

SONY

2SK121

Silicon N-Channel Junction FET

T-29-25

Description

The 2SK121 is a junction type FET which has the feature of obtaining high voltage high gm and low noise which covers from the Audio band to the VHF band.

Application

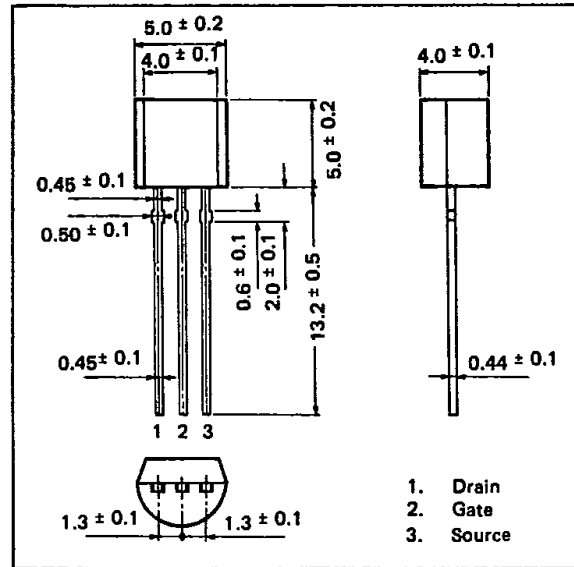
For low frequency, low noise amplifier and high-frequency amplifier.

Structure

N-channel Silicon junction FET

Package Outline

Unit mm



Absolute Maximum Ratings (Ta=25°C)

• Drain-to-Gate Voltage	V _{DG0}	30	V
• Source-to-Gate Voltage	V _{SG0}	30	V
• Drain current	I _D	20	mA
• Gate current	I _G	5	mA
• Allowable power dissipation	P _D	300	mW
• Junction temperature	T _j	100	°C
• Storage temperature	T _{stg}	-50 to +120	°C

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Electrical Characteristics

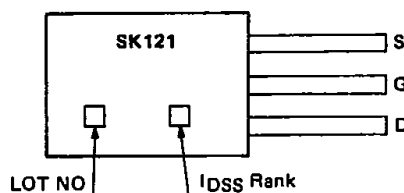
(Ta=25°C)

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Gate to Source Voltage	V _{GSS}	I _g =10μA, V _{DS} =0V	-30			V
Gate Cutoff Current	I _{GSS}	V _{Gs} =-15V, V _{DS} =0V			-1.0	nA
Drain Current	I _{DSS}	V _{DS} =10V, V _{Gs} =0V	0.9		14.3	mA
Gate to Source Cutoff Voltage	V _{Gs(OFF)}	V _{DS} =10V, I _D =30μA	-0.18		-1.49	V
Forward Transfer Admittance	Y _{fs}	V _{DS} =10V, V _{Gs} =0V, f=1kHz	6.3			mS
Junction to Ambient Thermal Resistance	θ _{JA}				250	°C/W

Mark

(Standard subdivision)

Rank	I _{DSS} (V _{DS} =10V, V _{Gs} =0V)
2	2.7 to 5.5 mA
3	4.5 to 7.7 mA
4	6.3 to 9.9 mA
5	8.1 to 12.1 mA



Circuit Design Reference Material

(Ta=25°C)

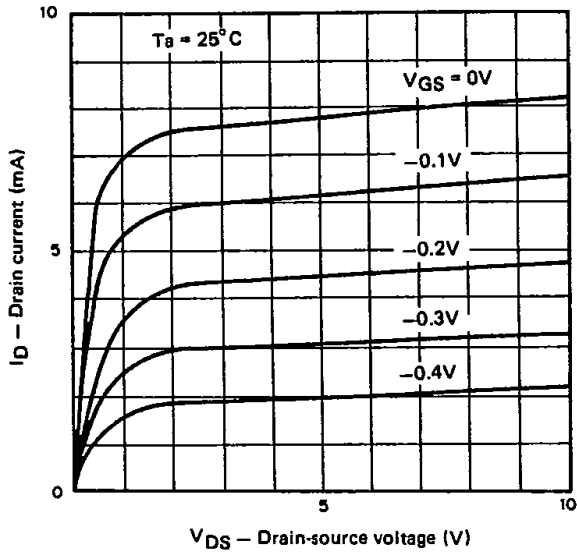
Item	Symbol	Condition	Typ.	Unit
Input Admittance Y _{11s}	r _{ip}	f=100MHz	1.2	kΩ
	C _{ip}	V _{DS} =10V, V _{Gs} =0V	13	pF
Output Admittance Y _{22s}	r _{op}	f=100MHz		kΩ
	C _{op}	V _{DS} =10V, V _{Gs} =0V	2.7	pF
Reverse Transfer Capacitance	C _{rss}	f=1MHz, V _{DS} =10V, V _{Gs} =0V	2.4	pF
Short Circuit Equivalent Input Noise Voltage	e _n	V _{Gs} =0V, f=1kHz V _{DS} =10V, R _g =10kΩ	13	nV/√Hz

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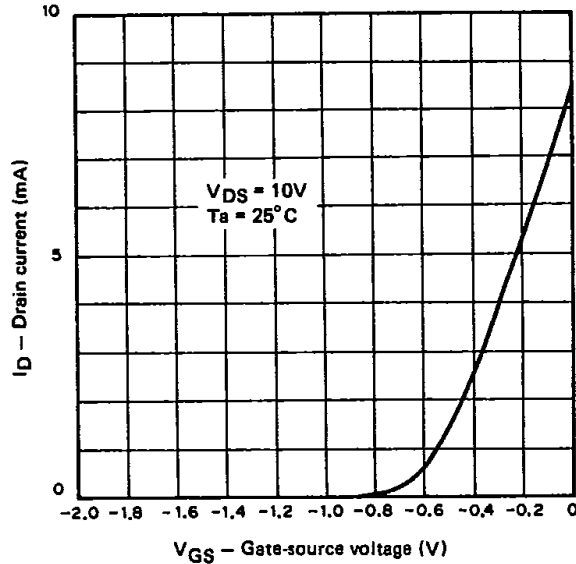
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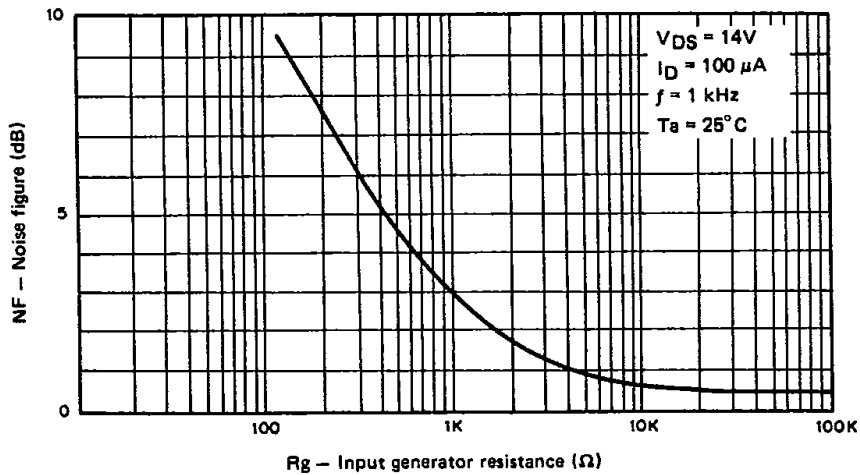
Drain Current vs. Drain-Source Voltage



Drain Current vs. Gate-Source Voltage



Noise Figure vs. Input Generator Resistance

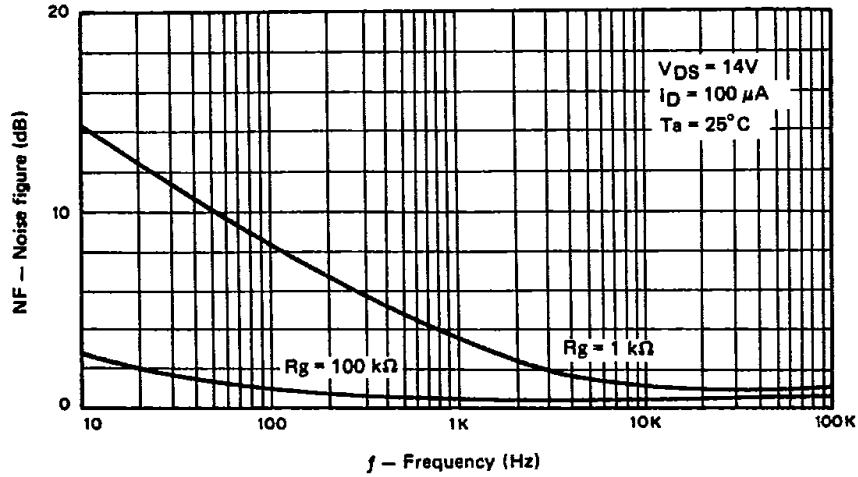


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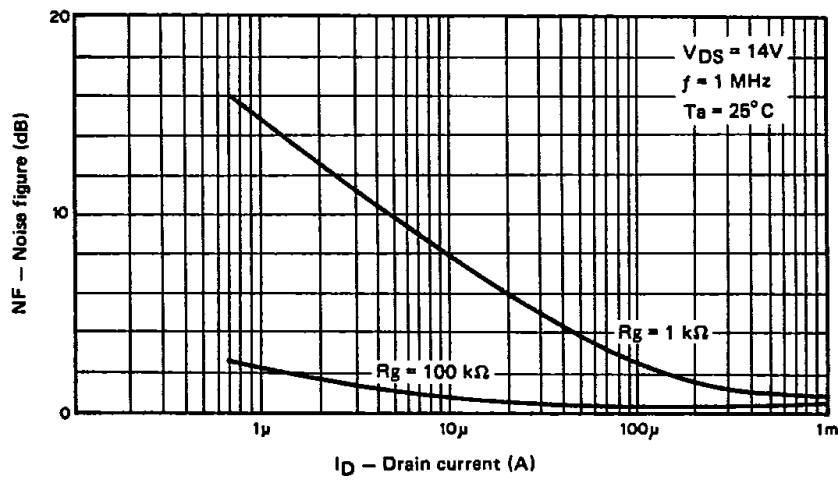
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Noise Figure vs. Frequency



Noise Figure vs. Drain Current

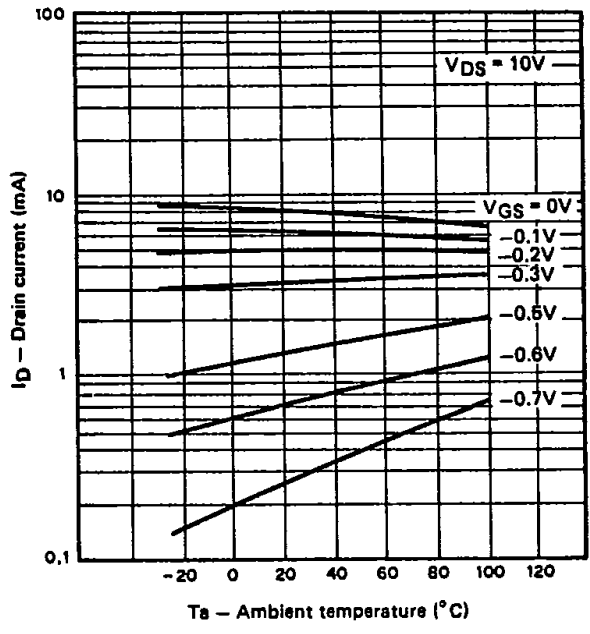


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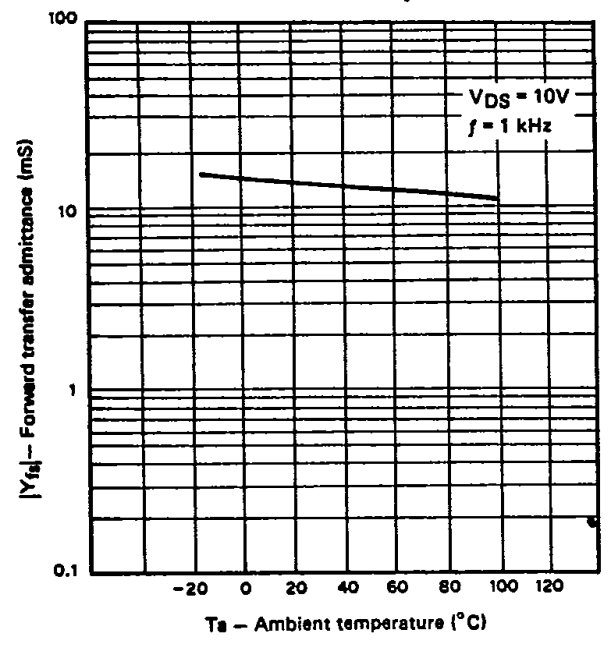
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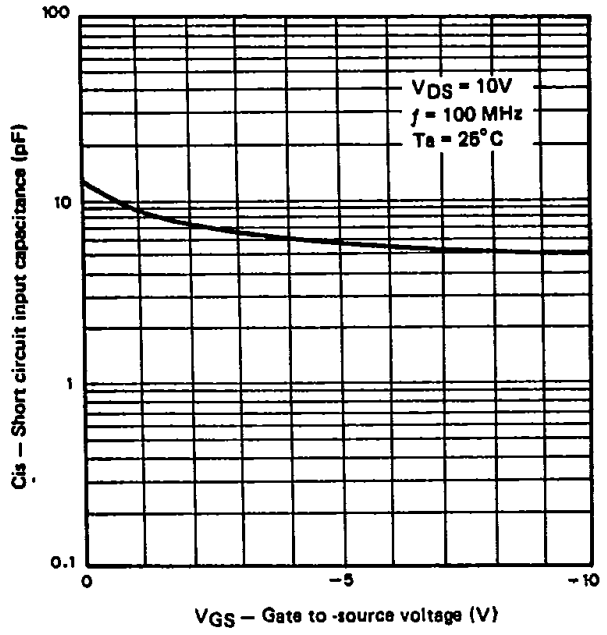
Drain Current vs. Temperature



Forward Transfer Admittance vs. Ambient Temperature



Short Circuit Input Capacitance vs. Gate-Source Voltage



Reverse Transfer Capacitance vs. Drain-Source Voltage

