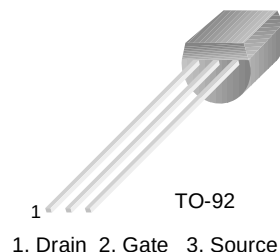


## N-Channel RF Amplifier

- This device is designed for RF amplifier and mixer applications operating up to 450MHz, and for analog switching requiring low capacitance.
- Sourced from process 50.



## Epitaxial Silicon Transistor

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

| Symbol    | Parameter                 | Ratings   | Units            |
|-----------|---------------------------|-----------|------------------|
| $V_{DG}$  | Drain-Gate Voltage        | 25        | V                |
| $V_{GS}$  | Gate-Source Voltage       | -25       | V                |
| $I_D$     | Drain Current             | 50        | mA               |
| $I_{GF}$  | 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:

- These ratings are based on a maximum junction temperature of 150 degrees C.
- 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            |
|-------------------------------------|---------------------------------|------------------------------------------------------|------|------|------|------------------|
| <b>Off Characteristics</b>          |                                 |                                                      |      |      |      |                  |
| $V_{(BR)GSS}$                       | Gate-Source Breakdown Voltage   | $I_G = 1.0\mu\text{A}, V_{DS} = 0$                   | 25   |      |      | V                |
| $I_{GSS}$                           | Gate Reverse Current            | $V_{GS} = -15\text{V}, V_{DS} = 0$                   |      |      | 2.0  | nA               |
| $V_{GS(off)}$                       | Gate-Source Cutoff Voltage      | $V_{DS} = 15\text{V}, I_D = 2.0\text{nA}$            |      |      | 8.0  | V                |
| $V_{GS}$                            | Gate-Source Voltage             | $V_{DS} = 15\text{V}, I_D = 200\mu\text{A}$          | -0.5 |      | -7.5 | V                |
| <b>On Characteristics</b>           |                                 |                                                      |      |      |      |                  |
| $I_{DSS}$                           | Zero-Gate Voltage Drain Current | $V_{DS} = 15\text{V}, V_{GS} = 0$                    | 2.0  |      | 20   | mA               |
| <b>Small Signal Characteristics</b> |                                 |                                                      |      |      |      |                  |
| $g_{fs}$                            | Forward Transfer Conductance    | $V_{DS} = 15\text{V}, V_{GS} = 0, f = 1.0\text{KHz}$ | 2000 |      | 6500 | $\mu\text{mhos}$ |
| $g_{oss}$                           | Output Conductance              | $V_{DS} = 15\text{V}, V_{GS} = 0, f = 1.0\text{KHz}$ |      |      | 50   | $\mu\text{mhos}$ |
| $y_{fs}$                            | Forward Transfer Admittance     | $V_{DS} = 15\text{V}, V_{GS} = 0, f = 1.0\text{KHz}$ | 1600 |      |      | $\mu\text{mhos}$ |
| $C_{iss}$                           | Input Capacitance               | $V_{DS} = 15\text{V}, V_{GS} = 0, f = 1.0\text{KHz}$ |      |      | 8.0  | pF               |
| $C_{rss}$                           | Reverse Transfer Capacitance    | $V_{DS} = 15\text{V}, V_{GS} = 0, f = 1.0\text{KHz}$ |      |      | 4.0  | pF               |

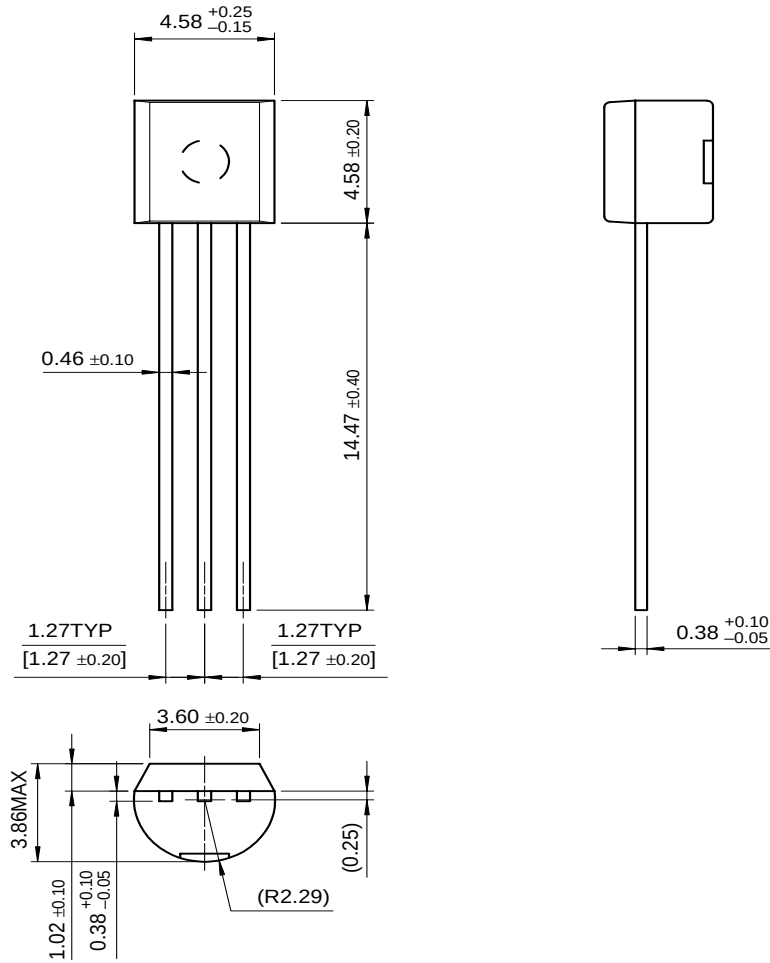
### Thermal Characteristics $T_A=25^\circ\text{C}$ unless otherwise noted

| Symbol          | Parameter                                                   | Max.       | Units                      |
|-----------------|-------------------------------------------------------------|------------|----------------------------|
| $P_D$           | Total Device Dissipation<br>Derate above $25^\circ\text{C}$ | 350<br>2.8 | mW<br>mW/ $^\circ\text{C}$ |
| $R_{\theta JC}$ | Thermal Resistance, Junction to Case                        | 125        | $^\circ\text{C/W}$         |
| $R_{\theta JA}$ | Thermal Resistance, Junction to Ambient                     | 357        | $^\circ\text{C/W}$         |

\* Device mounted on FR-4 PCB  $1.5" \times 1.6" \times 0.06"$

# Package Dimensions

## TO-92



Dimensions in Millimeters

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| Datasheet Identification | Product Status         | Definition                                                                                                                                                                                                            |
|--------------------------|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
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