

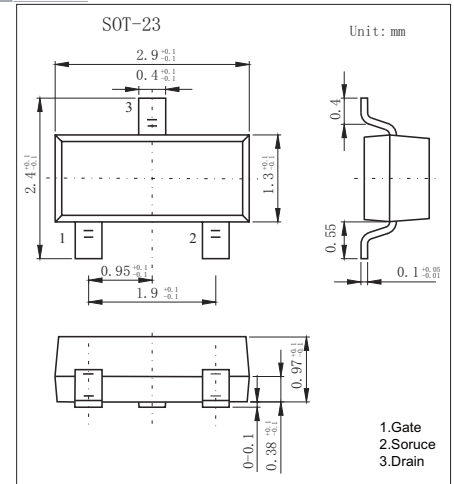
SOT-23 Plastic-Encapsulate MOSFETS

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                        | $V_{DS}$        | 30       | V    |
| Gate-Source Voltage                         | $V_{GS}$        | $\pm 20$ | V    |
| Continuous Drain Current                    | $I_D$           | 3.6      | A    |
| Drain Current-Pulsed (note 1)               | $I_{DM}$        | 15       | A    |
| 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 | °C   |

| $V_{(BR)DSS}$ | $R_{DS(on)MAX}$ | $I_D$ |
|---------------|-----------------|-------|
| 30V           | 65 mΩ@10V       | 3.6A  |
|               | 105 mΩ@4.5V     |       |

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

| Parameter                            | Symbol        | Test Condition   | Min | Typ  | Max       | Units   |
|--------------------------------------|---------------|--|-----|------|-----------|---------|
| <b>STATIC PARAMETERS</b>             |               |  |     |      |           |         |
| Drain-source breakdown voltage       | $V_{(BR)DSS}$ | $V_{GS} = 0V, I_D = 250\mu A$                                    | 30  |      |           | V       |
| Zero gate voltage drain current      | $I_{DSS}$     | $V_{DS} = 24V, V_{GS} = 0V$                                      |     |      | 1         | $\mu A$ |
| Gate-body leakage current            | $I_{GSS}$     | $V_{GS} = \pm 20V, V_{DS} = 0V$                                  |     |      | $\pm 100$ | nA      |
| Gate threshold voltage               | $V_{GS(th)}$  | $V_{DS} = V_{GS}, I_D = 250\mu A$                                | 1   |      | 3         | V       |
| Drain-source on-resistance (note 2)  | $R_{DS(on)}$  | $V_{GS} = 10V, I_D = 3.6A$                                       |     |      | 65        | mΩ      |
|                                      |               | $V_{GS} = 4.5V, I_D = 2.8A$                                      |     |      | 105       | mΩ      |
| Forward transconductance (note 2)    | $g_{FS}$      | $V_{DS} = 5V, I_D = 3.6A$  | 3   |      |           | S       |
| Diode forward voltage                | $V_{SD}$      | $I_S = 1A$   |     |      | 1         | V       |
| <b>DYNAMIC PARAMETERS (note 3)</b>   |               |  |     |      |           |         |
| Input capacitance                    | $C_{iss}$     | $V_{DS} = 15V, V_{GS} = 0V, f = 1MHz$                            |     |      | 375       | pF      |
| Output capacitance                   | $C_{oss}$     |  |     |      | 57        | pF      |
| Reverse transfer capacitance         | $C_{rss}$     |  |     |      | 39        | pF      |
| Gate resistance                      | $R_g$         | $V_{DS} = 0V, V_{GS} = 0V, f = 1MHz$                             |     |      | 6         | Ω       |
| <b>SWITCHING PARAMETERS (note 3)</b> |               |  |     |      |           |         |
| Turn-on delay time                   | $t_{d(on)}$   | $V_{GS} = 10V, V_{DS} = 15V, R_L = 2.2\Omega, R_{GEN} = 3\Omega$ |     | 4.6  |           | ns      |
| Turn-on rise time                    | $t_r$         |  |     | 1.9  |           | ns      |
| Turn-off delay time                  | $t_{d(off)}$  |  |     | 20.1 |           | ns      |
| Turn-off fall time                   | $t_f$         |  |     | 2.6  |           | ns      |

Notes :

1. Repetitive Rating : Pulse width limited by maximum junction temperature.
2. Pulse Test : Pulse width  $\leq 300\mu s$ , duty cycle  $\leq 0.5\%$ .
3. These parameters have no way to verify.

MARKING: R6

# RATINGS AND CHARACTERISTIC CURVES

