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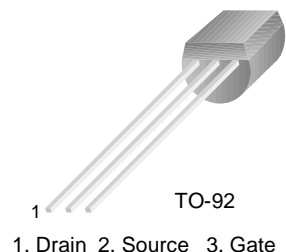
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N-Channel Switch

- This device is designed for low level analog switching, sample and hold circuits and chopper stabilized amplifiers.
- Sourced from process 51.



Absolute Maximum Ratings * $T_C=25^{\circ}\text{C}$ 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 | $^{\circ}\text{C}$ |

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

NOTES:

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

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

| Symbol | Parameter | Test Condition | Min. | Typ. | Max. | Units |
|-------------------------------------|-----------------------------------|---|------|------|------|----------|
| Off Characteristics | | | | | | |
| $V_{(BR)GSS}$ | Gate-Source Breakdown Voltage | $V_{DS} = 0, I_G = -10\mu\text{A}$ | -30 | | | V |
| I_{GSS} | Gate Reverse Current | $V_{GS} = -15\text{V}, V_{DS} = 0$ | | | -1.0 | nA |
| $I_{D(off)}$ | Drain Cutoff Leakage Current | $V_{DS} = 12\text{V}, V_{GS} = 15\text{V}$ | | | 1.0 | nA |
| On Characteristics | | | | | | |
| I_{DSS} | Zero-Gate Voltage Drain Current * | $V_{DS} = 20\text{V}, I_{GS} = 0$ | 25 | | | mA |
| $r_{DS(on)}$ | Drain-Source On Resistance | $V_{GS} = 0\text{V}, I_D = 1.0\text{mA}$ | | | 60 | Ω |
| Small Signal Characteristics | | | | | | |
| $r_{ds(on)}$ | Drain-Source On Resistance | $V_{DS} = V_{GS} = 0, f = 1.0\text{kHz}$ | | | 60 | Ω |
| C_{iss} | Input Capacitance | $V_{DS} = 0, V_{GS} = 12\text{V}, f = 1.0\text{MHz}$ | | | 10 | pF |
| C_{rss} | Reverse Transfer Capacitance | $V_{DS} = 0\text{V}, V_{GS} = 12\text{V}, f = 1.0\text{MHz}$ | | | 4.0 | pF |
| Switching Characteristics | | | | | | |
| $t_{d(on)}$ | Trun On Delay Time | $V_{DD} = 10\text{V}, V_{GS(on)} = 0$ $V_{GS(off)} = -12, I_{D(on)} = 12\text{mA}$ $R_G = 50\Omega$ | | | 6.0 | ns |
| t_r | Rise Time | | | | 8.0 | ns |
| $t_{d(off)}$ | Trun Off Delay Time | | | | 10 | ns |
| t_f | Fall Time | | | | 20 | ns |

* Pulse Test: Pulse Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 1.0\%$

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

| Symbol | Parameter | Max. | Units |
|-----------------|--|------------|------------------------------|
| P_D | Total Device Dissipation Derate above 25 $^{\circ}\text{C}$ | 350 2.8 | mW 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 | $^{\circ}\text{C}/\text{W}$ |

Package Dimensions

TO-92



Dimensions in Millimeters

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|--------------------------|------------------------|---|
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