2N5949-53 N-Channel JFETs

General Description

The 2N5949 thru 2N5953 series of N-channel JFETs is characterized for low frequency to VHF amplifiers requiring tightly specified I_{DSS} ranges.

Absolute Maximum Ratings (25°C)

Reverse Gate-Drain or Gate-Source Voltage	30V
Gate Current	10 mA
Total Device Dissipation at 25°C Case Temperature (Derate 2.88 mW/°C)	360 mW
Total Device Dissipation at 25°C Lead Temperature (Derate 4 mW/°C)	500 mW
Storage Temperature Range	−65°C to +150°C
Lead Temperature (1/16" from case for 10 seconds)	260°C

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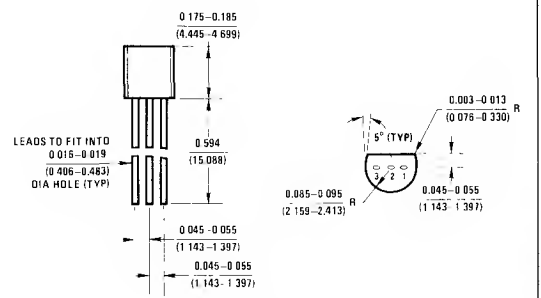

PIN	FET
1	S
2	D
3	G

Electrical Characteristics (25°C unless otherwise noted)

PARAMETER		CONDITIONS		2N5949		2N5950		2N5951		2N5952		2N5953		UNITS
				MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	
I_{GSS}	Gate Reverse Current	V_{GS} = −15V, V_{DS} = 0			-1		−1		1		−1		−1	nA
			T_A = 100°C		-200		−200		-200		−200		−200	
BV_{GSS}	Gate-Source Breakdown Voltage	I_G = -1 μA, V_{DS} = 0		30		30		-30		30		-30		V
$V_{GS(off)}$	Gate-Source Cutoff Voltage	V_{DS} = 15V, I_D = 100 nA		3	−7	−2.5	−6	2	5	1.3	3.5	−0.8	−3	V
V_{GS}	Gate Source Voltage	V_{DS} = 15V	I_D = 1.2 mA	2.25	−6									V
			I_D = 1 mA			−1.8	5							
			I_D = 0.7 mA					−1.3	−4.5					
			I_D = 0.4 mA							0.75	3			
			I_D = 0.25 mA									-0.5	-2.5	
I_{DSS}	Saturation Drain Current	V_{DS} = 15V, V_{GS} = 0,	(Note 1)	12	18	10	15	7	13	4	8	2.5	5	mA
$r_{ds(on)}$	Drain-Source ON Resistance	V_{GS} = 0, I_D = 0	f = 1 kHz		200		210		250		300		375	Ω
g_{fs}	Common-Source Forward Transconductance	V_{DS} = 15V, V_{GS} = 0	f = 1 kHz	3.5	7.5	3.5	7.5	3.5	6.5	2	6.5	2	6.5	mmho
g_{os}	Common-Source Output Conductance				75		75		75		50		50	μmho
$Re(Y_{os})$	Common-Source Output Conductance	V_{DS} = 15V, V_{GS} = 0	f = 100 MHz		75		75		75		75		50	μmho
$Re(Y_{fs})$	Common-Source Transconductance			3.0	7.5	3.0	7.5	3.0	6.5	1.0	6.5	1.0	6.5	mmho
$Re(Y_{is})$	Common-Source Input Conductance				250		250		250		250		250	μmho
C_{iss}	Common-Source Input Capacitance	V_{DS} = 15V, V_{GS} = 0	f = 1 MHz		6		6		6		6		6	pF
C_{rss}	Common-Source Reverse Transfer Capacitance				2		2		2		2		2	pF
NF	Noise Figure	V_{DS} = 15V, V_{GS} = 0	f = 100 MHz, R_G = 1 kΩ		5		5		5		5		5	dB
			f = 1 kHz, R_G = 1 MΩ		2		2		2		2		2	
e_n	Equivalent Input Noise Voltage	V_{DS} = 15V, V_{GS} = 0	f = 1 kHz		100		100		100		100		100	$\frac{nV}{\sqrt{Hz}}$

Note 1: Pulse width 300 μs, duty cycle ≤ 3%.