

BRF16N65

Rev.D Nov.-2015

描述 / Descriptions

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

特征 / Features

低栅极电荷，快速开关。

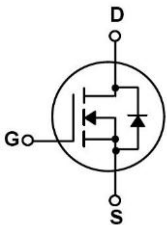
Low gate charge, Fast switching.

用途 / Applications

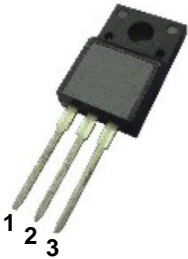
适用于开关电源、快速开关等。

Suitable for Switch Mode Power Supply, High speed power switching ect.

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 Parameter | 符号 Symbol | 数值 Rating | 单位 Unit |
|---|------------------------------|--------------|------------------|
| Drain-Source Voltage | V_{DSS} | 650 | V |
| Drain Current | $I_D(T_C=25^\circ\text{C})$ | 16 | A |
| Drain Current | $I_D(T_C=100^\circ\text{C})$ | 10 | A |
| Drain Current - Pulsed | I_{DM} | 64 | A |
| Gate-Source Voltage | V_{GSS} | ± 20 | V |
| Single Pulsed Avalanche Energy | E_{AS} | 645 | mJ |
| Repetitive Avalanche Energy | E_{AR} | 25 | mJ |
| Avalanche Current | I_{AR} | 16 | A |
| Power Dissipation | $P_D(T_C=25^\circ\text{C})$ | 75 | W |
| Operating and Storage Temperature Range | T_J, T_{STG} | -55 to 150 | $^\circ\text{C}$ |

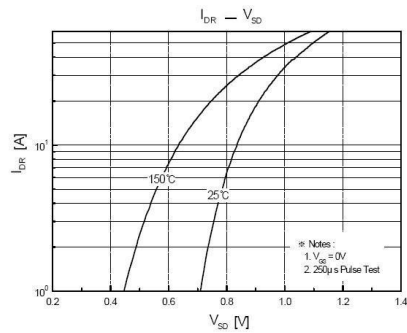
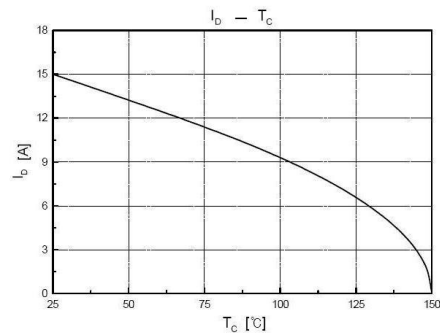
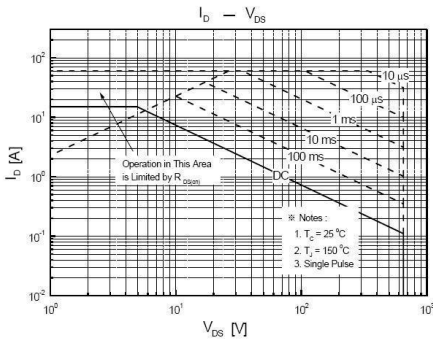
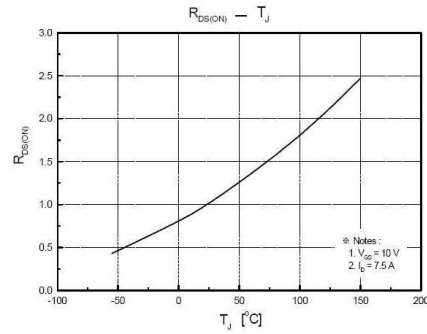
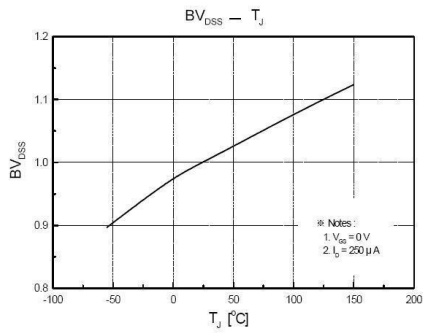
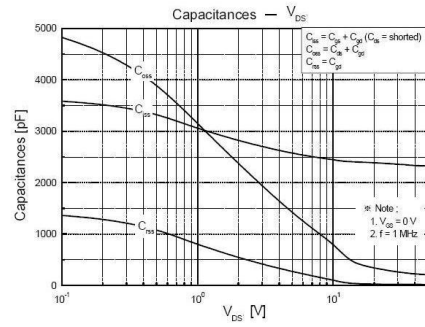
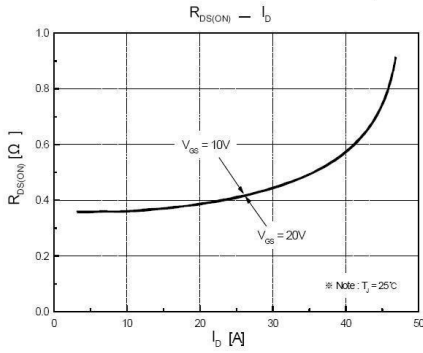
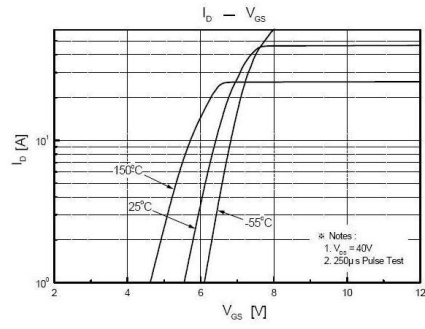
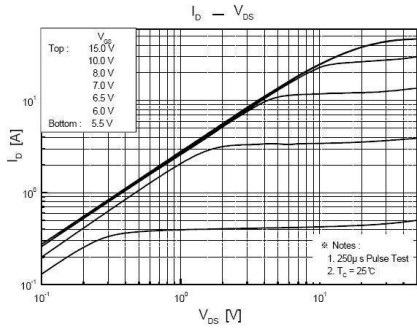
电性能参数 / Electrical Characteristics(Ta=25°C)

| 参数 Parameter | 符号 Symbol | 测试条件 Test Conditions | 最小值 Min | 典型值 Typ | 最大值 Max | 单位 Unit |
|--|--------------|--|------------|------------|------------|------------|
| Drain-Source Breakdown Voltage | BV_{DSS} | $V_{GS}=0V$ $I_D=250\mu A$ | 650 | | | V |
| Zero Gate Voltage Drain Current | I_{DSS} | $V_{DS}=650V$ $V_{GS}=0V$ | | | 1.0 | μA |
| | | $V_{DS}=520V$ $V_{GS}=0V$ $T_C=125^\circ\text{C}$ | | | 100 | μA |
| Gate-Body Leakage Current Forward | I_{GSS} | $V_{GS}=\pm 20V$ $V_{DS}=0V$ | | | ± 100 | nA |
| Gate Threshold Voltage | $V_{GS(th)}$ | $V_{DS}=V_{GS}$ $I_D=250\mu A$ | 3.0 | | 5.0 | V |
| Static Drain-Source On-Resistance ^{注1} | $R_{DS(on)}$ | $V_{GS}=10V$ $I_D=8.0A$ | | | 0.45 | Ω |
| Forward Transconductance | g_{FS} | $V_{DS}=15V$ $I_D=8.0A$ | 6.5 | | | S |
| Drain-Source Diode Forward Voltage | V_{SD} | $V_{GS}=0V$ $I_S=16A$ | | | 1.4 | V |
| Input Capacitance | C_{iss} | $V_{DS}=25V$ $V_{GS}=0V$ $f=1.0\text{MHz}$ | | 2380 | 3095 | pF |
| Output Capacitance | C_{oss} | | | 295 | 385 | pF |
| Reverse Transfer Capacitance | C_{rss} | | | 23.6 | 35.5 | pF |
| Turn-On Delay Time | $t_{d(on)}$ | | | | 65 | 140 |
| Turn-On Rise Time | t_r | $V_{DD}=325V$ $I_D=16A$ $R_G=21.7\Omega$ | | 125 | 260 | ns |
| Turn-Off Delay Time | $t_{d(off)}$ | | | 105 | 220 | ns |
| Turn-Off Fall Time | t_f | | | 65 | 140 | ns |

注释:

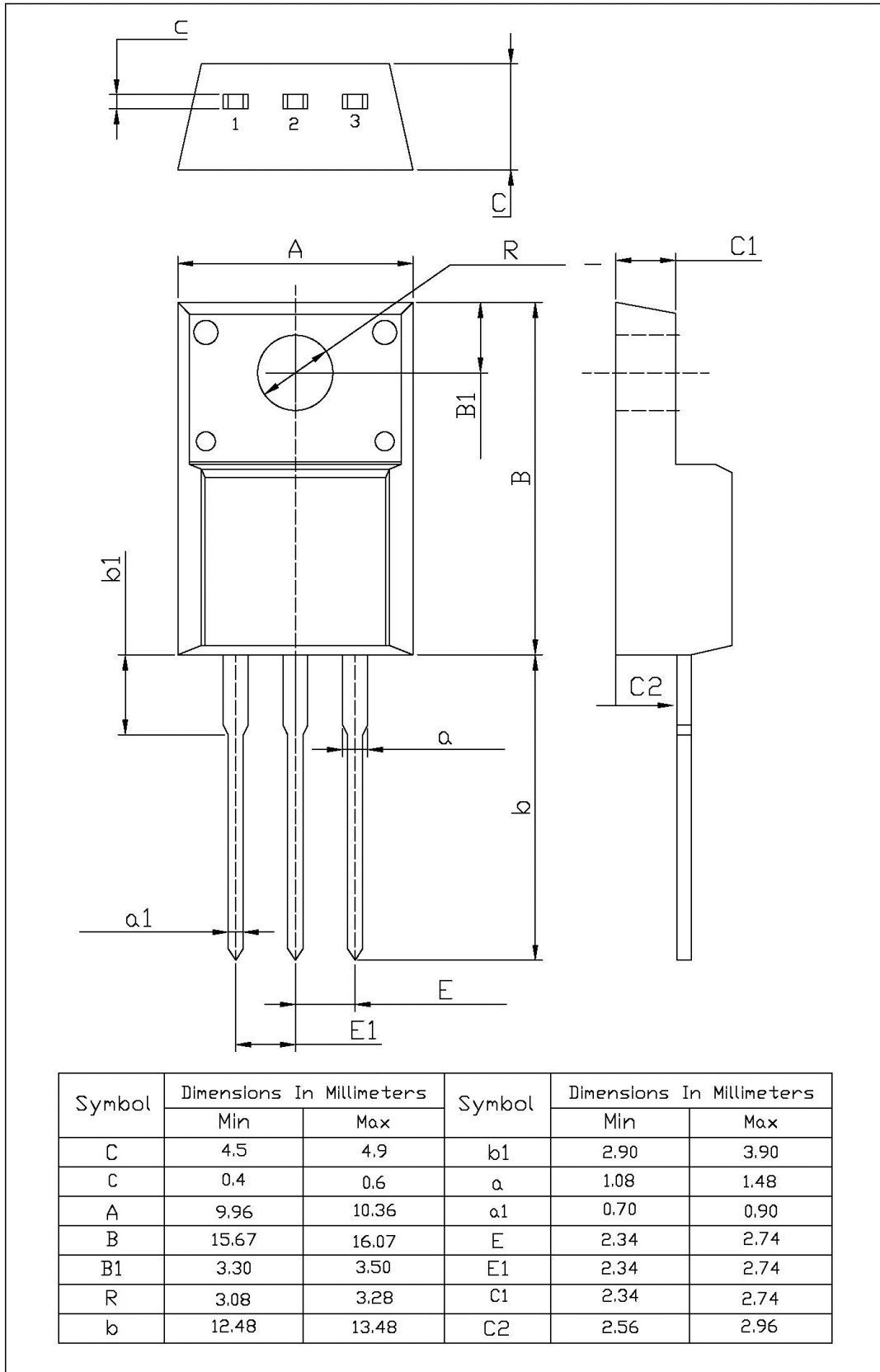
1. 导通电阻 ($R_{DS(ON)}$) 为封装后成品测试值, 典型值为 $0.36R @ V_{GS} = 10V, I_D = 8.0A$.

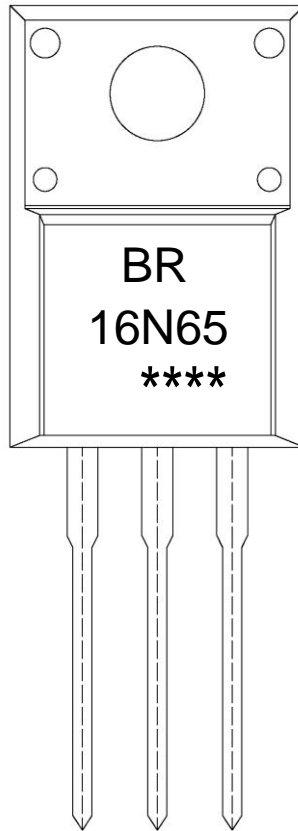
电参数曲线图 / Electrical Characteristic Curve



TO-220FL

单位: mm





说明：

BR： 为公司代码

16N65： 为型号代码

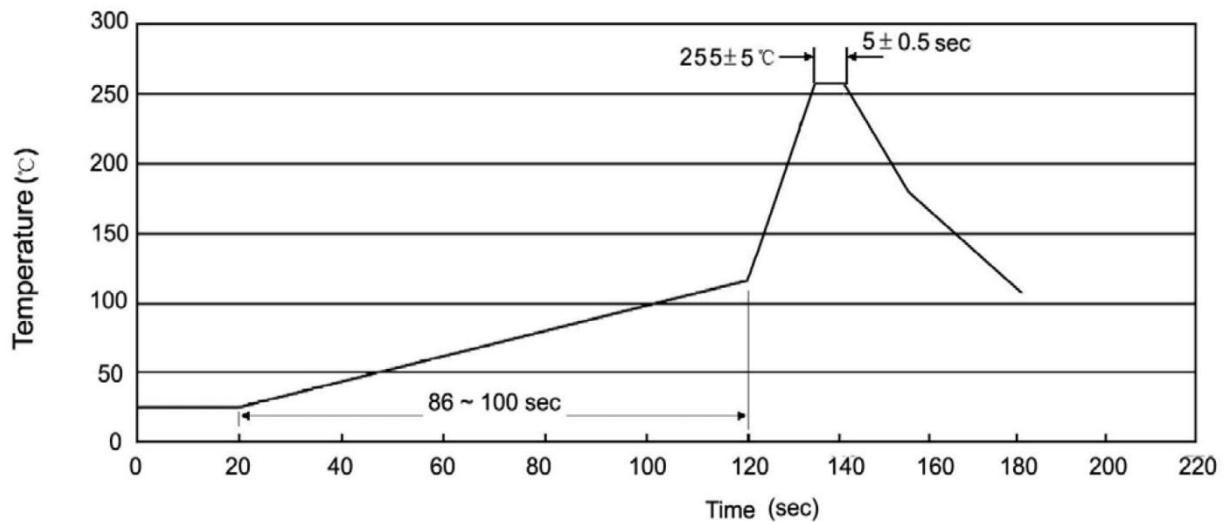
****： 为生产批号代码，随生产批号变化。

Note:

BR: Company Code

16N65: 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.

套管包装 / TUBE

| Package Type 封装形式 | Units 包装数量 | | | | | Dimension 包装尺寸 (unit: mm ³) | | |
|----------------------|--------------------|-------------------------|------------------------|------------------------------|------------------------|---|-------------|-------------|
| | Units/Tube 只/套管 | Tubes/Inner Box 套管/盒 | Units/Inner Box 只/盒 | Inner Boxes/Outer Box 盒/箱 | Units/Outer Box 只/箱 | Tube 套管 | Inner Box 盒 | Outer Box 箱 |
| TO-220FL | 50 | 20 | 1,000 | 5 | 5,000 | 532×33×7.0 | 555×164×50 | 575×290×180 |

使用说明 / Notices