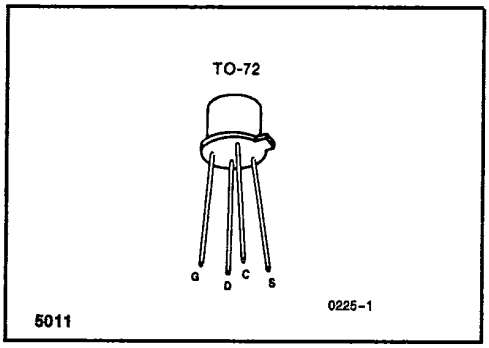
T-31-25

2N5397, 2N5398
N-Channel JFET
High Frequency Amplifier

INTERSIL

FEATURES
- G_{ps} = 15dB Minimum (Common Gate) at 450MHz
- Low Noise
- Low Capacitance

PIN CONFIGURATION



ABSOLUTE MAXIMUM RATINGS

(T_A = 25°C unless otherwise noted)

Drain-Gate Voltage	25V
Drain-Source Voltage	25V
Continuous Forward Gate Current	10mA
Storage Temperature Range	−65°C to +200°C
Operating Temperature Range	−55°C to +150°C
Lead Temperature (Soldering, 10sec)	+300°C
Power Dissipation	300mW
Derate above 25°C	2.4mW/°C

NOTE: *Stresses above those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. These are stress ratings only and functional operation of the device at these or any other conditions above those indicated in the operational sections of the specifications is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.*

ORDERING INFORMATION

TO-72
2N5397
2N5398

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise specified)

Symbol	Parameter	Test 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
			T_A = 150°C		−0.1		−0.1	µA
BV_{GSS}	Gate-Source Breakdown Voltage	V_{DS} = 0, I_G = −1µA		−25		−25		V
$V_{GS(off)}$	Gate-Source Cutoff Voltage	V_{DS} = 10V, I_D = 1nA		−1.0	−6.0	−1.0	−6.0	
I_{DSS}	Saturation Drain Current (Note 1)	V_{DS} = 10V, V_{DS} = 0		10.	30	5	40	mA
$V_{GS(f)}$	Gate-Source Forward Voltage	V_{DS} = 0, I_G = 1mA			1		1	V
g_{fs}	Common-Source Forward Transconductance (Note 1)	V_{DS} = 10V, I_D = 10mA	f = 1kHz	6000	10,000			µs
		V_{DS} = 10V, V_{GS} = 0				5500	10,000	
g_{oss}	Common-Source Output Conductance	V_{DS} = 10V, I_D = 10mA			200			
		V_{DS} = 10V, V_{GS} = 0					400	
C_{rss}	Common-Source Reverse Transfer Capacitance (Note 2)	V_{DS} = 10V, I_D = 10mA	f = 1MHz		1.2			pF
		V_{DS} = 10V, V_{GS} = 0					1.3	
C_{iss}	Common-Source Input Capacitance (Note 2)	V_{DG} = 10V, I_D = 10mA			5.0			
		V_{DS} = 10V, V_{GS} = 0					5.5	

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NOTE: All typical values have been characterized but are not tested.

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INTERSIL

T-31-25

ELECTRICAL CHARACTERISTICS (Continued) (T_A = 25°C unless otherwise specified)

Symbol	Parameter	Test Conditions		2N5397		2N5398		Units
				Min	Max	Min	Max	
g_{iss}	Common-Source Input Conductance (Note 2)	V_{DG} = 10V, I_D = 10mA	f = 450MHz		2000			µs
		V_{DG} = 10V, V_{GS} = 0					3000	
g_{oss}	Common-Source Output Conductance (Note 2)	V_{DG} = 10V, I_D = 10mA			400			
		V_{DS} = 10V, V_{GS} = 0					500	
g_{fs}	Common-Source Forward Transconductance (Note 1, 2)	V_{DG} = 10V, I_D = 10mA		5500	9000			
		V_{DS} = 10V, V_{GS} = 0				5000	10,000	
G_{ps}	Common-Source Power Gain (neutralized)	V_{DG} = 10V, I_D = 10mA (Note 2)		15				dB
NF	Common-Source, Spot Noise Figure (neutralized)				3.5			

NOTES: 1. Pulse test duration = 2ms
2. For design reference only, not 100% tested.

NOTE: All typical values have been characterized but are not tested.