

2N5397, 2N5398 N-Channel JFET

FEATURES

- $G_{ps} = 10$ dB Typical (Common Gate) at 450 MHz
- $NF = 3.5$ dB Typical at 450 MHz
- $C_{rss} = 1$ pF Typical

ABSOLUTE MAXIMUM RATINGS

@ 25°C (unless otherwise noted)

Maximum Temperatures

Storage Temperature	-65°C to +200°C
Operating Junction Temperature	+200°C
Lead Temperature (Soldering, 10 sec time limit)	300°C

Maximum Power Dissipation

Device Dissipation @ Free Air Temperature	300 mW
Linear Derating	1.7 mW/°C

Maximum Voltages & Current

V_{GS} Gate to Source Voltage	-25 V
V_{GD} Gate to Drain Voltage	-25 V
I_G Gate Current	10 mA

PIN CONFIGURATION

TO-72

CHIP TOPOGRAPHY

5011

NOTE: SUBSTRATE IS GATE

ORDERING INFORMATION

TO-72	WAFER	DICE
2N5397	2N5397/W	2N5397/D
2N5398	2N5398/W	2N5398/D

1

ELECTRICAL CHARACTERISTICS (25°C unless otherwise noted)

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

Note 1: Pulse test duration = 2ms