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NTE451

Silicon N-Channel JFET Transistor VHF/UHF Amplifier TO92 Type Package

Absolute Maximum Ratings:

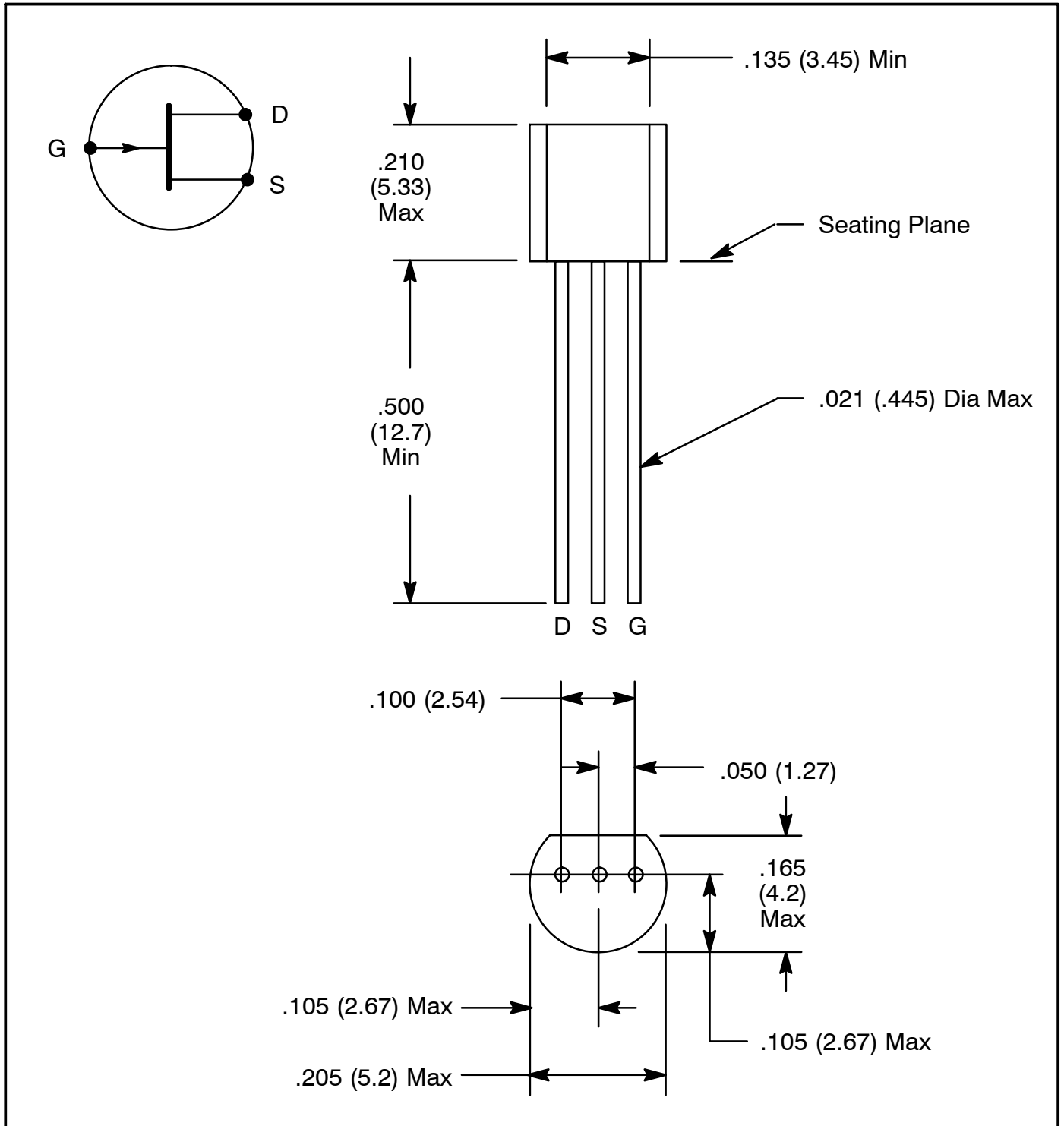
| | |
|---|-------------------------------|
| Drain-Gate Voltage, V_{DG} | 25V |
| Reverse Gate-Source Voltage, V_{GSR} | 25V |
| Drain Current, I_D | 30mA |
| Total Device Dissipation ($T_C = +25^\circ C$), P_D | 350mW |
| Derate Above $25^\circ C$ | 2.8mW/ $^\circ C$ |
| Operating Junction Temperature Range, T_J | -65° to $+150^\circ C$ |
| Storage Temperature Range, T_{stg} | -65° to $+150^\circ C$ |

Electrical Characteristics: ($T_A = +25^\circ C$ unless otherwise specified)

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|---|---------------|---|------|-----|------|------|
| OFF Characteristics | | | | | | |
| Gate-Source Breakdown Voltage | $V_{(BR)GSS}$ | $I_G = -1 A, V_{DS} = 0$ | -25 | - | - | V |
| Gate Reverse Current | I_{GSS} | $V_{GS} = -20V, V_{DS} = 0$ | - | - | -1.0 | nA |
| | | $V_{GS} = -20V, V_{DS} = 0, T_A = +100^\circ C$ | - | - | -0.2 | nA |
| Gate-Source Cutoff Voltage | $V_{GS(off)}$ | $I_D = 10nA, V_{DS} = 15V$ | -0.5 | - | -4.0 | V |
| ON Characteristics | | | | | | |
| Zero-Gate-Voltage Drain Current | I_{DSS} | $V_{DS} = 15V, V_{GS} = 0$ | 4 | - | 20 | mA |
| Small Signal Characteristics Characteristics | | | | | | |
| Forward Transfer Admittance | $ y_{fs} $ | $V_{DS} = 15V, V_{GS} = 0, f = 1kHz$ | 3500 | - | 7000 | mho |
| Input Admittance | $Re(y_{is})$ | $V_{DS} = 15V, V_{GS} = 0, f = 400MHz$ | - | - | 1000 | mho |
| Output Admittance | $ y_{os} $ | $V_{DS} = 15V, V_{GS} = 0, f = 1kHz$ | - | - | 60 | mho |
| Output Conductance | $Re(y_{os})$ | $V_{DS} = 15V, V_{GS} = 0, f = 400MHz$ | - | - | 100 | mho |
| Forward Transconductance | g_{fs} | $V_{DS} = 15V, V_{GS} = 0, f = 400MHz$ | 3000 | - | - | mho |
| Input Capacitance | C_{iss} | $V_{DS} = 15V, V_{GS} = 0, f = 1MHz$ | - | - | 5 | pF |
| Reverse Transfer Capacitance | C_{rss} | $V_{DS} = 15V, V_{GS} = 0, f = 1MHz$ | - | - | 1 | pF |
| Output Capacitance | C_{oss} | $V_{DS} = 15V, V_{GS} = 0, f = 1MHz$ | - | - | 2 | pF |

Electrical Characteristics Cont'd): ($T_A = +25^\circ\text{C}$ unless otherwise specified)

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit | |
|-----------------------------------|----------|--|---------------------|-----|-----|------|----|
| Functional Characteristics | | | | | | | |
| Noise Figure | NF | $V_{DS} = 15\text{V}, I_D = 4\text{mA}, R_G \approx 1\text{k}^\circ$ | $f = 100\text{MHz}$ | - | - | 2 | dB |
| | | | $f = 400\text{MHz}$ | - | - | 4 | dB |
| Common Source Power Gain | G_{ps} | $V_{DS} = 15\text{V}, I_D = 4\text{mA}$ | $f = 100\text{MHz}$ | 18 | - | 30 | dB |
| | | | $f = 400\text{MHz}$ | 10 | - | 20 | dB |



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