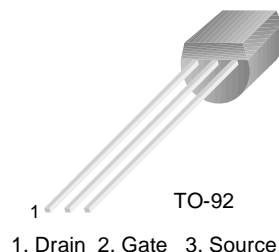


2N3820

2N3820

P-Channel General Purpose Amplifier

- This device is designed primarily for low level audio and general purpose applications with high impedance signal sources.
- Sourced from process 89.



Epitaxial Silicon Transistor

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

| Symbol | Parameter | Ratings | Units |
|-----------|---------------------------|-----------|------------------|
| V_{DG} | Drain-Gate Voltage | -20 | V |
| V_{GS} | Gate-Source Voltage | 20 | V |
| I_{GF} | Forward Gate Current | 10 | mA |
| T_{STG} | Storage 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.

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 | $I_G = 10\mu\text{A}, V_{DS} = 0$ | 20 | | | V |
| I_{GSS} | Gate Reverse Current | $V_{GS} = 10\text{V}, V_{DS} = 0$ | | | 20 | nA |
| $V_{GS(off)}$ | Gate-Source Cutoff Voltage | $V_{DS} = -10\text{V}, I_D = -10\mu\text{A}$ | | | 8.0 | V |
| On Characteristics | | | | | | |
| I_{DSS} | Zero-Gate Voltage Drain Current * | $V_{DS} = -10\text{V}, V_{GS} = 0$ | -0.3 | | -15 | mA |
| Small Signal Characteristics | | | | | | |
| g_{fs} | Forward Transfer Conductance | $V_{DS} = -10\text{V}, V_{GS} = 0, f = 1.0\text{KHz}$ | 800 | | 5000 | μmhos |
| C_{iss} | Input Capacitance | $V_{DS} = -10\text{V}, V_{GS} = 0, f = 1.0\text{KHz}$ | | | 32 | pF |
| C_{rss} | Reverse Transfer Capacitance | $V_{DS} = -10\text{V}, V_{GS} = 0, f = 1.0\text{KHz}$ | | | 16 | pF |

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

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

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

* Device mounted on FR-4 PCB $1.6" \times 1.6" \times 0.06"$

Package Dimensions

TO-92



Dimensions in Millimeters

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