

B-68

01/99

U311

N-Channel Silicon Junction Field-Effect Transistor

- Mixer
- Oscillator
- VHF/UHF Amplifier

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

Reverse Gate Source & Reverse Gate Drain Voltage	- 25 V
Continuous Forward Gate Current	10 mA
Continuous Device Power Dissipation	300 mW
Power Derating	2.4 mW/°C

At 25°C free air temperature:

Static Electrical Characteristics

		U311			Process NJ72L	
		Min	Typ	Max	Unit	Test Conditions
Gate Source Breakdown Voltage	$V_{(BR)GSS}$	- 25			V	$I_G = -1 \mu\text{A}, V_{DS} = 0\text{V}$
Gate Reverse Current	I_{GSS}			- 150	pA	$V_{GS} = -15\text{V}, V_{DS} = 0\text{V}$
				- 150	nA	$V_{GS} = -15\text{V}, V_{DS} = 0\text{V}$ $T_A = 150^\circ\text{C}$
Gate Source Cutoff Voltage	$V_{GS(OFF)}$	- 1		- 6	V	$V_{DS} = 10\text{V}, I_D = 1 \text{nA}$
Gate Source Forward Voltage	$V_{GS(F)}$			1	V	$V_{DS} = 0\text{V}, I_G = 1 \text{mA}$
Drain Saturation Current (Pulsed)	I_{DSS}	20		60	mA	$V_{DS} = 10\text{V}, V_{GS} = 0\text{V}$

Dynamic Electrical Characteristics

Common Gate Forward Transconductance	g_{fg}	1000	17000		μS	$V_{DS} = 10\text{V}, I_D = 10 \text{mA}$	$f = 1 \text{kHz}$
Common Gate Output Conductance	g_{og}			250	μS	$V_{DS} = 10\text{V}, I_D = 10 \text{mA}$	$f = 1 \text{kHz}$
Gate Drain Capacitance	C_{dg}			2.5	pF	$V_{DS} = 10\text{V}, I_D = 10 \text{mA}$	$f = 1 \text{MHz}$
Gate Source Capacitance	C_{gs}			5	pF	$V_{DS} = 10\text{V}, I_D = 10 \text{mA}$	$f = 1 \text{MHz}$

TO-72 Package

Dimensions in Inches (mm)

Pin Configuration

1 Source, 2 Drain, 3 Gate, 4 Case

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