

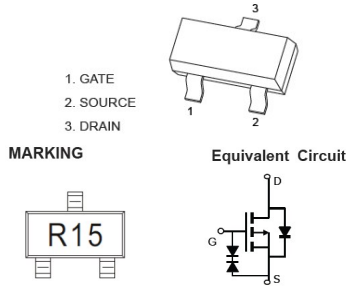


AO3415

P-CHANNEL ENHANCEMENT MOSFET

| V(BR)DSS | RDS(ON)MAX | ID |
|----------|------------|-----|
| -20V | 50mΩ@-4.5V | -4A |
| | 60mΩ@-2.5V | |
| | 73mΩ@-1.8V | |

SOT-23



特征 Features

- Excellent RDS(ON), low gate charge, low gate voltages
- Load Switch and in PWM applications.

机械数据 Mechanical Data

- 封装: SOT-23 封装 SOT-23 Small Outline Plastic Package.
- 环氧树脂 UL 易燃等级 Epoxy UL: 94V-0.
- 安装位置: 任意 Mounting Position: Any.

极限值和温度特性(TA = 25°C 除非另有规定)

Maximum Ratings & Thermal Characteristics (Ratings at 25°C ambient temperature unless otherwise specified.)

| 参数 Parameters | 符号 Symbol | 数值 Value | 单位 Unit |
|---|------------------|----------|---------|
| Drain-Source Voltage | V _{DS} | -20 | V |
| Gate-Source Voltage | V _{GS} | ±8 | V |
| Continuous Drain Current | I _D | -4.0 | A |
| Power Dissipation | P _D | 350 | mW |
| Junction Temperature | T _j | 150 | °C |
| Storage Temperature | T _{stg} | -50-+150 | °C |
| Thermal Resistance From Junction to Ambient | R _{θJA} | 357 | °C/W |

电特性 (TA = 25°C 除非另有规定)

Electrical Characteristics (Ratings at 25°C ambient temperature unless otherwise specified).

| 参数 Parameter | 符号 Symbols | 测试条件 Test Condition | 界限 Limits | | | 单位 Unit |
|--|---------------------|---|-----------|-------|------|------------|
| | | | Min | Typ | Max | |
| Static | | | | | | |
| Drain-Source Breakdown Voltage | V(BR)DSS | V _{GS} =0V, I _D =-250uA | -20 | | | V |
| Gate-Threshold voltage | V _{GS(th)} | V _{DS} =V _{GS} , I _D =-250uA | -0.3 | -0.56 | -1.0 | V |
| Gate-body Leakage | I _{GSS} | V _{DS} =0V, V _{GS} =±8V | | | ±10 | uA |
| | | V _{DS} =0V, V _{GS} =±4.5V | | | ±1 | |
| Zero Gate Voltage Drain current | I _{DSS} | V _{DS} =-16V, V _{GS} =0V | | | -1 | |
| Drain-Source On-Resistance ^(a) | R _{DS(ON)} | V _{GS} =-4.5V, I _D =-4A | | 37 | 50 | mΩ |
| | | V _{GS} =-2.5V, I _C =-4A | | 45 | 60 | |
| | | V _{GS} =-1.8V, I _C =-2A | | 56 | 73 | |
| Forward trans conductance ^(b) | g _{fs} | V _{DS} =-5V, I _D =-4A | 8 | | | S |
| Dynamic^(c) | | | | | | |
| Input capacitance | C _{iss} | V _{DS} =-10V, V _{GS} =0V, f=1MHz | | 1450 | | pF |
| Output capacitance | C _{oss} | | | 205 | | |
| Reverse Transfer capacitance | C _{rss} | | | 160 | | |
| Total gate charge | Q _g | V _{DS} =-10V, V _{GS} =-4.5V, I _D =-4A | | 17.2 | | nC |
| Gate-source charge | Q _{gs} | | | 1.3 | | |
| Gate-drain charge | Q _{gd} | | | 4.5 | | |
| Gate resistance | R _g | V _{DS} =0V, V _{GS} =0V, f=1MHz | | 6.5 | | Ω |
| Turn-on Time | td(on) | V _{DD} =-10V, R _L =2.5Ω, V _{GEN} =-4.5V, R _{GEN} =3Ω | | 9.5 | | ns |
| Rise time | tr | | | 17 | | |
| Turn-off Time | td(off) | | | 94 | | |
| Fall time | tf | | | 35 | | |
| Drain-source body diode characteristics | | | | | | |
| Body diode voltage ^(b) | V _{SD} | I _S =-1A, V _{GS} =0V | | | -1.0 | V |

Notes: a. Repetitive rating, pulse width limited by junction temperature.

b. Pulse Test: Pulse Width ≤300us, Duty Cycle≤2%.

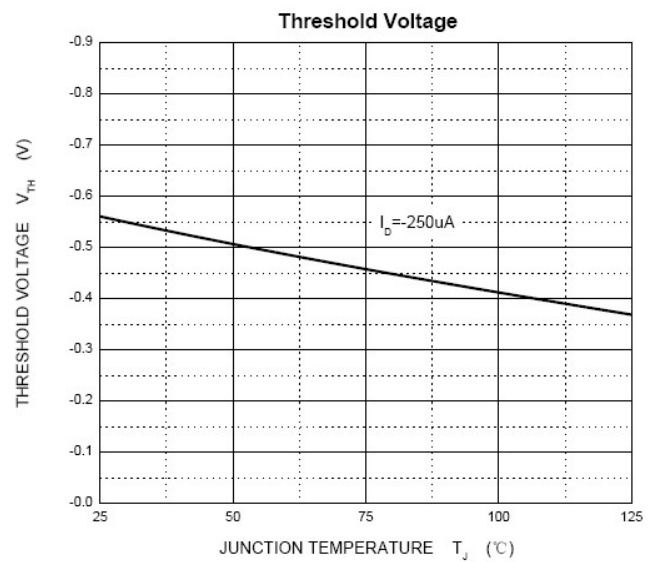
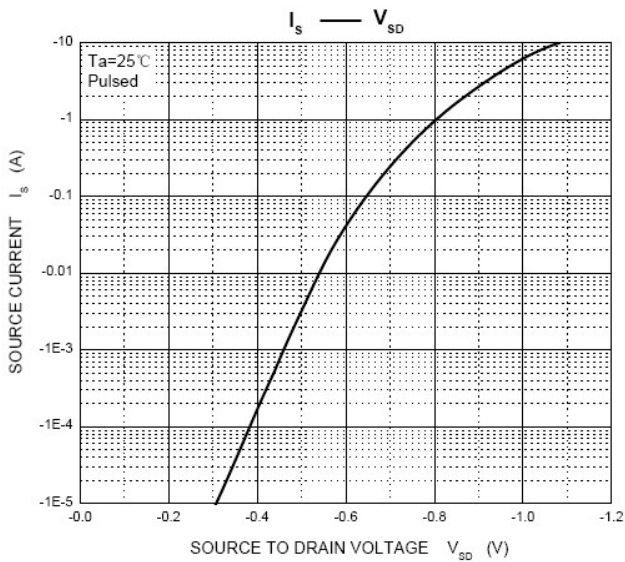
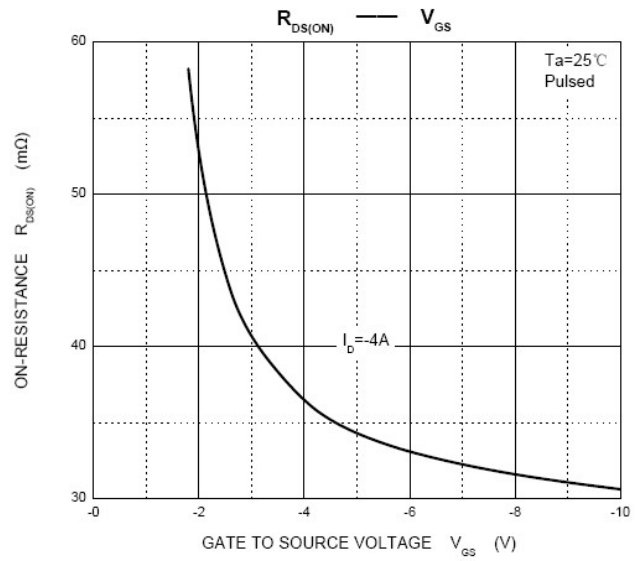
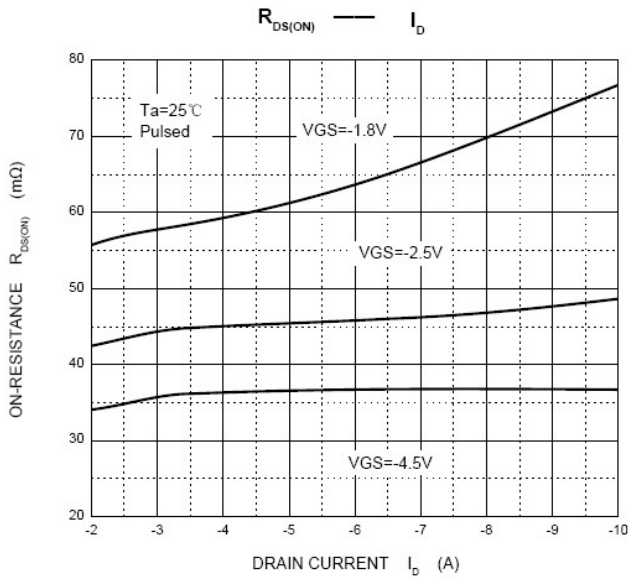
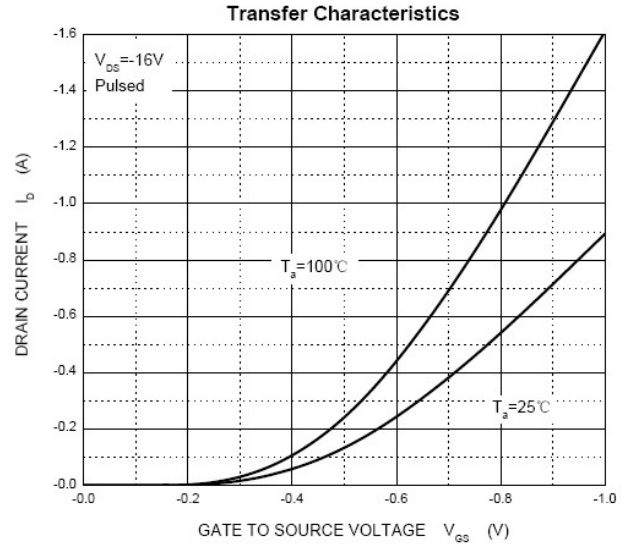
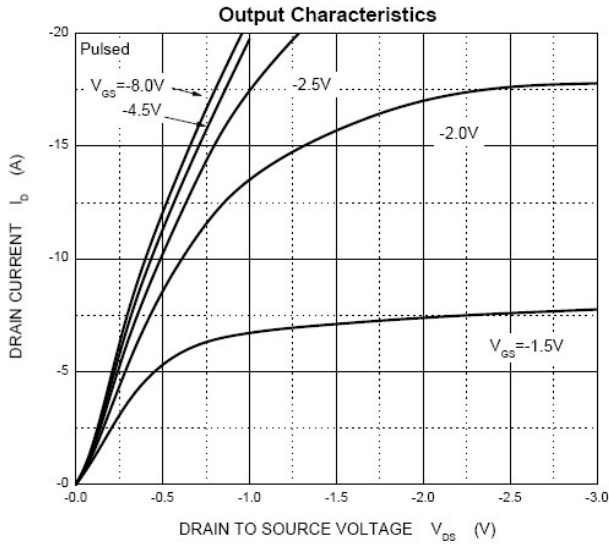
b. These parameters have no way to verify.





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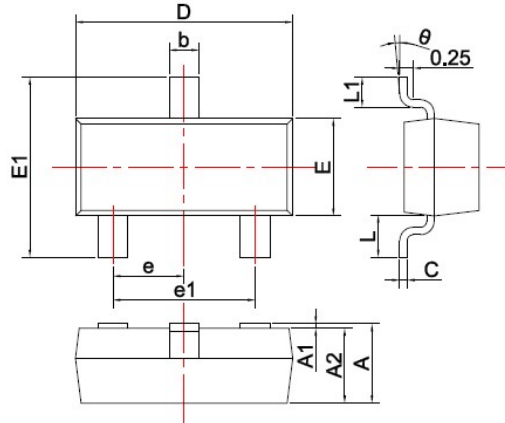
Typical characteristics





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SOT-23 PACKAGE OUTLINE Plastic surface mounted package

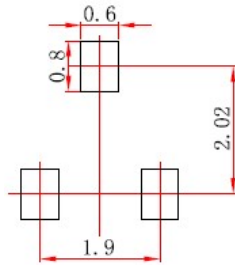


| SYMBOL | DIMENSIONS | |
|--------|------------|-------|
| | MIN. | MAX. |
| A | 0.900 | 1.150 |
| A1 | 0.000 | 0.100 |
| A2 | 0.900 | 1.050 |
| b | 0.300 | 0.500 |
| c | 0.080 | 0.150 |
| D | 2.800 | 3.000 |
| E | 1.200 | 1.400 |
| E1 | 2.250 | 2.550 |
| e | 0.950TYP | |
| e1 | 1.800 | 2.000 |
| L | 0.550REF | |
| L1 | 0.300 | 0.500 |
| θ | 0° | 8° |

Unit: mm

焊盘设计参考 Precautions: PCB Design

Recommended land dimensions for SOT-23 diode. Electrode patterns for PCBs



Note:

1. Controlling dimension; In millimeters.
2. General tolerance: ± 0.05mm.
3. The pad layout is for reference purposes only.