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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:

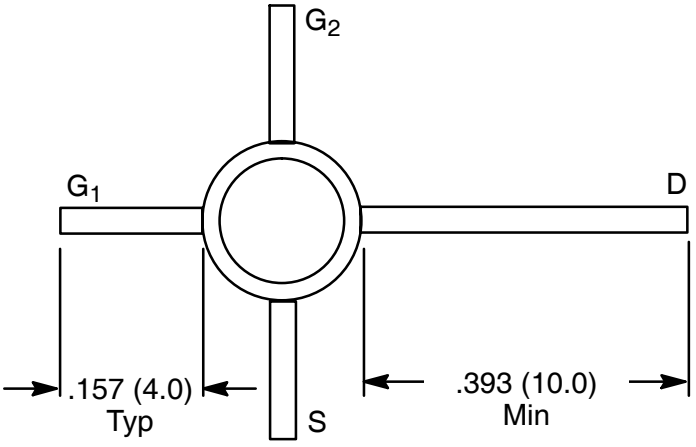
- Low Reverse Transfer Capacitance: C_{rss} = 0.02pF Typ
- High Power Gain: G_{ps} = 18dB Typ
- Low Noise Figure: NF = 3.8dB Typ

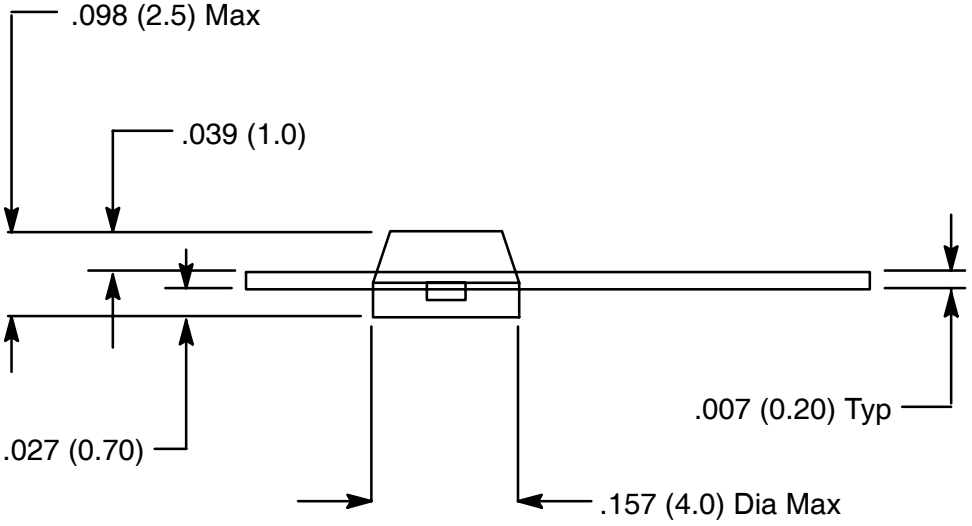
Absolute Maximum Ratings: (T_A = +25°C unless otherwise specified)

Drain–Source Voltage, V_{DSX} 20V
Gate1–Source Voltage, V_{G1S} . . . . . ±10V
Gate2–Source Voltage, V_{G2S} . . . . . ±10V
Drain Current, I_D 25mA
Total Power Dissipation, P_D 200mW
Maximum Channel Temperature, T_{ch} . . . . . +125°C
Storage Temperature Range, T_{stg} . . . . . –55° to +125°C

Electrical Characteristics: (T_A = +25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Zero–Gate Voltage Drain Current	I_{DSS}	V_{DS} = 10V, V_{G2S} = 4V, V_{G1S} = 0	0.5	–	8.0	mA
Forward Transfer Admittance	$\|Y_{fs}\|$	V_{DS} = 10V, V_{G2S} = 4V, I_D = 10mA, f = 1kHz	18	22	–	ms
Input Capacitance	C_{iss}	V_{DS} = 10V, V_{G2S} = 4V, I_D = 10mA, f = 1MHz	1.5	2.0	3.5	pF
Output Capacitance	C_{oss}	V_{DS} = 10V, V_{G2S} = 4V, I_D = 10mA, f = 1MHz	0.5	1.1	1.5	pF
Reverse Transfer Capacitance	C_{rss}	V_{DS} = 10V, V_{G2S} = 4V, I_D = 10mA, f = 1MHz	–	0.02	0.03	pF
Power Gain	G_{ps}	V_{DS} = 10V, V_{G2S} = 4V, I_D = 10mA, f = 900MHz	15	18	22	dB
Noise Figure	NF	V_{DS} = 10V, V_{G2S} = 4V, I_D = 10mA, f = 900MHz	–	3.8	5.5	dB
Gate–Source Cutoff Voltage	$V_{G1S(off)}$	V_{DS} = 10V, V_{G2S} = 4V, I_D = 10μA	–	–	2.0	V
	$V_{G2S(off)}$		–	–	–0.7	V
Gate Reverse Current	I_{G1SS}	V_{DS} = 0, V_{G1S} = ±10V, V_{G2S} = 0	–	–	±20	nA
	I_{G2SS}	V_{DS} = 0, V_{G2S} = ±10V, V_{G1S} = 0	–	–	±20	nA
Drain–Source Breakdown Voltage	BV_{DSX}	V_{G1S} = V_{G2S} = –2V, I_D = 10μA	20	24	–	V


G2
G1
D
.157 (4.0)
Typ
S
.393 (10.0)
Min


.098 (2.5) Max
.039 (1.0)
.007 (0.20) Typ
.027 (0.70)
.157 (4.0) Dia Max