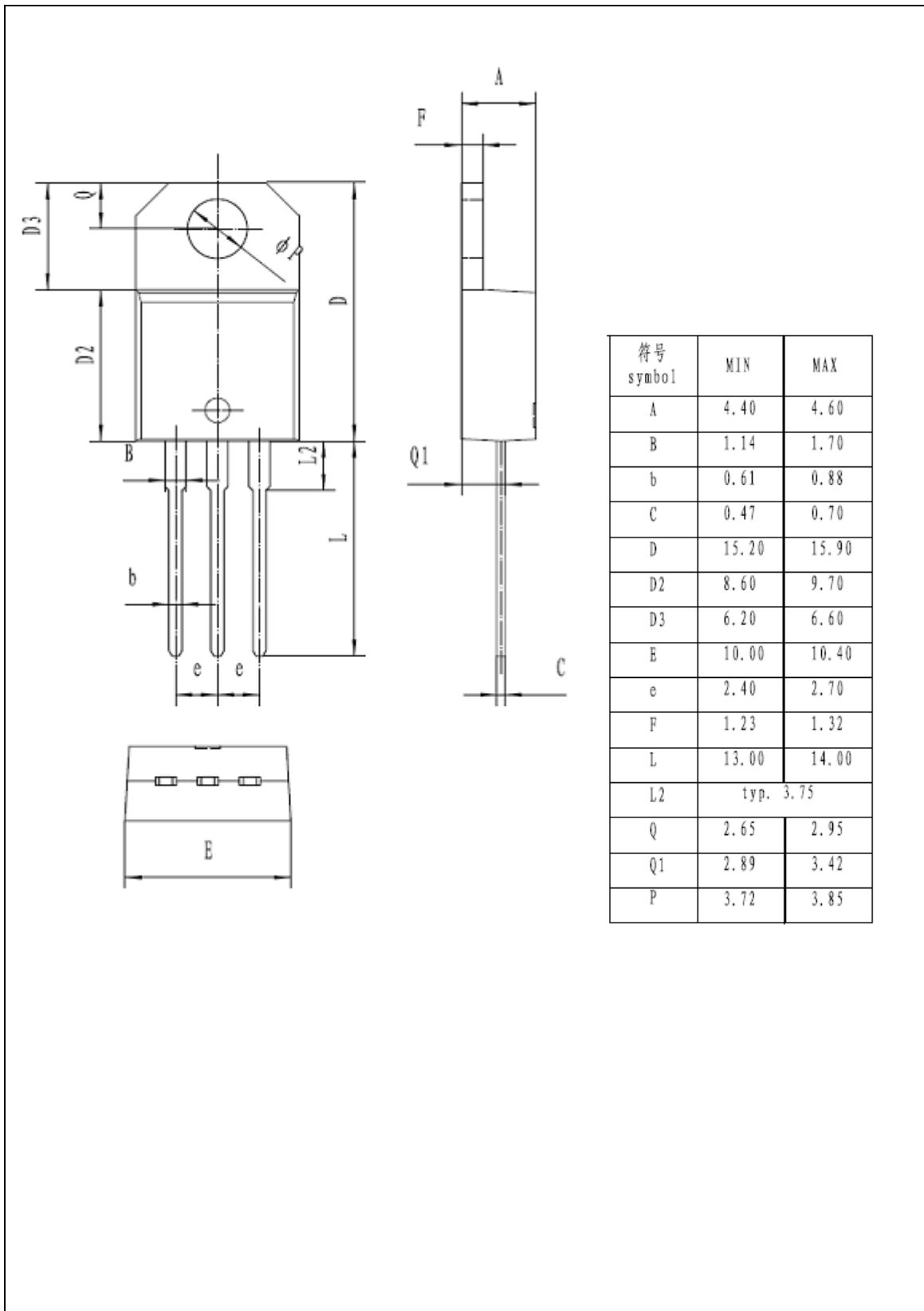




外形尺寸 PACKAGE MECHANICAL DATA

TO-220S

单位 Unit : mm

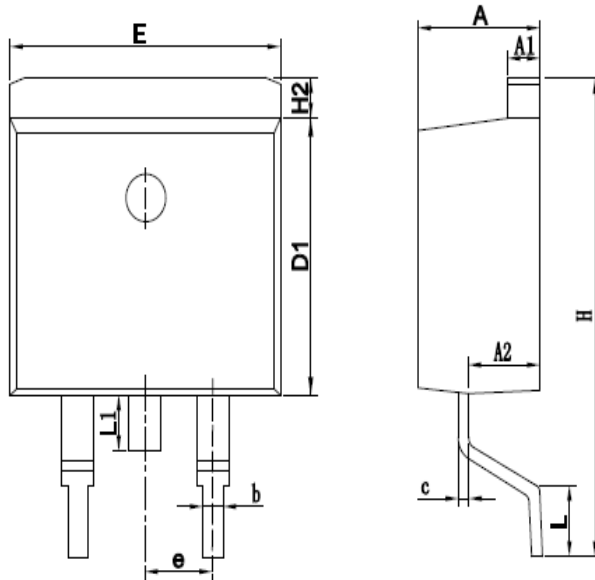




外形尺寸 PACKAGE MECHANICAL DATA

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 |

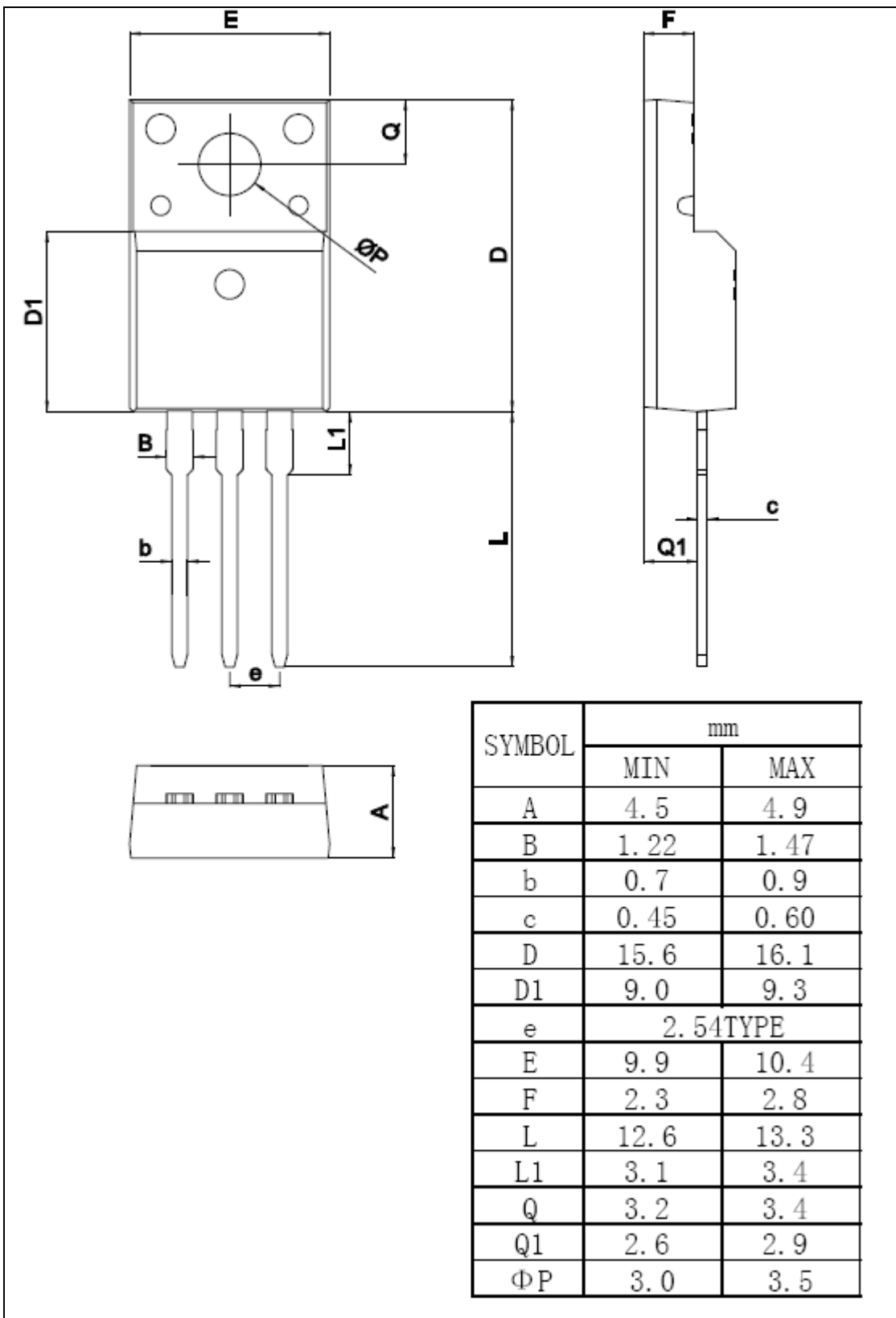
单位: mm



外形尺寸 PACKAGE MECHANICAL DATA

TO-220MF-K1

单位 Unit : mm





注意事项

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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.
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联系方式

吉林华微电子股份有限公司

公司地址：吉林省吉林市深圳街 99 号

邮编：132013

总机：86-432-64678411

传真：86-432-64665812

网址：www.hwdz.com.cn

CONTACT

JILIN SINO-MICROELECTRONICS CO., LTD.

ADD: No.99 Shenzhen Street, Jilin City, Jilin Province, China.

Post Code: 132013

Tel: 86-432-64678411

Fax: 86-432-64665812

Web Site: www.hwdz.com.cn