

3875081 G E SOLID STATE

J308-J310

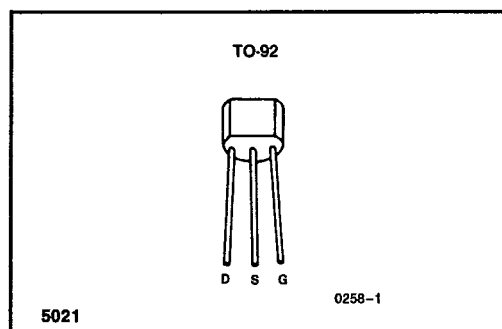
N-Channel JFET

High Frequency Amplifier

FEATURES

- Industry Standard Part in Low Cost Plastic Package
- High Power Gain
- Low Noise
- Dynamic Range Greater Than 100dB
- Easily Matched to 75Ω Input

PIN CONFIGURATION



APPLICATIONS

- VHF/UHF Amplifiers
- Oscillators
- Mixers

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	—55°C to +150°C
Operating Temperature Range	—55°C to +135°C
Lead Temperature (Soldering, 10sec)	+300°C
Power Dissipation	360mW
Derate above 25°C	3.27mW/°C

ORDERING INFORMATION

TO-92

J3XX

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.

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

Symbol	Parameter	Test Conditions	J308			J309			J310			Units
			Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	
BV _{GSS}	Gate-Source Breakdown Voltage	I _G = -1μA, V _{DS} = 0	-25			-25			-25			V
I _{GSS}	Gate Reverse Current	V _{GS} = -15V, V _{DS} = 0			-1.0			-1.0			-1.0	nA
		T _A = 125°C			-1.0			-1.0			-1.0	μA
V _{GS(off)}	Gate-Source Cutoff Voltage	V _{DS} = 10V, I _D = 1nA	-1.0		-6.5	-1.0		-4.0	-2.0		-6.5	V
I _{DSS}	Saturation Drain Current (Note 1)	V _{DS} = 10V, V _{GS} = 0	12		60	12		30	24		60	mA
V _{GS(0)}	Gate-Source Forward Voltage	V _{DS} = 0, I _G = 1mA			1.0			1.0			1.0	V
g _{fs}	Common-Source Forward Transconductance	V _{DS} = 10V, f = 1kHz, I _D = 10mA (Note 2)	8,000	17,000		10,000	17,000		8,000	17,000		μS
g _{os}	Common-Source Output Conductance				250			250			250	
g _{fg}	Common-Gate Forward Transconductance			13,000			13,000			12,000		
g _{og}	Common Gate Output Conductance			150			150			150		

INTERMIL'S SOLE AND EXCLUSIVE WARRANTY OBLIGATION WITH RESPECT TO THIS PRODUCT SHALL BE THAT STATED IN THE WARRANTY ARTICLE OF THE CONDITION OF SALE. THE WARRANTY SHALL BE EXCLUSIVE AND SHALL BE IN LIEU OF ALL OTHER WARRANTIES, EXPRESS, IMPLIED OR STATUTORY, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR USE.

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

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3875081 G E SOLID STATE

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J308-J310

J308-J310**INTERSIL**

T-31-25

ELECTRICAL CHARACTERISTICS (Continued) ($T_A = 25^\circ\text{C}$ unless otherwise specified)

Symbol	Parameter	Test Conditions		J308			J309			J310			Units
				Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	
C _{gd}	Gate-Drain Capacitance	V _{DS} = 10V,	f = 1MHz	1.8	2.5		1.8	2.5		1.8	2.5	pF	
C _{gs}	Gate-Source Capacitance	V _{GS} = -10V	(Note 2)	4.3	5.0		4.3	5.0		4.3	5.0		
e _n	Equivalent Short-Circuit Input Noise Voltage	V _{DS} = 10V, I _D = 10mA	f = 100Hz (Note 2)	10			10			10		nV √Hz	
Re(v _{is})	Common-Source Forward Transconductance	V _{DS} = 10V, I _D = 10mA (Note 2)	f = 105MHz	12			12			12		μS	
Re(v _{ig})	Common-Gate Input Conductance			14			14			14			
Re(v _{is})	Common-Source Input Conductance			0.4			0.4			0.4			
Re(v _{os})	Common-Source Output Conductance			0.15			0.15			0.15			
G _{pg}	Common-Gate Power Gain at Noise Match			16			16			16		dB	
NF	Noise Figure			1.5			1.5			1.5			
G _{pg}	Common-Gate Power Gain at Noise Match		f = 450MHz	11			11			11			
NF	Noise Figure				2.7			2.7			2.7		

NOTES: 1. Pulse test PW 300 μs , duty cycle $\leq 3\%$.
 2. For design reference only, not 100% tested.

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