

SOT-23 Plastic-Encapsulate MOSFETS

CJ2301S P-Channel 20-V(D-S) MOSFET

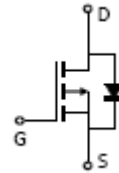
FEATURE

TrenchFET Power MOSFET

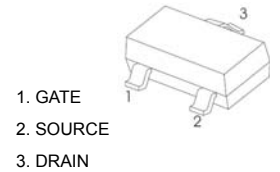
APPLICATIONS

- Load Switch for Portable Devices
- DC/DC Converter

MARKING: S1U



SOT-23



Maximum ratings (T_a=25°C unless otherwise noted)

| Parameter | Symbol | Value | Unit |
|---|------------------|-----------|------|
| Drain-Source Voltage | V _{DS} | -20 | V |
| Gate-Source Voltage | V _{GS} | ±8 | |
| Continuous Drain Current (T _J =150°C) | I _D | -2.3 | A |
| Pulsed Drain Current | I _{DM} | -10 | |
| Continuous Source-Drain Diode Current | I _S | -0.72 | |
| Maximum Power Dissipation | P _D | 0.35 | W |
| Thermal Resistance from Junction to Ambient(t≤5s) | R _{θJA} | 357 | °C/W |
| Junction Temperature | T _J | 150 | °C |
| Storage Temperature | T _{stg} | -55 ~+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 | -20 | | | V |
| Gate-source threshold voltage | V _{GS(th)} | V _{DS} = V _{GS} , I _D = -250μA | -0.4 | | -1 | |
| Gate-source leakage | I _{GSS} | V _{DS} = 0V, V _{GS} = ±8V | | | ±100 | nA |
| Zero gate voltage drain current | I _{DSS} | V _{DS} = -20V, V _{GS} = 0V | | | -1 | μA |
| Drain-source on-state resistance ^a | R _{DS(on)} | V _{GS} = -4.5V, I _D = -2.8A | | 0.090 | 0.112 | Ω |
| | | V _{GS} = -2.5V, I _D = -2.0A | | 0.110 | 0.142 | |
| Forward transconductance ^a | g _{fs} | V _{DS} = -5V, I _D = -2.8A | | 4.0 | | S |
| Dynamic^b | | | | | | |
| Input capacitance | C _{iss} | V _{DS} = -10V, V _{GS} = 0V, f = 1MHz | | 405 | | pF |
| Output capacitance | C _{oss} | | | 75 | | |
| Reverse transfer capacitance | C _{rss} | | | 55 | | |
| Total gate charge | Q _g | V _{DS} = -10V, V _{GS} = -4.5V, I _D = -3A | | 5.5 | 10 | nC |
| | | | | 3.3 | 6 | |
| Gate-source charge | Q _{gs} | V _{DS} = -10V, V _{GS} = -2.5V, I _D = -3A | | 0.7 | | |
| Gate-drain charge | Q _{gd} | | | 1.3 | | |
| Gate resistance | R _g | f = 1MHz | | 6.0 | | Ω |
| Turn-on delay time | t _{d(on)} | V _{DD} = -10V, R _L = 10Ω, I _D = -1A, V _{GEN} = -4.5V, R _g = 1Ω | | 11 | 20 | ns |
| Rise time | t _r | | | 35 | 60 | |
| Turn-off delay time | t _{d(off)} | | | 30 | 50 | |
| Fall time | t _f | | | 10 | 20 | |
| Drain-source body diode characteristics | | | | | | |
| Continuous source-drain diode current | I _S | T _C = 25°C | | | -1.3 | A |
| Pulse diode forward current ^a | I _{SM} | | | | -10 | |
| Body diode voltage | V _{SD} | I _S = -0.7A | | -0.8 | -1.2 | V |

Notes :

a. Pulse Test : Pulse Width < 300μs, Duty Cycle ≤2%.

b. Guaranteed by design, not subject to production testing.

