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NTE456
N–Channel Silicon JFET
General Purpose Amp, Switch
TO72 Type Package

Description:

The NTE456 is an N–Channel junction silicon field–effect transistor in a TO72 type package designed for general purpose amplifier and switching applications.

Absolute Maximum Ratings:

Drain–Source Voltage, V_{DS} 30V
Drain–Gate Voltage, V_{DG} 30V
Gate–Source Voltage, V_{GS} . . . . . –30V
Drain Current, I_D 15mA
Total Device Dissipation (T_A = +25°C), P_D 300mW
Derate Above 25°C . . . . . 2mW/°C
Operating Junction Temperature, T_J . . . . . +150°C
Storage Temperature Range, T_{stg} . . . . . –65°C to +200°C

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF Characteristics						
Gate–Source Breakdown Voltage	$V_{(BR)GSS}$	V_{DS} = 0, I_G = –10 A	–30	–	–	V
Gate Reverse Current	I_{GSS}	V_{GS}= –15V, V_{DS} = 0	–	–	–0.1	nA
		V_{GS}= –15V, V_{DS} = 0, T_A = +150°C	–	–	–100	nA
Gate–Source Cutoff Voltage	$V_{GS(off)}$	V_{DS} = 15V, I_D = 0.1nA	–	–	–6	V
Gate–Source Voltage	V_{GS}	V_{DS} = 15V, I_D = 200 A	–1.0	–	–5.0	V
ON Characteristics						
Zero–Gate–Voltage Drain Current	I_{DSS}	V_{DS} = 15V, V_{GS} = 0	2.0	–	6.0	mA
Static Drain–Source On Resistance	$r_{DS(on)}$	V_{DS} = 0, V_{GS} = 0	–	400	–	°

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Small−Signal Characteristics						
Forward Transfer Admittance Common Source	$\|y_{fs}\|$	V_{DS} = 15V, V_{GS} = 0, f = 1kHz, Note 1	2000	–	5000	mhos
Output Admittance Common Source	$\|y_{os}\|$	V_{DS} = 15V, V_{GS} = 0, f = 1kHz	–	–	20	mhos
Input Capacitance	C_{iss}	V_{DS} = 15V, V_{GS} = 0, f = 1kHz	–	4.5	6.0	pF
Reverse Transfer Capacitance	C_{rss}	V_{DS} = 15V, V_{GS} = 0, f = 1kHz	–	1.2	2.0	pF
Common−Source Output Capacitance	C_{osp}	V_{DS} = 15V, V_{GS} = 0, f = 30MHz	–	1.5	–	pF
Functional Characteristics						
Noise Figure	NF	V_{DS} = 15V, V_{GS} = 0, R_S = 1M° , f = 100Hz	–	–	2.5	dB

Note 1. Pulse test: Pulse Width = 630ms, Duty Cycle = 10%.