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.

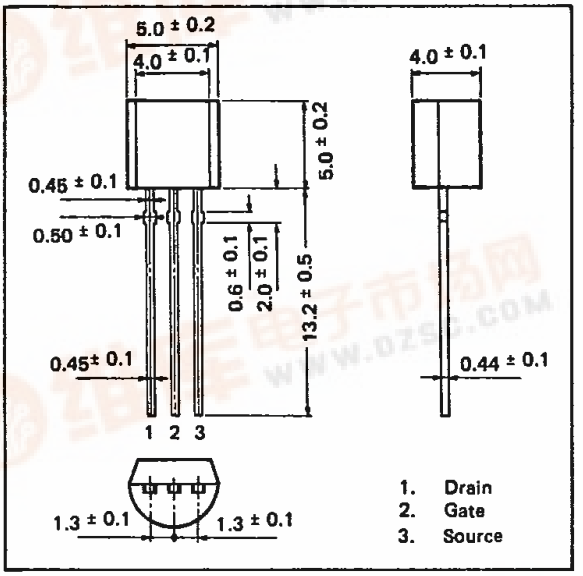
Application

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_{DGO}	30	V
• Source-to-Gate Voltage	V_{SGO}	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

Electrical Characteristics

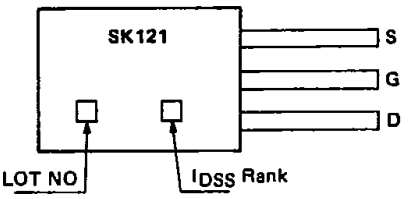
(Ta=25°C)

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	$\theta_{j\text{-}a}$				250	°C/W

(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

Mark

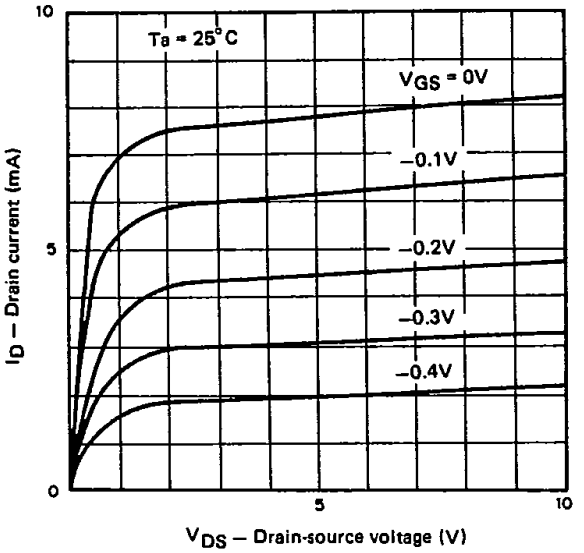


Circuit Design Reference Material

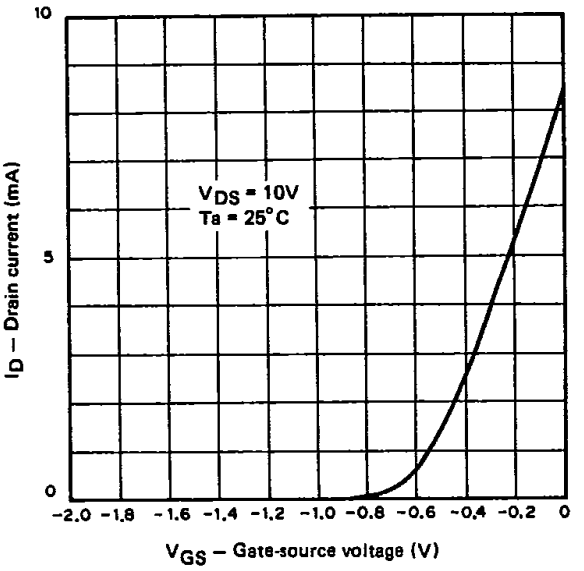
(Ta=25°C)

Item	Symbol	Condition	Typ.	Unit
Input Admittance Y_{11S}	r_{ip}	f=100MHz V_{DS}=10V, V_{GS}=0V	1.2	kΩ
	C_{ip}		13	pF
Output Admittance Y_{22S}	r_{op}	f=100MHz V_{DS}=10V, V_{GS}=0V		kΩ
	C_{op}		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	$\bar{e}_n$	V_{GS}=0V, f=1kHz V_{DS}=10V, Rg=10kΩ	13	nv/√Hz

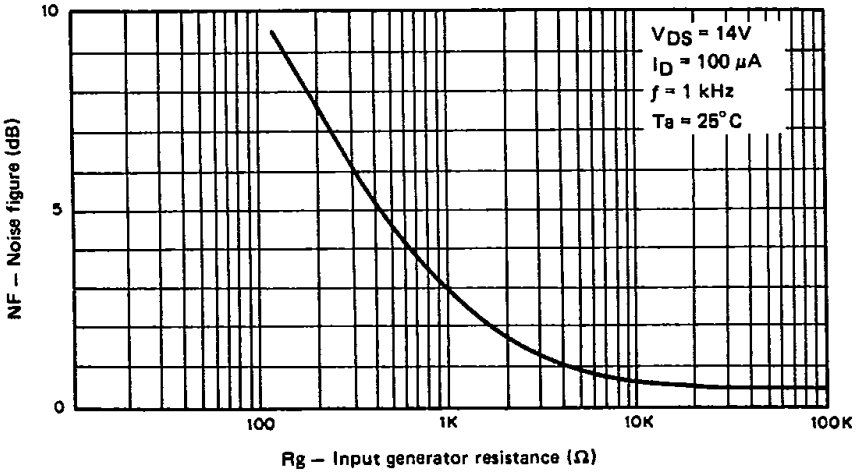
Drain Current vs. Drain-Source Voltage



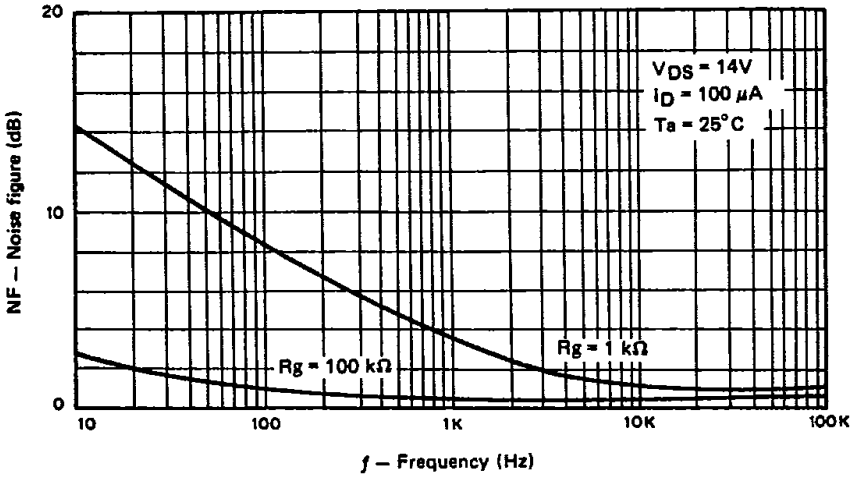
Drain Current vs. Gate-Source Voltage



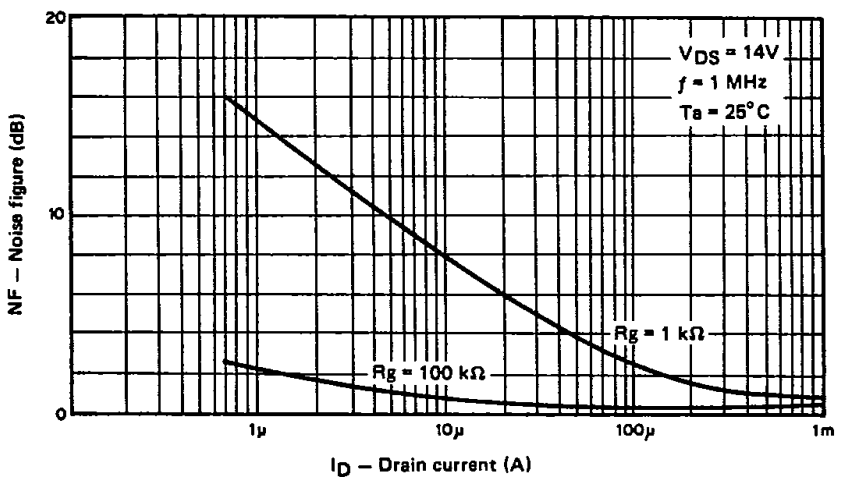
Noise Figure vs. Input Generator Resistance



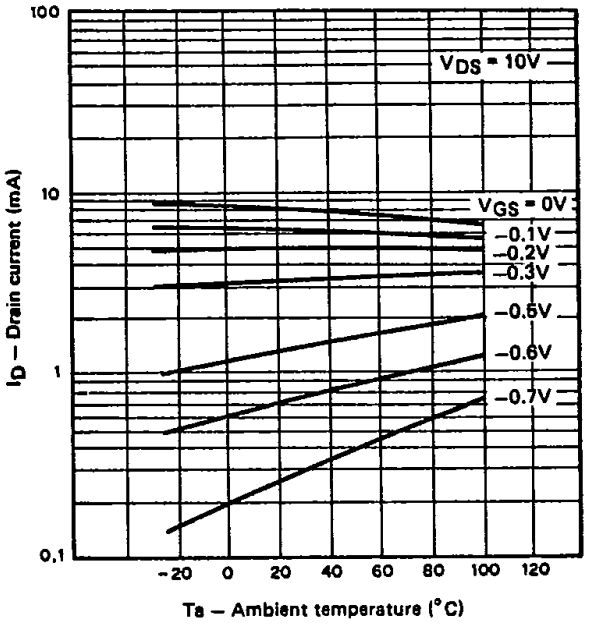
Noise Figure vs. Frequency



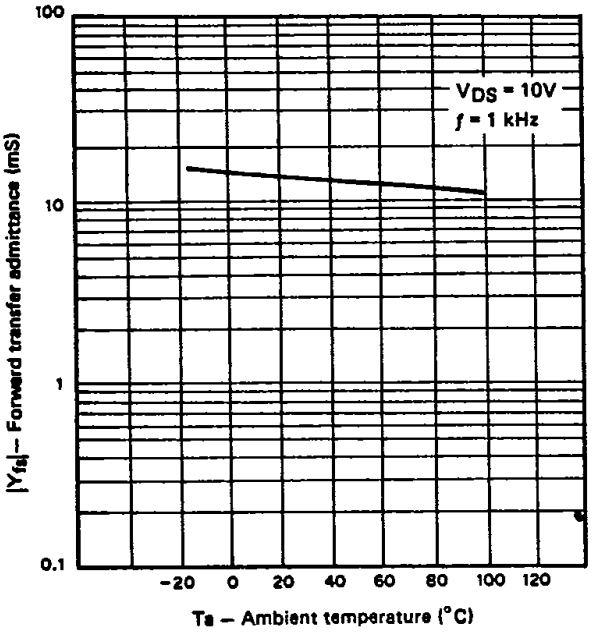
Noise Figure vs. Drain Current



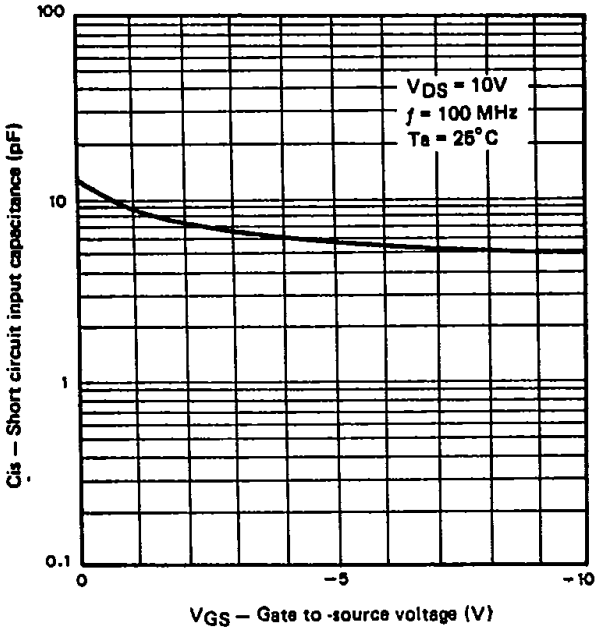
Drain Current vs. Temperature



Forward Transfer Admittance vs. Ambient Temperature



Short Circuit Input Capacitance vs. Gate-Source Voltage



Reverse Transfer Capacitance vs. Drain-Source Voltage