

3TT16A

主要参数 MAIN CHARACTERISTICS

| | |
|--------------|------|
| $I_{T(RMS)}$ | 16A |
| V_{DRM} | 800V |
| I_{GT} | 35mA |

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
- 三象限可控硅，触发电流的一致性
- 环保 RoHS 产品

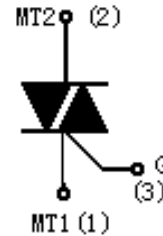
APPLICATIONS

- AC switching
- Phase control

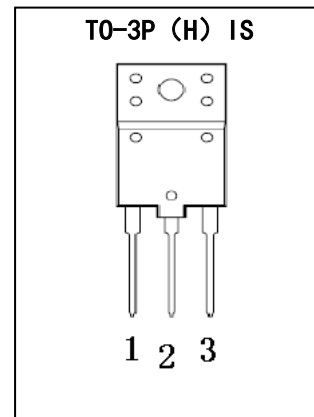
FEATURES

- Glass-passivated mesa chip for reliability and uniform
- Uniform gate trigger currents in three quadrants
- 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 | | |
| Halogen-Tube | Halogen-Free-Tube | Halogen-Bag | Halogen-Free-Bag | | |
| 3TT16A-GA-B | 3TT16A-GA-BR | N/A | N/A | 3TT16A | TO-3P (H) IS |

概述 GENERAL DESCRIPTION

3TT16A是玻璃钝化芯片结构的三象限双向晶闸管，产品在第四象限不可触发，具有较高的使用可靠性。可适用于容易出现较高 dV/dt 或 dI/dt 的交流全波控制线路中，特别推荐应用与电感性负载控制（如电机控制线路）。器件封装形式有TO-3P（H）IS（塑料全封装）。

3TT16A is Glass passivated three quadrant triacs, designed for high performance full-wave ac control applications where high static and dynamic dV/dt and high dI/dt can occur. They are specially recommended for use on inductive loads such as motor control circuits. Available packages is TO-3P (H) IS (plastic envelope).

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} | | ± 800 | V |
| 通态方均根电流 On-state RMS current | $I_{\text{T(RMS)}}$ | full sine wave, | 16 | A |
| 非重复浪涌峰值通态电流 Non-repetitive surge peak on-state current | I_{TSM} | full sine wave , $t=20\text{ms}$ | 150 | A |
| | | full sine wave , $t=16.7\text{ms}$ | 161 | A |
| | I^2t | $t=10\text{ms}$ | 112.5 | A^2s |
| 通态电流临界上升率 Repetitive rate of rise of on-state current after triggering | dI/dt | $I_{\text{TM}}=20\text{A}$, $I_{\text{G}}=0.2\text{A}$, $dI_{\text{G}}/dt=0.2\text{A}/\mu\text{s}$ | 100 | $\text{A}/\mu\text{s}$ |
| 峰值门极电流 Peak gate current | I_{GM} | | 4 | 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} | $V_{DM}=V_{DRM}$, $T_j=125^\circ\text{C}$, gate open | | - | - | 1.0 | mA |
| 峰值通态电压 Peak on-state voltage | V_{TM} | $I_{TM}=20\text{A}$ | | - | 1.4 | 1.7 | V |
| 门极触发电流 Gate trigger current | I_{GT} | $V_{DM}=12\text{V}$, $R_L=100\Omega$ | MT1(-),MT2(+),G(+) | - | - | 35 | mA |
| | | | MT1(-),MT2(+),G(-) | - | - | 35 | mA |
| | | | MT1(+),MT2(-),G(-) | - | - | 35 | mA |
| 门极触发电压 Gate trigger voltage | V_{GT} | $V_{DM}=12\text{V}$, $R_L=100\Omega$ | MT1(-),MT2(+),G(+) | - | 0.7 | 1.5 | V |
| | | | MT1(-),MT2(+),G(-) | - | 0.7 | 1.5 | V |
| | | | MT1(+),MT2(-),G(-) | - | 0.7 | 1.5 | V |
| 维持电流 Holding current | I_H | $V_{DM}=12\text{V}$, $I_{GT}=0.1\text{A}$ | | - | - | 35 | mA |
| 擎住电流 Latching current | I_L | $V_{DM}=12\text{V}$, $I_{GT}=0.1\text{A}$ | MT1(-),MT2(+),G(+) | - | - | 50 | mA |
| | | | MT1(-),MT2(+),G(-) | - | - | 60 | mA |
| | | | MT1(+),MT2(-),G(-) | - | - | 50 | mA |
| 断态临界电压上升率 Rise of off- state voltage | dV/dt | $V_{DM}=67\% V_{DRM(MAX)}$, $T_j=125^\circ\text{C}$, gate open | | 1000 | - | - | V/ μs |
| 门极开通时间 Gate controlled turn-on time | tgt | $I_{TM}=20\text{A}$, $V_{DM}=V_{DRM(MAX)}$, $I_G=0.1\text{A}$, $dI_G/dt=5\text{A}/\mu\text{s}$ | | - | 2 | - | μs |

热特性 THERMAL CHARACTERISTIC

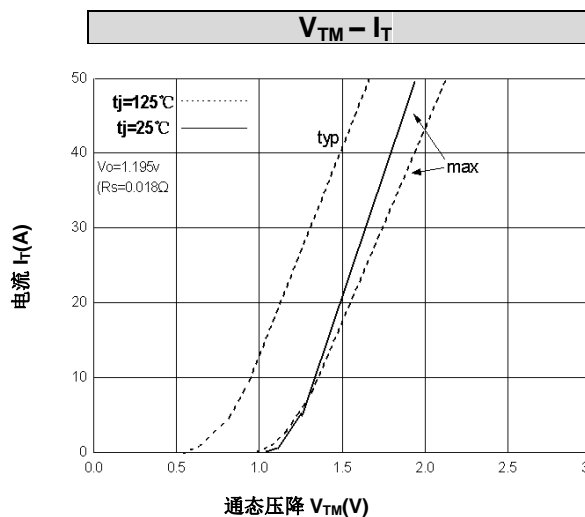
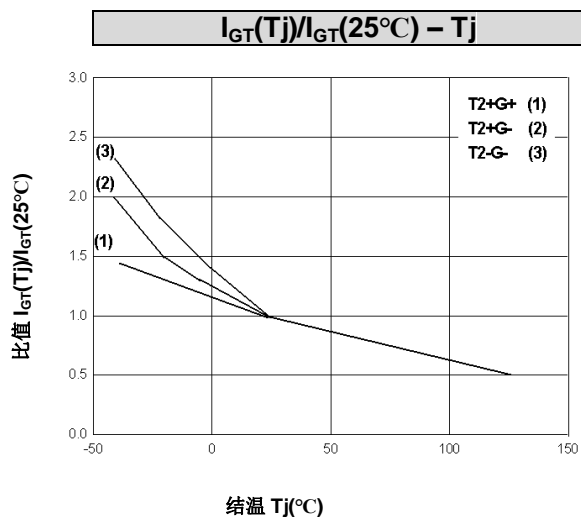
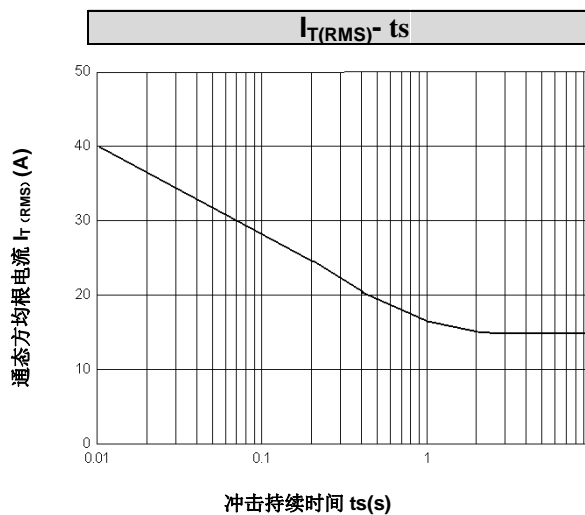
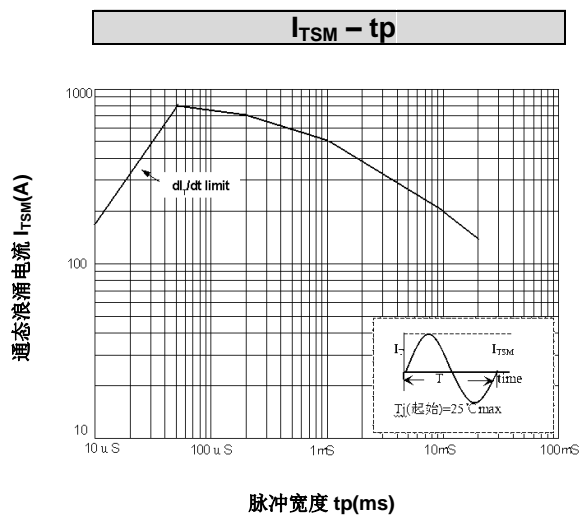
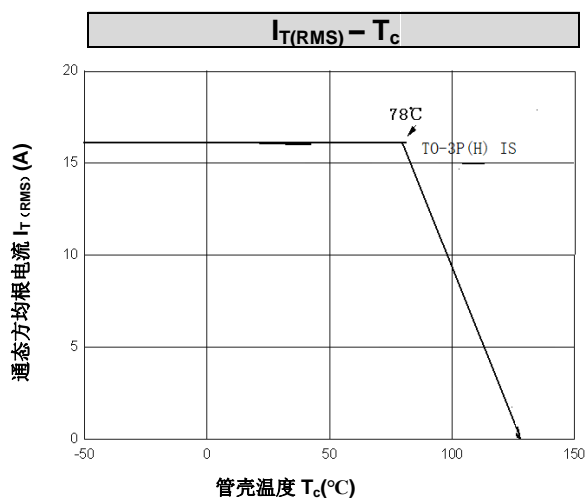
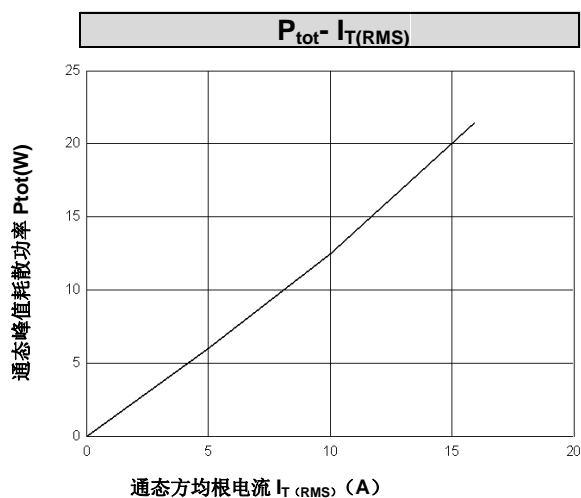
| 项 目 Parameter | 符 号 Symbol | 条 件 Condition | 最小 Min | 典型 Typ | 最大 Max | 单位 Unit |
|---|---------------|------------------|-----------|-----------|-----------|---------------------------|
| 结到管壳的热阻 Thermal resistance junction to case | $R_{th(j-c)}$ | TO-3P (H) IS | | | 2.2 | $^\circ\text{C}/\text{W}$ |

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-3P (H) IS | 2000 | V |



特征曲线 ELECTRICAL CHARACTERISTICS (curves)

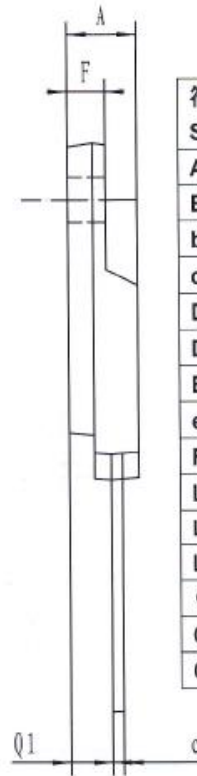
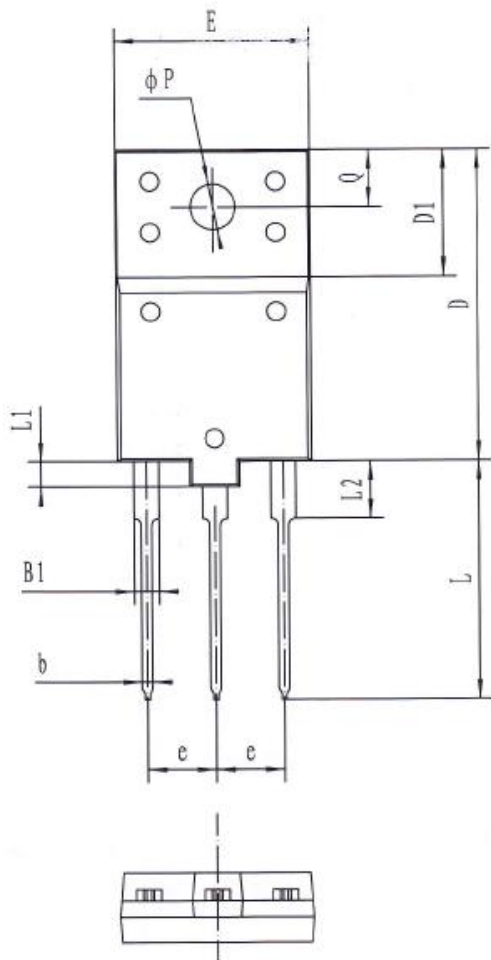




外形尺寸 PACKAGE MECHANICAL DATA

TO-3P (H) IS

单位 Unit : mm



| 符号 Symbol | Min | Max |
|--------------|------------|------|
| A | 5.2 | 5.8 |
| B1 | 1.8 | 2.2 |
| b | 0.75 | 1.05 |
| c | 0.8 | 1.1 |
| D | 24.0 | 25.0 |
| D1 | 9.8 | 10.2 |
| E | 15.0 | 16.0 |
| e | 5.45 (typ) | |
| F | 2.7 | 3.3 |
| L | 18.5 | 19.5 |
| L1 | 1.8 | 2.2 |
| L2 | 4.3 | 4.7 |
| φP | 3.4 | 3.8 |
| Q | 4.3 | 4.7 |
| Q1 | 3.1 | 3.5 |



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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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