2N5397, 2N5398 N-Channel JFETs

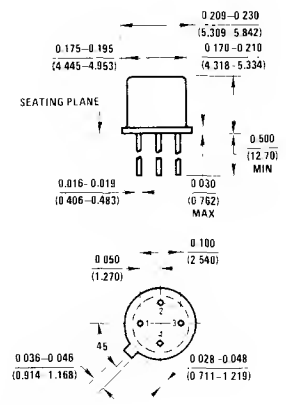
General Description

The 2N5397 thru 2N5398 series of N-channel JFETs is designed for VHF/UHF common-source or common-gate amplifiers, mixers and oscillators.

Absolute Maximum Ratings (25°C)

Gate-Drain or Gate-Source Voltage	−25V
Gate Current	10 mA
Total Device Dissipation (Derate 1.7 mW/°C)	300 mW
Storage Temperature Range	−65°C to +200°C
Lead Temperature (1/16" from case for 10 seconds)	300°C

TO-72



PIN	FET
1	S
2	D
3	G
4	Case

Electrical Characteristics (25°C unless otherwise noted)

PARAMETER		CONDITIONS		2N5397 MIN	2N5397 MAX	2N5398 MIN	2N5398 MAX	UNITS
I_{GSS}	Gate Reverse Current	V_{GS} = −15V, V_{DS} = 0			−0.1		−0.1	nA
			150°C		−0.1		−0.1	μA
BV_{GSS}	Gate-Source Breakdown Voltage	V_{DS} = 0, I_G = −1 μA		−25		−25		V
$V_{GS(off)}$	Gate-Source Cutoff Voltage	V_{DS} = 10V, I_D = 1 nA		−1.0	−6.0	−1.0	−6.0	
I_{DSS}	Saturation Drain Current	V_{DS} = 10V, V_{DS} = 0		10	30	5	40	mA
$V_{GS(f)}$	Gate-Source Forward Voltage	V_{DS} = 0, I_G = 1 mA			1		1	V
g_{fs}	Common-Source Forward Transconductance, (Note 1)	V_{DS} = 10V, I_D = 10 mA	f = 1 kHz	6000	10,000			μmho
		V_{DS} = 10V, V_{GS} = 0				5500	10,000	
g_{os}	Common-Source Output Conductance	V_{DS} = 10V, I_D = 10 mA			200			
		V_{DS} = 10V, V_{GS} = 0					400	
C_{rss}	Common-Source Reverse Transfer Capacitance	V_{DS} = 10V, I_D = 10 mA	f = 1 MHz		1.2			pF
		V_{DS} = 10V, V_{GS} = 0					1.3	
C_{iss}	Common-Source Input Capacitance	V_{DG} = 10V, I_D = 10 mA			5.0			
		V_{DS} = 10V, V_{GS} = 0					5.5	
g_{iss}	Common-Source Input Conductance	V_{DG} = 10V, I_D = 10 mA	f = 450 MHz		2000			μmho
		V_{DS} = 10V, V_{GS} = 0					3000	
g_{oss}	Common-Source Output Conductance	V_{DG} = 10V, I_D = 10 mA			400			
		V_{DS} = 10V, V_{GS} = 0					500	
g_{fs}	Common-Source Forward Transconductance, (Note 1)	V_{DG} = 10V, I_D = 10 mA		5500	9000			
		V_{DS} = 10V, V_{GS} = 0				5000	10,000	
G_{ps}	Common-Source Power Gain (Neutralized)	V_{DG} = 10V, I_D = 10 mA		15				dB
NF	Common-Source, Spot Noise Figure (Neutralized)				3.5			

Note 1: Pulse test duration = 2 ms.