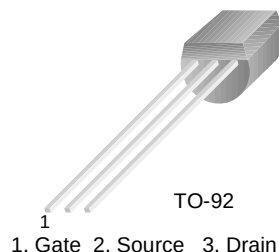


# 2N5245

2N5245

## N-Channel RF Amplifier

- This device is designed for HF/VHF mixer/amplifier and applications where process 50 is not adequate. Sufficient gain and low noise for sensitive receivers.
- Sourced from process 90.



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

| Symbol         | Parameter                                        | Ratings   | 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:

- These rating 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 $T_a=25^\circ\text{C}$ unless otherwise noted

| Symbol                              | Parameter                         | Test Condition                                               | Min. | Max.  | Units            |
|-------------------------------------|-----------------------------------|--------------------------------------------------------------|------|-------|------------------|
| <b>Off Characteristics</b>          |                                   |                                                              |      |       |                  |
| $V_{(BR)GSS}$                       | Gate-Source Breakdwn Voltage      | $I_G = 1.0\mu\text{A}, V_{DS} = 0$                           | -30  |       | V                |
| $I_{GSS}$                           | Gate Reverse Current              | $V_{GS} = 25\text{V}, V_{DS} = 0$                            |      | -1.0  | nA               |
| $V_{GS(off)}$                       | Gate-Source Cutoff Voltage        | $V_{DS} = 15\text{V}, I_D = 1.0\text{nA}$                    | -1.0 | -0.6  | V                |
| <b>On Characteristics</b>           |                                   |                                                              |      |       |                  |
| $I_{DSS}$                           | Zero-Gate Voltage Drain Current * | $V_{DS} = 15\text{V}, V_{GS} = 0$                            | 5    | 15    | mA               |
| <b>Small Signal Characteristics</b> |                                   |                                                              |      |       |                  |
| $g_{fs}$                            | Forward Transferconductance       | $V_{GS} = 0\text{V}, V_{DS} = 15\text{V}, f = 1.0\text{kHz}$ | 4500 | 11000 | $\mu\text{mhos}$ |
| $g_{oss}$                           | Common- Source Output Conductance | $V_{GS} = 0\text{V}, V_{DS} = 15\text{V}, f = 1.0\text{kHz}$ |      | 50    | $\mu\text{mhos}$ |

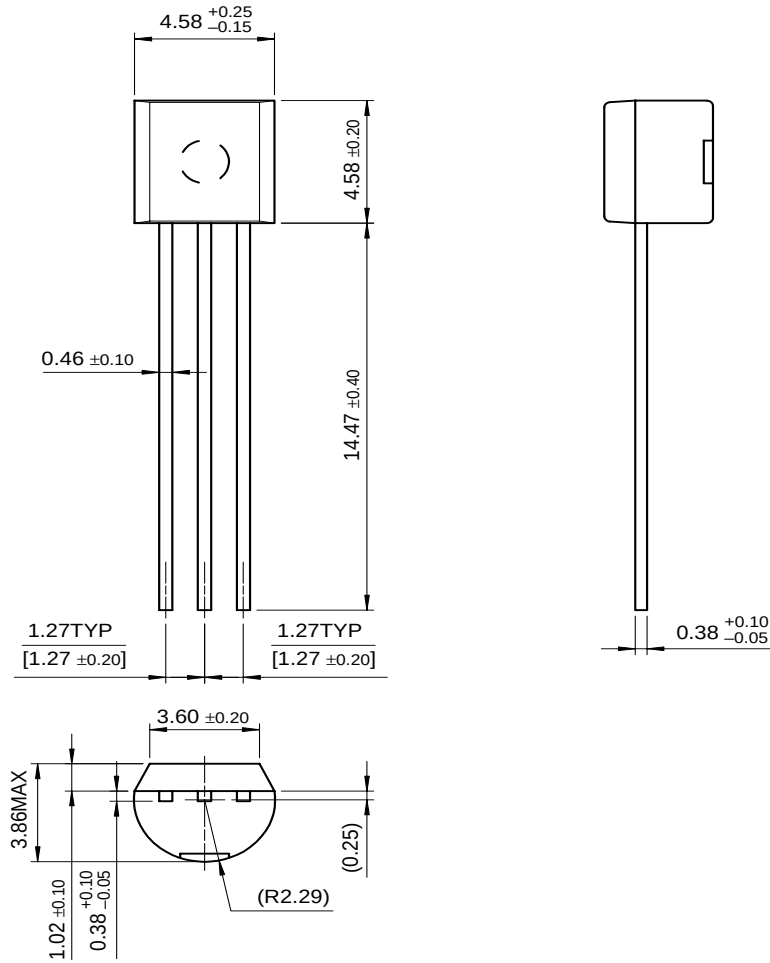
\* Pulse Test: Pulse  $\leq 300\mu\text{s}$

## 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        | $^\circ\text{C/W}$         |

# Package Dimensions

## TO-92



Dimensions in Millimeters

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| ActiveArray <sup>™</sup>                         | FAST <sup>®</sup>               | MICROCOUPLER <sup>™</sup> | PowerTrench <sup>®</sup>        | SuperSOT <sup>™</sup> -6    |
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### Definition of Terms

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