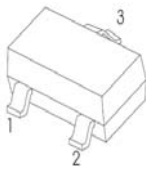
JIANGSU CHANGJIANG ELECTRONICS TECHNOLOGY CO., LTD

# SOT-23 Plastic-Encapsulate MOSFETS

## CJ2321 P-Channel 20-V(D-S) MOSFET

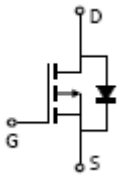
**SOT-23**

1. GATE
2. SOURCE
3. DRAIN




**APPLICATIONS**

- PA Switch
- Load Switch




**MARKING: S21**

**Maximum ratings ($T_a$=25℃ unless otherwise noted)**

| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Drain-Source Voltage | $V_{DS}$ | -20 | V |
| Gate-Source Voltage | $V_{GS}$ | ±12 | |
| Continuous Drain Current | $I_D$ | -2.9 | A |
| Pulsed Drain Current | $I_{DM}$ | -12 | |
| Continuous Source-Drain Diode Current | $I_S$ | -0.59 | |
| Maximum Power Dissipation | $P_D$ | 0.35 | W |
| Thermal Resistance from Junction to Ambient | $R_{\theta JA}$ | 357 | ℃/W |
| Junction Temperature | $T_J$ | 150 | ℃ |
| Storage Temperature | $T_{stg}$ | -50 ~+150 | |

## Electrical characteristics ($T_a$=25℃ unless otherwise noted)

| Parameter | Symbol | Test Condition | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| **Static** | | | | | | |
| Drain-source breakdown voltage | $V_{(BR)\,DSS}$ | $V_{GS}$ = 0V, $I_D$ =-10μA | -20 | | | V |
| Gate-source leakage | $I_{GSS}$ | $V_{DS}$ =0V, $V_{GS}$ =±12V | | | ±100 | nA |
| Zero Gate voltage drain current | $I_{DSS}$ | $V_{DS}$ =-16V, $V_{GS}$ =0V | | | -1.0 | μA |
| Gate-source threshold voltage | $V_{GS(th)}$ | $V_{DS}$ =$V_{GS}$, $I_D$ =-250μA | -0.4 | | -0.9 | V |
| Drain-source on-state resistance | $R_{DS(on)}$ | $V_{GS}$ =-4.5V, $I_D$ =-3.3A | | | 0.057 | Ω |
| | | $V_{GS}$ =-2.5V, $I_D$ =-2.8A | | | 0.076 | |
| | | $V_{GS}$ =-1.8V, $I_D$ =-2.3A | | | 0.110 | |
| Forward tranconductance | $g_{fS}$ | $V_{DS}$ =-5V, $I_D$ =-3.3A | 3 | | | S |
| Forward diode voltage | $V_{SD}$ | $V_{GS}$ =0V,$I_S$=-1.6A | | | -1.2 | V |
| **Dynamic** | | | | | | |
| Input capacitance[a,b] | $C_{iss}$ | $V_{DS}$ =-6V,$V_{GS}$ =0V,f =1MHz | | 715 | | pF |
| Output capacitance[a,b] | $C_{oss}$ | | | 170 | | |
| Reverse transfer capacitance[a,b] | $C_{rss}$ | | | 120 | | |
| Total Gate charge[a] | $Q_g$ | $V_{DS}$ =-6V,$V_{GS}$ =-4.5V,$I_D$=-3.3A | | | 13 | nc |
| Gate-Source charge[a] | $Q_{gs}$ | | | 1.2 | | nc |
| Gate-Drain charge[a] | $Q_{gd}$ | | | 2.2 | | nc |
| **Switching**[a,b] | | | | | | |
| Turn-on delay Time | $t_{d(on)}$ | $V_{GEN}$=-4.5V,$V_{DD}$=-6V, $I_D$ =-1.0A,$R_G$=6Ω, $R_L$=6Ω | | | 25 | ns |
| Rise time | $t_r$ | | | | 55 | |
| Turn-off delay time | $t_{d(off)}$ | | | | 90 | |
| Fall time | $t_f$ | | | | 60 | |

**Notes :**

a. Pulse Test : pulse width ≤300μs, duty cycle ≤2%.

# Typical Characteristics CJ2321