



ELECTRONICS, INC.
44 FARRAND STREET
BLOOMFIELD, NJ 07003
(973) 748-5089
<http://www.nteinc.com>

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	–	8.0	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

