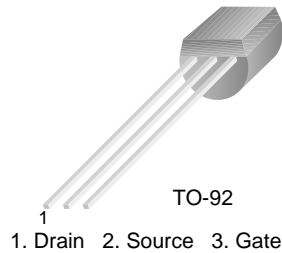




PN4861

N-Channel Switch

- This device is designed for electronic switching applications such as low ON resistance analog switching.
- Sourced from process 51.



Absolute Maximum Ratings* $T_a=25^\circ\text{C}$ unless otherwise noted

| Symbol | Parameter | Value | Units |
|----------------|--|-----------|------------------|
| V_{DG} | Drain-Gate Voltage | 30 | V |
| V_{GS} | Gate-Source Voltage | -30 | V |
| I_{GF} | Forward Gate Current | 50 | mA |
| T_J, T_{STG} | Operating and Storage Junction Temperature Range | -55 ~ 150 | $^\circ\text{C}$ |

* This ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

NOTES:

- 1) These rating are based on a maximum junction temperature of 150 degrees C.
- 2) These are steady limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.

Thermal Characteristics $T_a=25^\circ\text{C}$ unless otherwise noted

| Symbol | Parameter | Max. | Units |
|-----------------|---|------|---------------------------|
| P_D | Total Device Dissipation | 625 | mW |
| | Derate above 25°C | 5.0 | mW/ $^\circ\text{C}$ |
| $R_{\theta JC}$ | Thermal Resistance, Junction to Case | 125 | $^\circ\text{C}/\text{W}$ |
| $R_{\theta JA}$ | Thermal Resistance, Junction to Ambient | 357 | $^\circ\text{C}/\text{W}$ |

* Device mounted on FR-4 PCB 1.5" X 1.6" X 0.06"

Electrical Characteristics* $T_a=25^\circ\text{C}$ unless otherwise noted

| Symbol | Parameter | Test Condition | Min. | Max. | Units |
|--------|-----------|----------------|------|------|-------|
|--------|-----------|----------------|------|------|-------|

Off Characteristics

| | | | | | |
|---------------|-------------------------------|--|------|---------------|----|
| $V_{(BR)GSS}$ | Gate-Source Breakdown Voltage | $I_G = 1.0 \mu\text{A}, V_{DS} = 0 \text{ V}$ | -30 | | V |
| I_{GSS} | Gate Reverse Current | $V_{GS} = 15 \text{ V}, V_{DS} = 0, T = 25^\circ\text{C}$ $T = 100^\circ\text{C}$ | | -0.25 -500 | nA |
| $V_{GS(OFF)}$ | Gate-Source Cut-off Voltage | $V_{DS} = 15 \text{ V}, I_D = 0.5 \text{ nA}$ | -0.8 | -4.0 | V |

On Characteristics

| | | | | | |
|--------------|-----------------------------------|---|---|-----|----------|
| I_{DSS} | Zero-Gate Voltage Drain Current * | $V_{DS} = 15\text{V}, V_{GS} = 0$ | 8 | 80 | mA |
| $V_{DS(ON)}$ | Drain-Source On Voltage | $I_D = 5 \text{ mA}$ | | 0.5 | V |
| $R_{DS(ON)}$ | Drain-Source On Voltage | $V_{DS} = 0 \text{ V}, V_{GS} = 0 \text{ V}, f = 1\text{kHz}$ | | 60 | Ω |

Small Signal Characteristics




| | | | | | |
|-----------|------------------------------|--|--|----|----|
| C_{iss} | Input Capacitance | $V_{DS} = 10\text{V}, V_{GS} = 0\text{V}, f = 1.0\text{MHz}$ | | 18 | pF |
| C_{rss} | Reverse Transfer Capacitance | $V_{DS} = 10\text{V}, V_{GS} = 0\text{V}, f = 1.0\text{MHz}$ | | 8 | pF |

* Pulse Test: Pulse Width $\leq 300\mu\text{s}$, Duty Cycle = 2%



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