

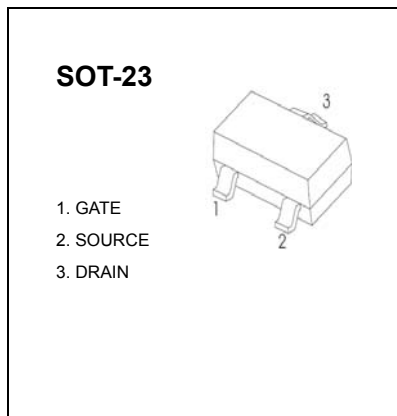
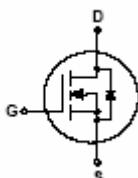


DONGGUAN NANJING ELECTRONICS LTD.,
SOT-23 Plastic-Encapsulate MOSFETS

2N7002 MOSFET (N-Channel)

FEATURES

- High density cell design for low $R_{DS(ON)}$
- Voltage controlled small signal switch
- Rugged and reliable
- High saturation current capability



Marking: 7002

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

| Parameter | Symbol | Value | Unit |
|---|-----------------|------------|--------------------|
| Drain-Source Voltage | V_{DS} | 60 | V |
| Continuous Drain Current | I_D | 0.115 | A |
| Power Dissipation | P_D | 0.225 | W |
| Thermal Resistance from Junction to Ambient | $R_{\theta JA}$ | 556 | $^\circ\text{C/W}$ |
| Junction Temperature | T_J | 150 | $^\circ\text{C}$ |
| Storage Temperature | T_{stg} | -50 ~ +150 | |

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

| Parameter | Symbol | Test conditions | Min | Typ | Max | Unit |
|--|---------------|--|------|-----|----------|----------|
| Drain-Source Breakdown Voltage | $V_{(BR)DSS}$ | $V_{GS}=0\text{ V}, I_D=250\ \mu\text{A}$ | 60 | | | V |
| Gate-Threshold Voltage | $V_{th(GS)}$ | $V_{DS}=V_{GS}, I_D=250\ \mu\text{A}$ | 1 | | | |
| Gate-body Leakage | I_{GSS} | $V_{DS}=0\text{ V}, V_{GS}=\pm 25\text{ V}$ | | | ± 80 | nA |
| Zero Gate Voltage Drain Current | I_{DSS} | $V_{DS}=60\text{ V}, V_{GS}=0\text{ V}$ | | | 80 | nA |
| On-state Drain Current | $I_{D(ON)}$ | $V_{GS}=10\text{ V}, V_{DS}=7\text{ V}$ | 500 | | | mA |
| Drain-Source On-Resistance | $R_{DS(on)}$ | $V_{GS}=10\text{ V}, I_D=500\text{mA}$ | | | 7 | Ω |
| | | $V_{GS}=5\text{ V}, I_D=50\text{mA}$ | | | 7 | |
| Forward Trans conductance | g_{fs} | $V_{DS}=10\text{ V}, I_D=200\text{mA}$ | 80 | | | ms |
| Drain-source on-voltage | $V_{DS(on)}$ | $V_{GS}=10\text{V}, I_D=500\text{mA}$ | 0.5 | | 3.75 | V |
| | | $V_{GS}=5\text{V}, I_D=50\text{mA}$ | 0.05 | | 0.375 | V |
| Diode Forward Voltage | V_{SD} | $I_S=115\text{mA}, V_{GS}=0\text{ V}$ | 0.55 | | 1.2 | V |
| Input Capacitance * | C_{iss} | $V_{DS}=25\text{V}, V_{GS}=0\text{V}, f=1\text{MHz}$ | | | 50 | pF |
| Output Capacitance * | C_{oss} | | | | 25 | |
| Reverse Transfer Capacitance * | C_{rss} | | | | 5 | |

SWITCHING TIME

| | | | | | | |
|------------------------|--------------|--|--|--|----|----|
| Turn-on Time * | $t_{d(on)}$ | $V_{DD}=25\text{ V}, R_L=50\Omega,$ $I_D=500\text{mA}, V_{GEN}=10\text{ V}$ $R_G=25\Omega$ | | | 20 | ns |
| Turn-off Time * | $t_{d(off)}$ | | | | 40 | |

*These parameters have no way to verify.

Typical Characteristics

2N7002

