

Product Summary

| $V_{(BR)DSS}$ | $R_{DS(on)MAX}$ | I_D |
|---------------|-----------------|-------|
| -30V | 60mΩ@-10V | -4.1A |
| | 85mΩ@-4.5V | |

Feature

- Advanced trench process technology
- High density cell design for ultra low on-resistance

Application

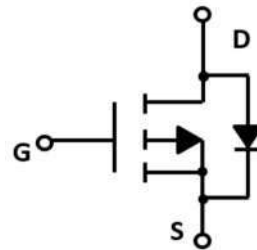
- Load Switch for Portable Devices
- DC/DC Converter

Package

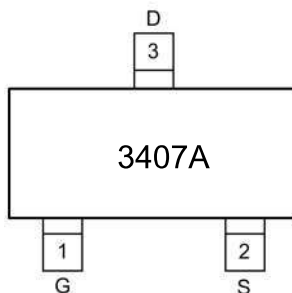


SOT-23

Circuit diagram



Marking



Absolute maximum ratings (Ta=25°C unless otherwise noted)

| Parameter | Symbol | Value | Unit |
|--------------------------|-----------|------------|------|
| Drain-Source Voltage | V_{DS} | -30 | V |
| Gate-Source Voltage | V_{GS} | ± 20 | V |
| Continuous Drain Current | I_D | -4.1 | A |
| Pulsed Drain Current | I_{DM} | -15 | A |
| Power Dissipation | P_D | 1.3 | W |
| Junction Temperature | T_J | -55 ~ +150 | °C |
| Storage Temperature | T_{STG} | -55 ~ +150 | °C |

Electrical characteristics (Ta=25 °C, unless otherwise noted)

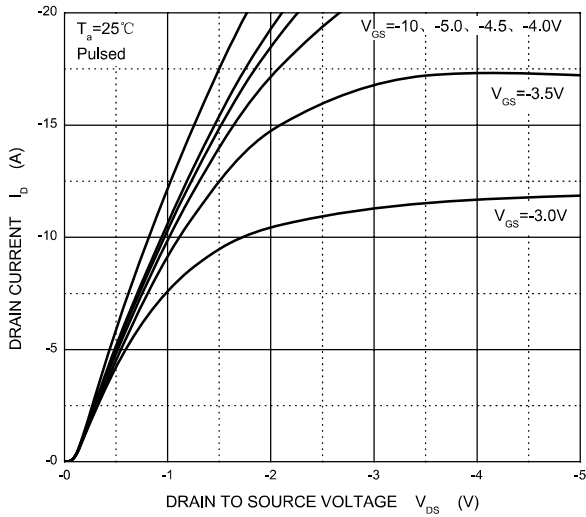
| Parameter | Symbol | Test Condition | Min. | Typ. | Max. | Unit |
|---|---------------|--|------|------|-----------|------------|
| Static Characteristics | | | | | | |
| Drain-source breakdown voltage | $V_{(BR)DSS}$ | $V_{GS} = 0V, I_D = -250\mu A$ | -30 | | | V |
| Zero gate voltage drain current | I_{DSS} | $V_{DS} = -30V, V_{GS} = 0V$ | | | -1 | μA |
| Gate-body leakage current | I_{GSS} | $V_{GS} = \pm 20V, V_{DS} = 0V$ | | | ± 100 | nA |
| Gate threshold voltage | $V_{GS(th)}$ | $V_{DS} = V_{GS}, I_D = -250\mu A$ | -1 | -1.4 | -3.0 | V |
| Drain-source on-resistance ¹⁾ | $R_{DS(on)}$ | $V_{GS} = -10V, I_D = -4.1A$ | | 48 | 60 | m Ω |
| | | $V_{GS} = -4.5V, I_D = -3.0A$ | | 65 | 85 | |
| Dynamic characteristics²⁾ | | | | | | |
| Input Capacitance | C_{iss} | $V_{DS} = -15V, V_{GS} = 0V, f = 1MHz$ | | 580 | | pF |
| Output Capacitance | C_{oss} | | | 98 | | |
| Reverse Transfer Capacitance | C_{rss} | | | 74 | | |
| Total Gate Charge | Q_g | $V_{DS} = -15V, V_{GS} = -10V, I_D = -4.1A$ | | 6.8 | | nC |
| Gate-Source Charge | Q_{gs} | | | 1.0 | | |
| Gate-Drain Charge | Q_{gd} | | | 1.4 | | |
| Turn-on delay time | $t_{d(on)}$ | $V_{DD} = -15V, V_{GS} = -10V, I_D = -1A, R_{GEN} = 2.5\Omega, R_L = 15\Omega$ | | 14 | | nS |
| Turn-on rise time | t_r | | | 61 | | |
| Turn-off delay time | $t_{d(off)}$ | | | 19 | | |
| Turn-off fall time | t_f | | | 10 | | |
| Source-Drain Diode characteristics | | | | | | |
| Diode Forward Current ¹⁾ | I_S | | | | -4.1 | A |
| Diode Forward voltage | V_{DS} | $V_{GS} = 0V, I_S = -4.1A$ | | | -1.2 | V |

Notes:

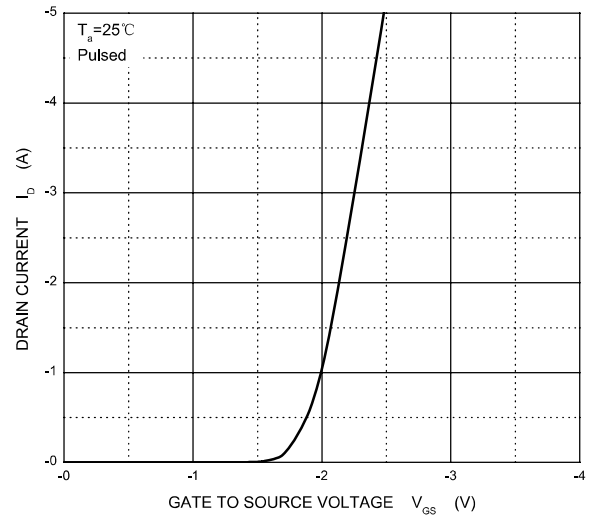
- 1) Pulse Test: Pulse Width < 300 μs , Duty Cycle $\leq 2\%$.
- 2) Guaranteed by design, not subject to production testing.

Typical Characteristics

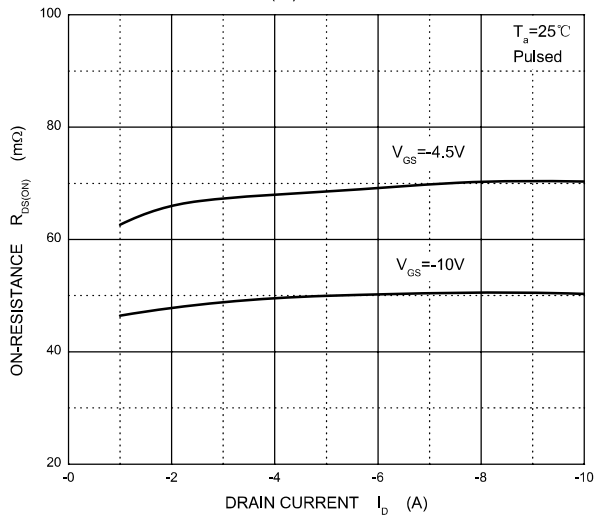
Output Characteristics



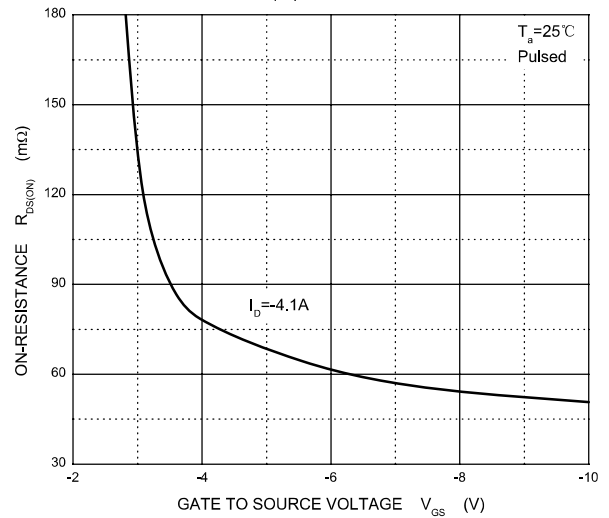
Transfer Characteristics



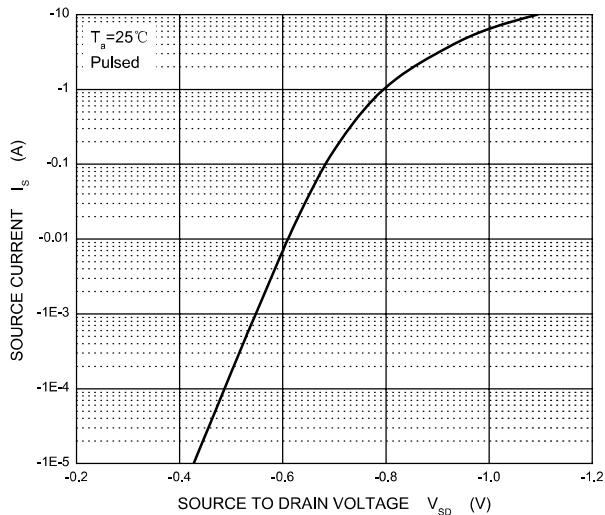
$R_{DS(ON)}$ — I_D



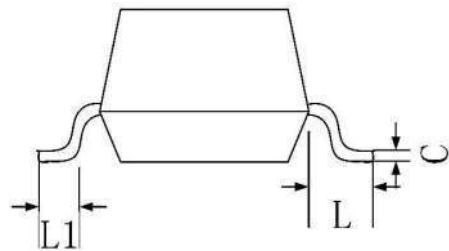
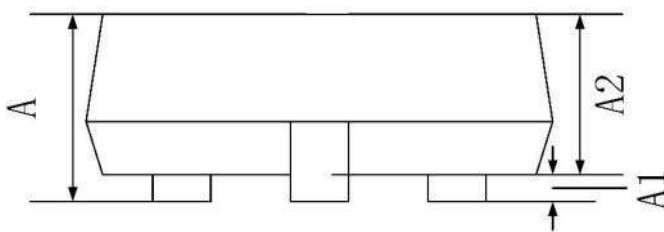
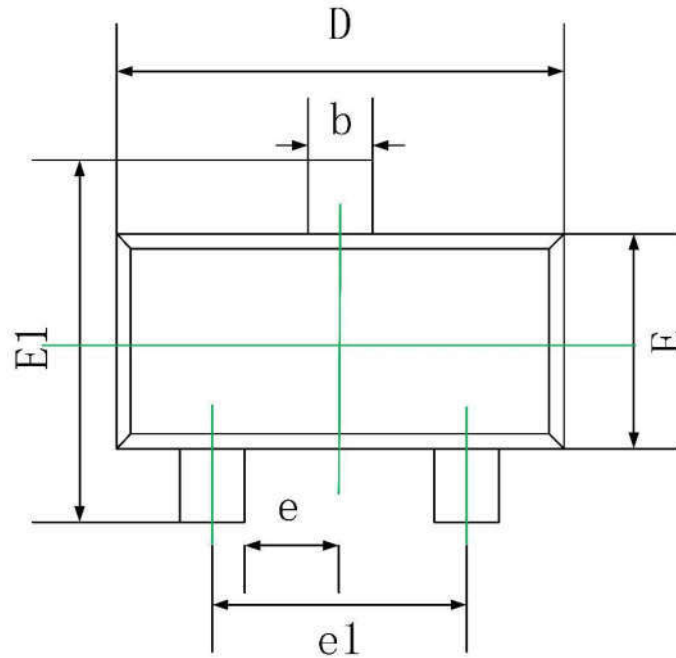
$R_{DS(ON)}$ — V_{GS}



I_S — V_{SD}



SOT-23 Package Information



| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|--------|---------------------------|-------|----------------------|-------|
| | Min. | Max. | Min. | Max. |
| A | 0.900 | 1.150 | 0.035 | 0.045 |
| A1 | 0.000 | 0.100 | 0.000 | 0.004 |
| A2 | 0.900 | 1.050 | 0.035 | 0.041 |
| b | 0.300 | 0.500 | 0.012 | 0.020 |
| c | 0.080 | 0.150 | 0.003 | 0.006 |
| D | 2.800 | 3.000 | 0.110 | 0.118 |
| E | 1.200 | 1.400 | 0.047 | 0.055 |
| E1 | 2.250 | 2.550 | 0.089 | 0.100 |
| e | 0.950 TYP. | | 0.037 TYP. | |
| e1 | 1.800 | 2.000 | 0.071 | 0.079 |
| L | 0.550 REF. | | 0.022 REF. | |
| L1 | 0.300 | 0.500 | 0.012 | 0.020 |