

**描述 / Descriptions**

TO-220 塑封封装 N 沟道 MOS 场效应管。N-CHANNEL MOSFET in a TO-220 Plastic Package.

**特征 / Features**

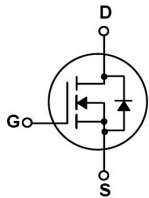
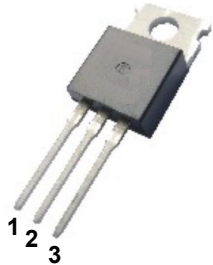
$R_{DS(on)}$ 的典型值是  $0.15\Omega$ ,低电容, 开关速度快。

Typical  $R_{DS(on)}=0.15\Omega$ ,low intrinsic capacitance  $C_{iss}$ , fast switching.

**用途 / Applications**

显示器监控,不间断电源,DC-DC 转换。

Monitor displays, UPS,DC-DC converters.

**内部等效电路 / Equivalent Circuit****引脚排列 / Pinning**

PIN1 : G

PIN 2 : D

PIN 3 : S

**放大及印章代码 /  $h_{FE}$  Classifications & Marking**

见印章说明。 See Marking Instructions.

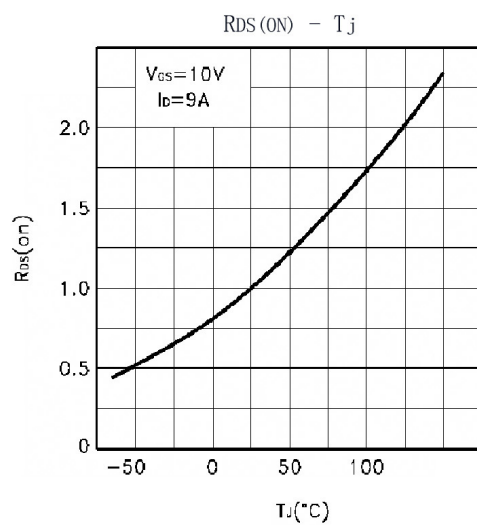
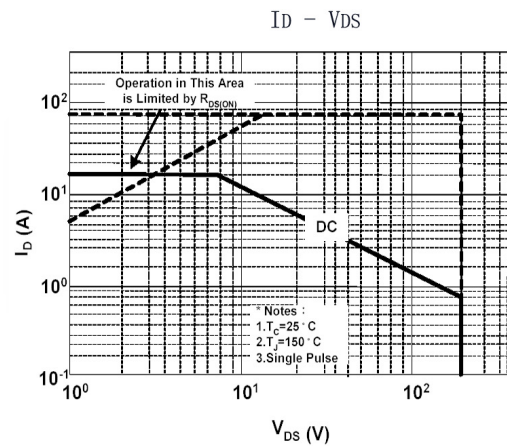
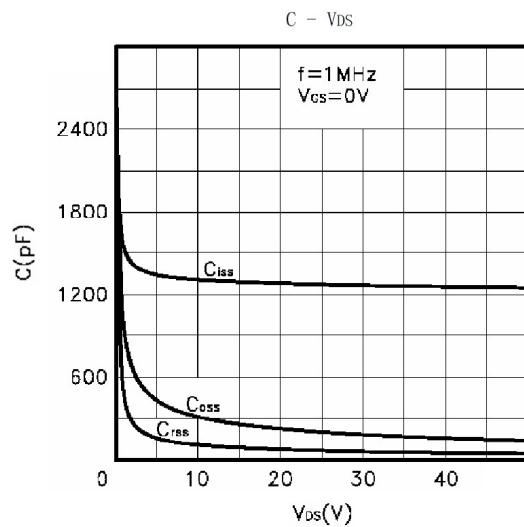
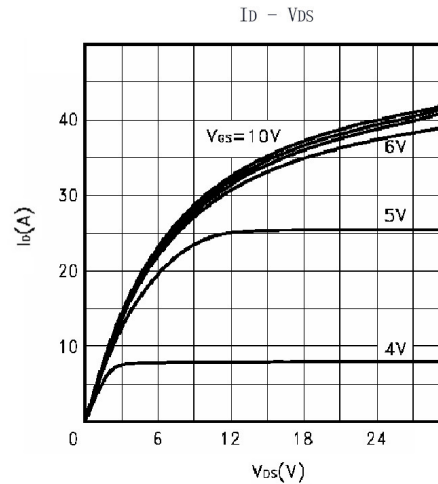
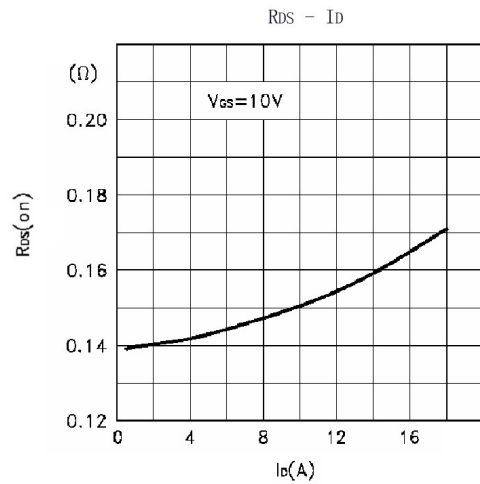
**极限参数 / Absolute Maximum Ratings(Ta=25°C)**

| 参数<br>Parameter              | 符号<br>Symbol           | 数值<br>Rating | 单位<br>Unit |
|------------------------------|------------------------|--------------|------------|
| Drain-Source Voltage         | $V_{DS}$               | 200          | V          |
| Drain- gate Voltage          | $V_{DGR}$              | 200          | V          |
| Gate-Source Voltage          | $V_{GS}$               | ±30          | V          |
| Drain Current                | $I_D(T_c=25^{\circ}C)$ | 20           | A          |
| Pulsed Drain Current         | $I_{DM}$               | 72           | A          |
| Total Power Dissipation      | $P_{TOT}$              | 125          | W          |
| Insulation Withstand Voltage | $V_{ISO}$              | 2500         | V          |
| Junction Temperature Range   | $T_j$                  | 150          | °C         |
| Storage Temperature Range    | $T_{stg}$              | -55~150      | °C         |

**电性能参数 / Electrical Characteristics(Ta=25°C)**

| 参数<br>Parameter                   | 符号<br>Symbol  | 测试条件<br>Test Conditions                       | 最小值<br>Min | 典型值<br>Typ | 最大值<br>Max | 单位<br>Unit |
|-----------------------------------|---------------|-----------------------------------------------|------------|------------|------------|------------|
| Zero Gate Voltage Drain Current   | $V_{(BR)DSS}$ | $V_{GS}=0V$ $I_D=250\mu A$                    | 200        |            |            | V          |
| Gate Threshold Voltage            | $V_{GS(th)}$  | $V_{DS}=V_{GS}$ $I_D=250\mu A$                | 2.0        | 3.0        | 4.0        | V          |
| Static Drain-Source On-Resistance | $R_{DS(on)}$  | $V_{GS}=10V$ $I_D=12A$                        |            | 0.15       | 0.18       | $\Omega$   |
| Zero Gate Voltage Drain Current   | $I_{DSS}$     | $V_{DS}=200V$ $V_{GS}=0V$                     |            |            | 10         | $\mu A$    |
| Gate-Body Leakage Current Forward | $I_{GSS}$     | $V_{GS}=30V$ $V_{DS}=0V$                      |            |            | 100        | nA         |
|                                   |               | $V_{GS}=-30V$ $V_{DS}=0V$                     |            |            | -100       |            |
| Forward On Voltage                | $V_{SD}$      | $V_{GS}=0V$ $I_{SD}=12A$<br>$T_j=25^{\circ}C$ |            |            | 1.3        | V          |
| Input Capacitance                 | $C_{iss}$     | $V_{GS}=0V$ $V_{DS}=20V$<br>$f=1.0MHz$        |            | 900        |            | pF         |
| Output Capacitance                | $C_{oss}$     |                                               |            | 180        |            |            |
| Reverse Transfer Capacitance      | $C_{rss}$     |                                               |            | 70         |            |            |

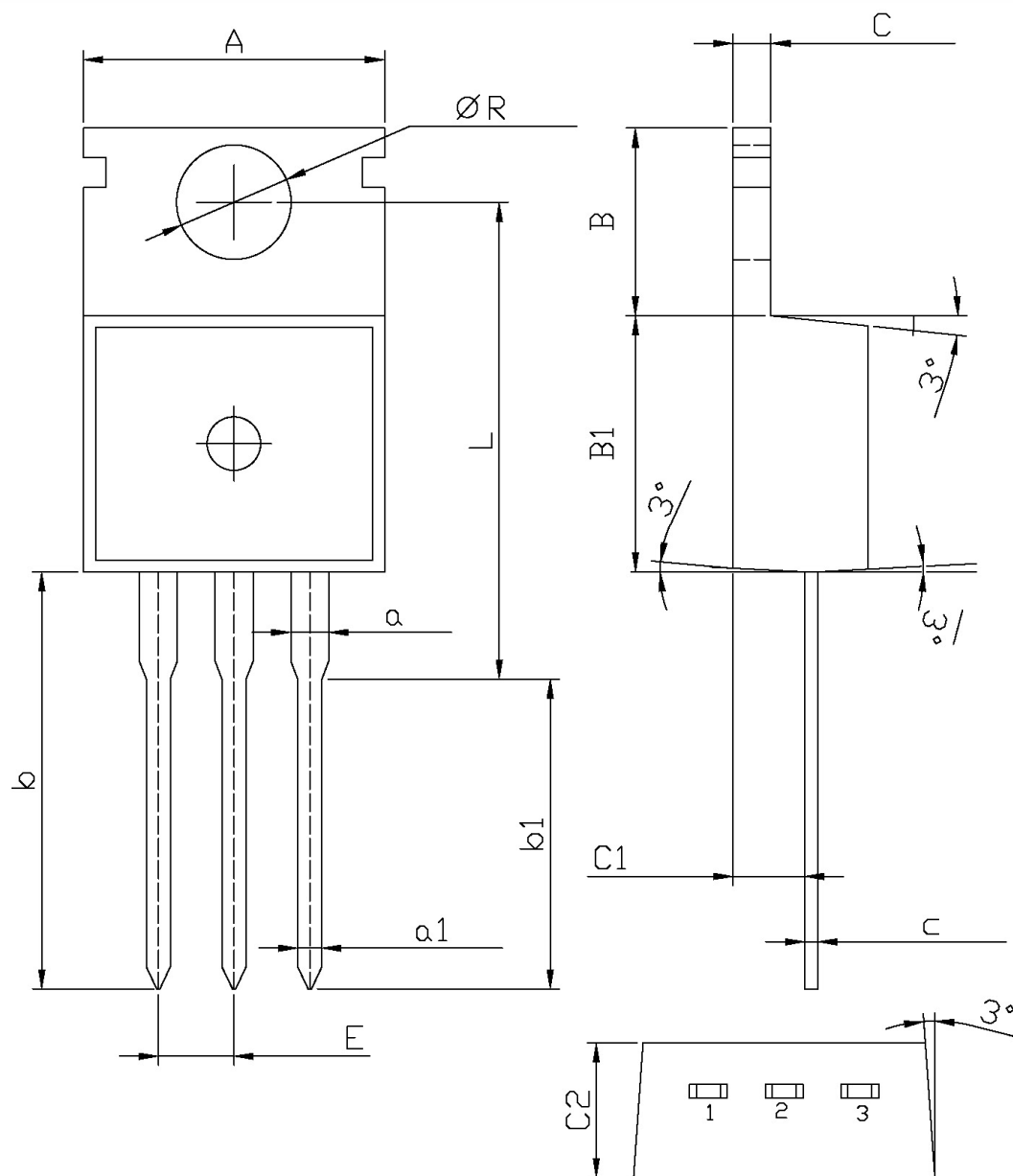
**电参数曲线图 / Electrical Characteristic Curve**



外形尺寸图 / Package Dimensions

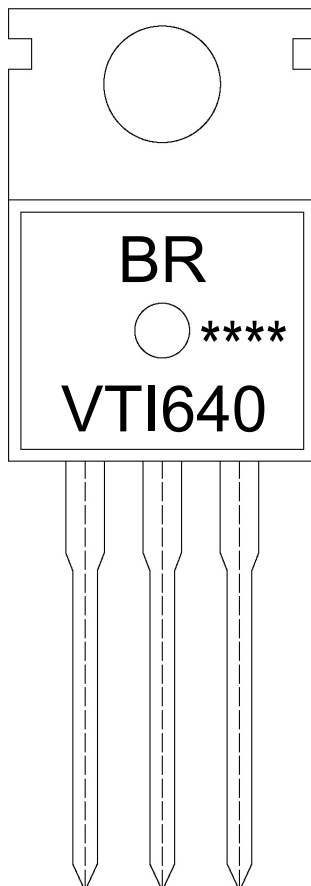
T□-220

单位: mm



| Symbol | Dimensions In Millimeters |      | Symbol | Dimensions In Millimeters |     |
|--------|---------------------------|------|--------|---------------------------|-----|
|        | Min                       | Max  |        | Min                       | Max |
| A      | 9.8                       | 10.2 | C      | 1.2                       | 1.4 |
| R      | 3.56                      | 3.64 | B      | 6.3                       | 6.7 |
| L      | 15.7                      | 16.1 | B1     | 9.0                       | 9.4 |
| b      | 12.6                      | 13.6 | C1     | 2.2                       | 2.6 |
| b1     | 9.6                       | 10.6 | a1     | 0.7                       | 0.9 |
| a      | 1.22                      | 1.32 | c      | 0.4                       | 0.6 |
| E      | 2.34                      | 2.74 | C2     | 4.3                       | 4.7 |

**印章说明 / Marking Instructions**



说明：

BR： 为公司代码

VTI640： 为产品型号

\*\*\*\*： 为生产批号代码，随生产批号变化。

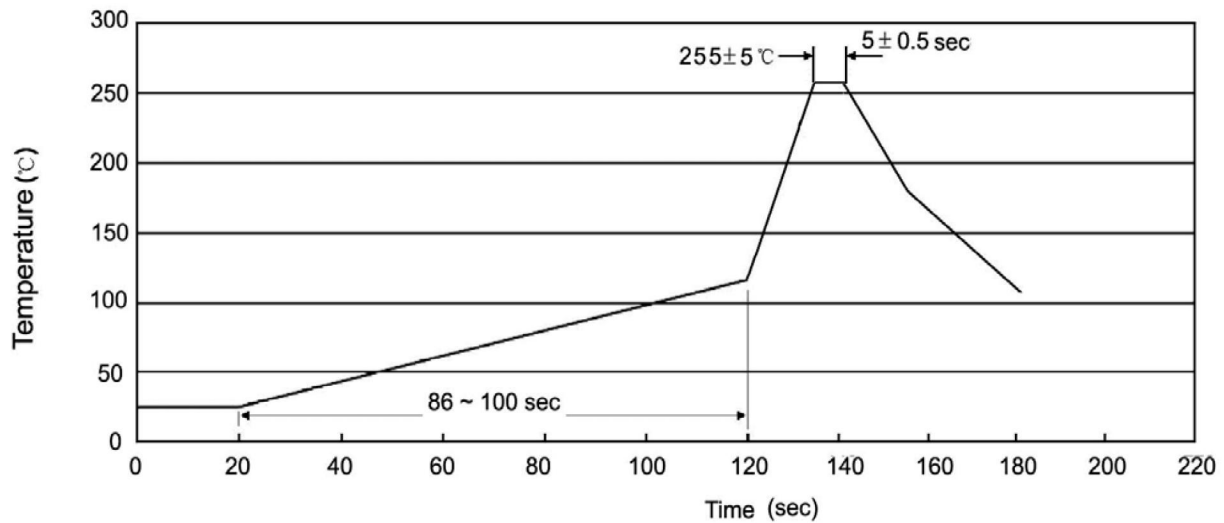
Note:

BR: Company Code

VTI640: Product Type.

\*\*\*\*: Lot No. Code, code change with Lot No.

## 波峰焊温度曲线图(无铅) / Temperature Profile for Dip Soldering(Pb-Free)



说明：

- 1、预热温度 25 ~ 150°C，时间 60 ~ 90sec;
- 2、峰值温度 255±5°C，时间持续为 5±0.5sec;
- 3、焊接制程冷却速度为 2 ~ 10°C/sec.

Note:

- 1.Preheating:25~150°C, Time:60~90sec.
- 2.Peak Temp.:255±5°C, Duration:5±0.5sec.
3. Cooling Speed: 2~10°C/sec.

## 耐焊接热试验条件 / Resistance to Soldering Heat Test Conditions

温度：270±5°C

时间：10±1 sec.

Temp.:270±5°C

Time:10±1 sec

## 包装规格 / Packaging SPEC.

散件包装 / BULK

| Package Type<br>封装形式 | Units 包装数量       |                       |                        |                              |                        | Dimension 包装尺寸 (unit: mm <sup>3</sup> ) |             |             |
|----------------------|------------------|-----------------------|------------------------|------------------------------|------------------------|-----------------------------------------|-------------|-------------|
|                      | Units/Bag<br>只/袋 | Bags/Inner Box<br>袋/盒 | Units/Inner Box<br>只/盒 | Inner Boxes/Outer Box<br>盒/箱 | Units/Outer Box<br>只/箱 | Bag 袋                                   | Inner Box 盒 | Outer Box 箱 |
| TO-220/F             | 200              | 10                    | 2,000                  | 5                            | 10,000                 | 135×190                                 | 237×172×102 | 560×245×195 |

套管包装 / TUBE

| Package Type<br>封装形式 | Units 包装数量         |                         |                        |                              |                        | Dimension 包装尺寸 (unit: mm <sup>3</sup> ) |             |             |
|----------------------|--------------------|-------------------------|------------------------|------------------------------|------------------------|-----------------------------------------|-------------|-------------|
|                      | Units/Tube<br>只/套管 | Tubes/Inner Box<br>套管/盒 | Units/Inner Box<br>只/盒 | Inner Boxes/Outer Box<br>盒/箱 | Units/Outer Box<br>只/箱 | Tube 套管                                 | Inner Box 盒 | Outer Box 箱 |
| TO-220/F             | 50                 | 20                      | 1,000                  | 5                            | 5,000                  | 532×31.4×5.5                            | 555×164×50  | 575×290×180 |

## 使用说明 / Notices