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CORPORATION

N-Channel JFET
High Frequency Amplifier

J308 – J310 / SST308 – SST310

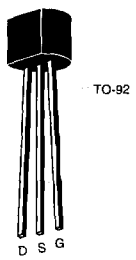
FEATURES

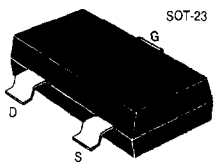
- **Industry Standard Part in Low Cost Plastic Package**
- **High Power Gain**
- **Low Noise**
- **Dynamic Range Greater Than 100dB**
- **Easily Matched to 75Ω Input**

APPLICATIONS

- **VHF/UHF Amplifiers**
- **Oscillators**
- **Mixers**

PIN CONFIGURATION





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PRODUCT MARKING (SOT-23)	
SST308	Z08
SST309	Z09
SST310	Z10

ABSOLUTE MAXIMUM RATINGS

(T_A = 25°C unless otherwise specified)

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

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

Part	Package	Temperature Range
J308-310	Plastic TO-92	-55°C to +135°C
SST308-310	Plastic SOT-23	-55°C to +135°C

For Sorted Chips in Carriers see U308 series.

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

SYMBOL	PARAMETER	308			309			310			UNITS	TEST CONDITIONS	
		MIN	TYP	MAX	MIN	TYP	MAX	MIN	TYP	MAX			
BV_{GSS}	Gate-Source Breakdown Voltage	-25			-25			-25			V	I_G = -1μA, V_{DS} = 0	
I_{GSS}	Gate Reverse Current			-1.0			-1.0			-1.0	nA	V_{GS} = -15V,	
				-1.0			-1.0			-1.0	μA	V_{DS} = 0	T_A = 125°
$V_{GS(off)}$	Gate-Source Cutoff Voltage	-1.0		-6.5	-1.0		-4.0	-2.0		-6.5	V	VDS = 10V, I_D = 1nA	
I_{DSS}	Saturation Drain Current (Note 1)	12		60	12		30	24		60	mA	V_{DS} = 10V, V_{GS} = 0	
$V_{GS(f)}$	Gate-Source Forward Voltage			1.0			1.0			1.0	V	V_{DS} = 0, I_G = 1mA	
g_{fs}	Common-Source Forward Transconductance	8,000	17,000		10,000	17,000		8,000	17,000		μS	V_{DS} = 10V I_D = 10mA (Note 2)	f = 1kHz
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				

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

SYMBOL	PARAMETER	308			309			310			UNITS	TEST CONDITIONS	
		MIN	TYP	MAX	MIN	TYP	MAX	MIN	TYP	MAX			
C_{gd}	Gate-Drain Capacitance		1.8	2.5		1.8	2.5		1.8	2.5	pF	V_{DS} = 10V, V_{GS} = -10	f = 1MHz (Note 2)
C_{gs}	Gate-Source Capacitance		4.3	5.0		4.3	5.0		4.3	5.0			
e_n	Equivalent Short-Circuit Input Noise Voltage		10			10			10		$\frac{nV}{\sqrt{Hz}}$	V_{DS} = 10V, I_D = 10mA	f = 100Hz (Note 2)
$Re_{(Vfs)}$	Common-Source Forward Transconductance		12			12			12		μS	V_{DS} = 10V, I_D = 10mA (Note 2)	f = 105MHz
$Re_{(Vig)}$	Common-Gate Input Conductance		14			14			14				
$Re_{(Vis)}$	Common-Source Input Conductance		0.4			0.4			0.4				
$Re_{(Vos)}$	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		11			11			11				f = 450MHz
NF	Noise Figure		2.7			2.7			2.7				

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