



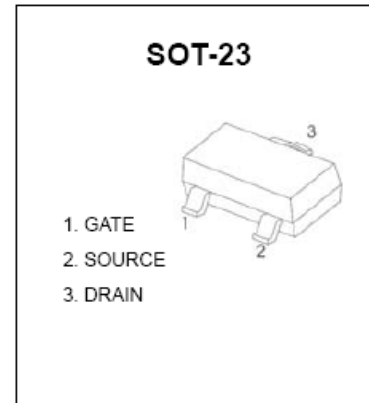
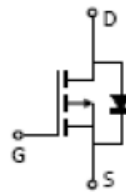
P-Channel 8-V(D-S) MOSFET

FEATURE

TrenchFET Power MOSFET

APPLICATIONS

- Load Switch for Portable Devices
- DC/DC Converter



MARKING: S5

Maximum ratings ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

| Parameter | Symbol | Value | Unit |
|---|-----------------|-----------|-----------------------------|
| Drain-Source Voltage | V_{DS} | -8 | V |
| Gate-Source Voltage | V_{GS} | ± 8 | |
| Continuous Drain Current | I_D | -4.1 | A |
| Continuous Source-Drain Diode Current | I_S | -0.8 | |
| Maximum Power Dissipation | P_D | 0.35 | W |
| Thermal Resistance from Junction to Ambient($t \leq 10s$) | $R_{\theta JA}$ | 357 | $^{\circ}\text{C}/\text{W}$ |
| Junction Temperature | T_J | 150 | $^{\circ}\text{C}$ |
| Storage Temperature | T_{STG} | -50 ~+150 | |



Electrical characteristics (T_a=25°C unless otherwise noted)

| Parameter | Symbol | Test Condition | Min | Typ | Max | Units |
|--|----------------------|---|------|------|-------|-------|
| Static | | | | | | |
| Drain-source breakdown voltage | V _{(BR)DSS} | V _{GS} = 0V, I _D = -250μA | -8 | | | V |
| Gate-source threshold voltage | V _{GS(th)} | V _{DS} = V _{GS} , I _D = -250μA | -0.5 | | -0.9 | |
| Gate-source leakage | I _{GSS} | V _{DS} = 0V, V _{GS} = ±8V | | | ±100 | nA |
| Zero gate voltage drain current | I _{DSS} | V _{DS} = -8V, V _{GS} = 0V | | | -1 | μA |
| Drain-source on-state resistance ^a | R _{DS(on)} | V _{GS} = -4.5V, I _D = -3.5A | | | 0.045 | Ω |
| | | V _{GS} = -2.5V, I _D = -3A | | | 0.060 | |
| | | V _{GS} = -1.8V, I _D = -2.0A | | | 0.090 | |
| Forward transconductance ^a | g _{fs} | V _{DS} = -5V, I _D = -4.1A | 6 | | | S |
| Dynamic | | | | | | |
| Input capacitance ^{b,c} | C _{iss} | V _{DS} = -4V, V _{GS} = 0V, f = 1MHz | | 740 | | pF |
| Output capacitance ^{b,c} | C _{oss} | | | 290 | | |
| Reverse transfer capacitance ^{b,c} | C _{rss} | | | 190 | | |
| Total gate charge ^b | Q _g | V _{DS} = -4V, V _{GS} = -4.5V, I _D = -4.1A | | 7.8 | 15 | nC |
| | | V _{DS} = -4V, V _{GS} = -2.5V, I _D = -4.1A | | 4.5 | 9 | |
| Gate-source charge ^b | Q _{gs} | V _{DS} = -4V, V _{GS} = -2.5V, I _D = -4.1A | | 1.2 | | |
| Gate-drain charge ^b | Q _{gd} | | | 1.6 | | |
| Gate resistance ^{b,c} | R _g | f = 1MHz | 1.4 | 7 | 14 | Ω |
| Turn-on delay time ^{b,c} | t _{d(on)} | V _{DD} = -4V, R _L = 1.2Ω, I _D ≈ -3.3A, V _{GEN} = -4.5V, R _g = 1Ω | | 13 | 20 | ns |
| Rise time ^{b,c} | t _r | | | 35 | 53 | |
| Turn-off Delay time ^{b,c} | t _{d(off)} | | | 32 | 48 | |
| Fall time ^{b,c} | t _f | | | 10 | 20 | |
| Turn-on delay time ^{b,c} | t _{d(on)} | V _{DD} = -4V, R _L = 1.2Ω, I _D ≈ -3.3A, V _{GEN} = -8V, R _g = 1Ω | | 5 | 10 | |
| Rise time ^{b,c} | t _r | | | 11 | 17 | |
| Turn-off delay time ^{b,c} | t _{d(off)} | | | 22 | 33 | |
| Fall time ^{b,c} | t _f | | | 16 | 24 | |
| Drain-source body diode characteristics | | | | | | |
| Continuous source-drain diode current | I _S | T _C = 25°C | | | -1.4 | A |
| Pulse diode forward current ^a | I _{SM} | | | | -10 | |
| Body diode voltage | V _{SD} | I _F = -3.3A | | -0.8 | -1.2 | V |

Note :

- a. Pulse Test ; Pulse Width ≤300μs, Duty Cycle ≤2%.
- b. Guaranteed by design, not subject to production testing.
- c. These parameters have no way to verify.



Typical Characteristics

