

2N5397, 2N5398

N-Channel Silicon Junction Field-Effect Transistor

- Low-Noise
- High Power Gain
- High Transconductance
- Mixers
- Oscillators
- VHF Amplifiers

Absolute maximum ratings at $T_A = 25^\circ\text{C}$

Reverse Gate Source & Reverse Gate Drain Voltage	– 25 V
Drain Source Voltage	25 V
Continuous Forward Gate Current	10 mA
Continuous Device Power Dissipation	300 mW
Power Derating	1.7 mW/°C

At 25°C free air temperature:

Static Electrical Characteristics

		2N5397		2N5398		Process NJ26L	
		Min	Max	Min	Max	Unit	Test Conditions
Gate Source Breakdown Voltage	$V_{(BR)GSS}$	– 25		– 25		V	$I_G = -1\ \mu\text{A}$, $V_{DS} = \emptyset\text{V}$
Gate Source Forward Voltage	$V_{GS(F)}$		1		1	V	$I_G = 1\ \text{mA}$, $V_{DS} = \emptyset\text{V}$
Gate Reverse Current	I_{GSS}		– 0.1		– 0.1	nA	$V_{GS} = -15\text{V}$, $V_{DS} = \emptyset\text{V}$
			– 0.1		– 0.1	μA	$V_{GS} = -15\text{V}$, $V_{DS} = \emptyset\text{V}$, $T_A = 150^\circ\text{C}$
Gate Source Cutoff Voltage	$V_{GS(OFF)}$	– 1	– 6	– 1	– 6	V	$V_{DS} = 10\text{V}$, $I_D = 1\ \text{nA}$
Drain Saturation Current (Pulsed)	I_{DSS}	10	30	5	40	mA	$V_{DS} = 10\text{V}$, $V_{GS} = \emptyset\text{V}$

Dynamic Electrical Characteristics

Common Source Forward Transconductance	g_{fs}	5.5	9	5	10	mS	$V_{DG} = 10\text{V}$, $I_D = 10\ \text{mA}$	$f = 450\ \text{MHz}$
Common Source Forward Transfer Admittance	$ Y_{fs} $	6	10	5.5	10	mS	$V_{DS} = 10\text{V}$, $I_D = 10\ \text{mA}$	$f = 1\ \text{kHz}$
Common Source Output Conductance	$ g_{os} $		0.4		0.5	mS	$V_{DG} = 10\text{V}$, $I_D = 10\ \text{mA}$	$f = 450\ \text{MHz}$
Common Source Input Admittance	$ Y_{os} $		0.2		0.4	mS	$V_{DS} = 10\text{V}$, $I_D = 10\ \text{mA}$	$f = 1\ \text{kHz}$
Common Source Input Conductance	g_{is}		2		3	mS	$V_{DG} = 10\text{V}$, $I_D = 10\ \text{mA}$	$f = 450\ \text{MHz}$
Common Source Input Capacitance	C_{iss}		5		5.5	pF	$V_{DG} = 15\text{V}$, $V_{GS} = \emptyset\text{V}$	$f = 1\ \text{kHz}$
Common Source Reverse Transfer Capacitance	C_{rss}		1.2		1.3	pF	$V_{DG} = 15\text{V}$, $V_{GS} = \emptyset\text{V}$	$f = 1\ \text{kHz}$

TO-72 Package

Dimensions in Inches (mm)

Pin Configuration

1 Source, 2 Drain, 3 Gate, 4 Case

Surface Mount

SMP5397, SMP5398



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