



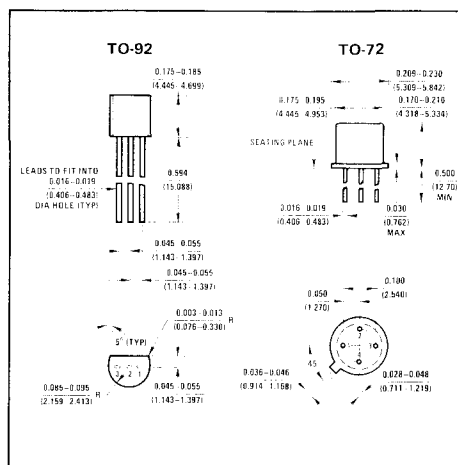
NF5101-03/PF5101-03 N-Channel JFETs

General Description

The NF5101-3 (TO-72) and PF5101-3 (TO-92) are N-channel silicon Junction Field-Effect Transistors designed for ultra-low noise preamplifier applications, particularly hydrophones, particle detectors, high quality mic/phono/tape, video, vidicon and I-R sensor preamplifiers.

Absolute Maximum Ratings

Drain-Gate Voltage	40V
Reverse Gate-Source Voltage	40V
Forward Gate Current	10 mA
Device Dissipation @ 25°C	310 mW
Derate Above 25°C	2.82 mW/°C
Operating Temperature Range	-65 to +150°C
Lead Temperature (1/16" from case for 10 seconds)	300°C



Electrical Characteristics

PARAMETER	CONDITIONS	PF/NF5101			PF/NF5102			PF/NF5103			UNITS
		MIN	TYP	MAX	MIN	TYP	MAX	MIN	TYP	MAX	
BV _{GSS}	Gate-Source Breakdown Voltage	I _G = 1μA, V _{DS} = 0V			40			40			V
I _{GSS}	Gate Reverse Current	V _{GS} = -15V, T _A = 25°C					0.2			0.2	nA
		V _{DS} = 0V, T _A = 125°C					0.5			0.5	μA
V _{GS(OFF)}	Gate-Source Cutoff Voltage	V _{DS} = 15V, I _D = 1 nA			0.5		1.1	0.7		1.6	V
I _{DSS}	Saturation Drain Current	V _{DS} = 15V, V _{GS} = 0V, Pulsed 300μs ≤ 2%			1.0		12	4.0		20	mA
g _{fs}	Common-Source Transconductance	V _{DG} = 15V, I _D = 0.5 mA			3.5	5		3.5	4.5		mmho
		I _D = 2 mA					7.5	9			mmho
g _{os}	Common-Source Output Conductance	V _{DG} = 15V, I _D = 0.5 mA				5	25		5	25	μmho
C _{iss}	Common-Source Input Capacitance	V _{DG} = 15V, V _{GS} = 0V				12	16		12	16	pF
C _{rss}	Common-Source Reverse Transfer Capacitance	V _{DG} = 15V, V _{GS} = 0V				4	6		4	6	pF
NF	Common-Source Spot Noise Figure	V _{DG} = 15V, I _D = 0.5 mA, R _G = 20 kΩ, f = 10 Hz				1.5			1.5		dB
e _n	Equivalent Short Circuit Input Noise Voltage	V _{DG} = 10V, I _D = 0.5 mA, f = 10 Hz				7	20		8	20	nV/√Hz
		I _D = 2 mA							15		20 nV/√Hz
		V _{DG} = 10V, I _D = 0.5 mA, f = 1 kHz				3.5			3.5		3.5 nV/√Hz
		I _D = 2 mA							3		3 nV/√Hz