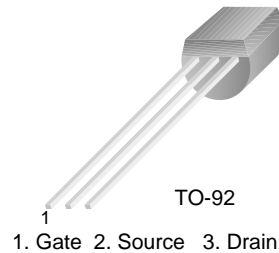




J305

N-Channel RF Amplifier

- This device is designed primarily for electronic switching applications such as low on resistance analog switching.
- Sourced from process 50.



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 | 10 | 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 | 350 | mW |
| | Derate above 25°C | 2.8 | $\text{mW}/^\circ\text{C}$ |
| $R_{\theta JC}$ | Thermal Resistance, Junction to Case | 125 | $^\circ\text{C}/\text{W}$ |
| $R_{\theta JA}$ | Thermal Resistance, Junction to Ambient | 357 | $^\circ\text{C}/\text{W}$ |

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 | $I_G = 1.0\mu\text{A}, V_{DS} = 0$ | -30 | | V |
| I_{GSS} | Gate Reverse Current | $V_{GS} = 20\text{V}, V_{DS} = 0$ | | -100 | pA |
| $V_{GS(off)}$ | Gate-Source Cut-off Voltage | $V_{DS} = 15\text{V}, I_D = 100\text{nA}$ | -0.5 | -3 | V |
| V_{GS} | Gate-Source Forward Voltage | $V_{DS} = 15\text{V}, I_D = 0.2\text{mA}$ | -1.5 | -4.0 | V |

On Characteristics

| | | | | | |
|-------------|-----------------------------------|-----------------------------------|---|---|----|
| * I_{DSS} | Zero-Gate Voltage Drain Current * | $V_{DS} = 15\text{V}, V_{GS} = 0$ | 1 | 8 | mA |
|-------------|-----------------------------------|-----------------------------------|---|---|----|

Small Signal Characteristics



| | | | | | |
|----------|-----------------------------|---|------|--|-------------|
| g_{fs} | Forward Transferconductance | $V_{DS} = 15\text{V}, V_{GS} = 0\text{V}$ | 3000 | | $\mu\Omega$ |
|----------|-----------------------------|---|------|--|-------------|

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



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