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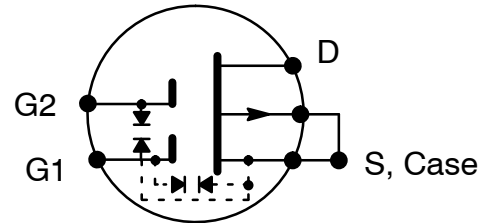
NTE455 N-Channel Silicon Dual-Gate MOS Field Effect Transistor (MOSFET)

Description:

The NTE455 is an N-Channel silicon dual-gate MOSFET designed for use as an RF amplifier in UHF TV tuners. This device is especially recommended for use in half wave length resonator type tuners.

Features:

- Low Reverse Transfer Capacitance: $C_{rss} = 0.02\text{pF Typ}$
- High Power Gain: $G_{ps} = 18\text{dB Typ}$
- Low Noise Figure: $NF = 3.8\text{dB Typ}$



Absolute Maximum Ratings: ($T_A = +25^\circ\text{C}$ unless otherwise specified)

| | |
|---|-------------------------------------|
| Drain-Source Voltage, V_{DSX} | 20V |
| Gate1-Source Voltage, V_{G1S} | $\pm 10\text{V}$ |
| Gate2-Source Voltage, V_{G2S} | $\pm 10\text{V}$ |
| Drain Current, I_D | 25mA |
| Total Power Dissipation, P_D | 200mW |
| Maximum Channel Temperature, T_{ch} | $+125^\circ\text{C}$ |
| Storage Temperature Range, T_{stg} | -55° to $+125^\circ\text{C}$ |

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

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|---------------------------------|----------------|--|-----|------|----------|------|
| Zero-Gate Voltage Drain Current | I_{DSS} | $V_{DS} = 10\text{V}, V_{G2S} = 4\text{V}, V_{G1S} = 0$ | 0.5 | - | 20 | mA |
| Forward Transfer Admittance | $ Y_{fs} $ | $V_{DS} = 10\text{V}, V_{G2S} = 4\text{V}, I_D = 10\text{mA}, f = 1\text{kHz}$ | 18 | 22 | - | ms |
| Input Capacitance | C_{iss} | $V_{DS} = 10\text{V}, V_{G2S} = 4\text{V}, I_D = 10\text{mA}, f = 1\text{MHz}$ | 1.5 | 2.0 | 3.5 | pF |
| Output Capacitance | C_{oss} | $V_{DS} = 10\text{V}, V_{G2S} = 4\text{V}, I_D = 10\text{mA}, f = 1\text{MHz}$ | 0.5 | 1.1 | 1.5 | pF |
| Reverse Transfer Capacitance | C_{rss} | $V_{DS} = 10\text{V}, V_{G2S} = 4\text{V}, I_D = 10\text{mA}, f = 1\text{MHz}$ | - | 0.02 | 0.03 | pF |
| Power Gain | G_{ps} | $V_{DS} = 10\text{V}, V_{G2S} = 4\text{V}, I_D = 10\text{mA}, f = 900\text{MHz}$ | 15 | 18 | 22 | dB |
| Noise Figure | NF | $V_{DS} = 10\text{V}, V_{G2S} = 4\text{V}, I_D = 10\text{mA}, f = 900\text{MHz}$ | - | 3.8 | 5.5 | dB |
| Gate-Source Cutoff Voltage | $V_{G1S(off)}$ | $V_{DS} = 10\text{V}, V_{G2S} = 4\text{V}, I_D = 10\mu\text{A}$ | - | - | 2.0 | V |
| | $V_{G2S(off)}$ | | - | - | -0.7 | V |
| Gate Reverse Current | I_{G1SS} | $V_{DS} = 0, V_{G1S} = \pm 10\text{V}, V_{G2S} = 0$ | - | - | ± 20 | nA |
| | I_{G2SS} | $V_{DS} = 0, V_{G2S} = \pm 10\text{V}, V_{G1S} = 0$ | - | - | ± 20 | nA |
| Drain-Source Breakdown Voltage | BV_{DSX} | $V_{G1S} = V_{G2S} = -2\text{V}, I_D = 10\mu\text{A}$ | 20 | 24 | - | V |

