

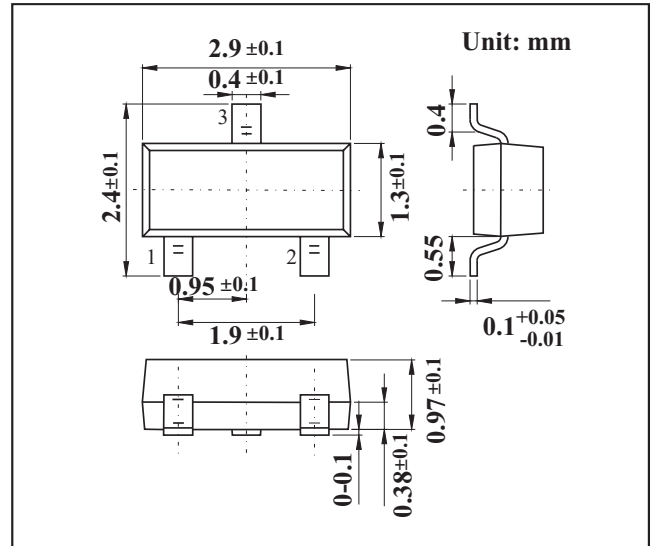
SOT-23 Plastic-Encapsulate MOSFETS

FEATURE

- TrenchFET Power MOSFET
- N-Channel Enhancement Mode Field Effect Transistor

MECHANICAL DATA

- Case style: SOT-23 molded plastic
- Mounting position: any



MAXIMUM RATINGS AND CHARACTERISTICS

@ 25°C Ambient Temperature (unless otherwise noted)

| Parameter | Symbol | Value | Unit |
|---|-----------------|------------|------|
| Drain-Source Voltage | V_{DS} | 20 | V |
| Gate-Source Voltage | V_{GS} | ±12 | |
| Continuous Drain Current | I_D | 6 | A |
| Pulsed Drain Current | I_{DM} | 25 | |
| Maximum Body-Diode Continuous Current | I_S | 2 | |
| Power Dissipation | P_D | 0.35 | W |
| Thermal Resistance from Junction to Ambient | $R_{\theta JA}$ | 357 | °C/W |
| Junction Temperature | T_J | 150 | °C |
| Storage Temperature | T_{stg} | -55 ~ +150 | |

| $V_{(BR)DSS}$ | $R_{DS(on)MAX}$ | I_D |
|---------------|-----------------|-------|
| 20V | 24mΩ@ 10V | 6A |
| | 27mΩ@4.5V | |
| | 42mΩ@2.5V | |
| | 74mΩ@1.8V | |

MOSFET ELECTRICAL CHARACTERISTICS $T_A = 25\text{ }^\circ\text{C}$ unless otherwise specified

| Parameter | Symbol | Test Condition | Min | Typ | Max | Unit |
|----------------------------------|---------------|--|-----|------|-----------|------------|
| STATIC PARAMETERS | | | | | | |
| Drain-source breakdown voltage | $V_{(BR)DSS}$ | $V_{GS} = 0V, I_D = 250\mu A$ | 20 | | | V |
| Gate-source leakage current | I_{GSS} | $V_{DS} = 0V, V_{GS} = \pm 12V$ | | | ± 100 | nA |
| Zero gate voltage drain current | I_{DSS} | $V_{DS} = 16V, V_{GS} = 0V$ | | | 1.0 | μA |
| Gate threshold voltage | $V_{GS(th)}$ | $V_{DS} = V_{GS}, I_D = 250\mu A$ | 0.5 | 0.7 | 1.0 | V |
| Drain-source on-state resistance | $R_{DS(on)}$ | $V_{GS} = 10V, I_D = 6.0A$ | | 19 | 24 | m Ω |
| | | $V_{GS} = 4.5V, I_D = 5.0A$ | | 22 | 27 | |
| | | $V_{GS} = 2.5V, I_D = 4.0A$ | | 35 | 42 | |
| | | $V_{GS} = 1.8V, I_D = 2.0A$ | | | 74 | |
| Diode forward voltage | V_{SD} | $V_{GS} = 0V, I_S = 1A$ | | 0.75 | 1 | V |
| Forward transconductance | g_{fs} | $V_{DS} = 5V, I_D = 3.8A$ | 4 | | | S |
| DYNAMIC PARAMETERS* | | | | | | |
| Input capacitance | C_{iss} | $V_{DS} = 10V, V_{GS} = 0V, f = 1MHz$ | | 630 | | pF |
| Output capacitance | C_{oss} | | | 164 | | |
| Reverse transfer capacitance | C_{rss} | | | 137 | | |
| Gate resistance | R_g | $V_{DS} = 0V, V_{GS} = 0V, f = 1MHz$ | | 1.5 | | Ω |
| SWITCHING PARAMETERS* | | | | | | |
| Turn-on delay time | $t_{d(on)}$ | $V_{GS} = 5V, V_{DS} = 10V,$ $R_L = 1.7\Omega, R_{GEN} = 6\Omega$ | | 5.5 | | ns |
| Rise time | t_r | | | 14 | | |
| Turn-off delay time | $t_{d(off)}$ | | | 29 | | |
| Fall time | t_f | | | 10.2 | | |

*These parameters have no way to verify.

RATINGS AND CHARACTERISTIC CURVES

