T-31-25

NJX6410 Series

■ Description

NJX6410 series GaAlAs/GaAs with N-channel Schottky barrier recessed gate structure and super low noise are designed for S- to K-band amplifiers. These devices use advanced process technology to achieve excellent low noise and high gain. These devices are available in a hermetically sealed ceramic package suited for microstrip circuits.

■ Absolute Maximum Ratings (Ta=25°C)

Gate to Drain Voltage	V_{GDO}	−3V
Gate to Surce Voltage	V_{GSO}	−3V
Drain Current	I_D	60mA
Total Power Dissipation	P_T	160mW
Channel Temperature	Tch	125°C
Storage Temperature	Tstg	−55+125°C

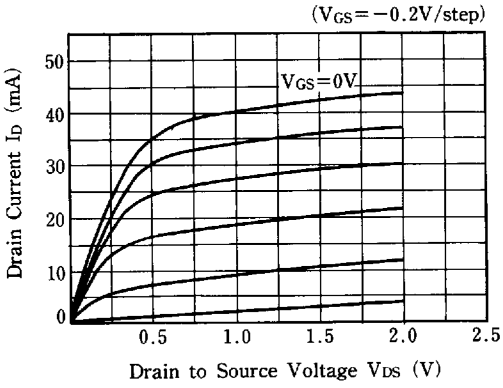
■ Electrical Characteristics (Ta=25°C)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Saturated Drain Current	I_{DSS}	$V_{DS}=2V$, $V_{GS}=0V$	10	30	60	mA
Transconductance	g_m	$I_D=7.5mA$, $V_{DS}=2V$	30	50	−	mS
Pinch-off Voltage	V_P	$V_{DS}=2V$, $I_D=500\mu A$	−0.2	−2.0	−	V
Gate to Source Leak Current	I_{GSS}	$V_{GS}=-2V$, $V_{DS}=0V$	−	−	10	μA
Gate to Drain Breakdown Voltage	$V_{(BR)GDO}$	$I_{GD}=-100\mu A$	−3	−	−	V
Gate to Source Breakdown Voltage	$V_{(BR)GSO}$	$I_{GS}=-100\mu A$	−3	−	−	V
Associated Gain	Ga	$V_{DS}=2V$, $I_D=7.5mA$, f=12GHz				dB
NJX6410B			9.0	−	−	
NJX6410C			9.0	−	−	
Minimum Noise Figure	NF_{min}	$V_{DS}=2V$, $I_D=7.5mA$, f=12GHz				dB
NJX6410B			1.2	−	−	
NJX6410C			1.4	−	−	

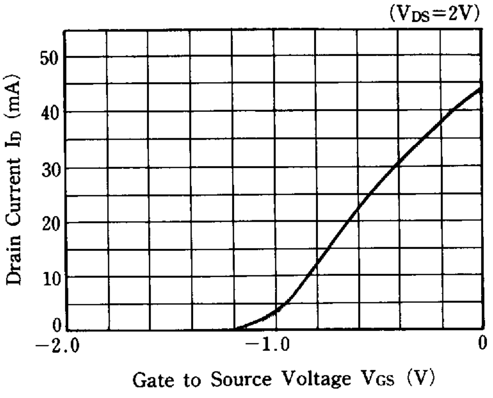
(Note) : Package Outline E

■ Typical Performance Characteristics (Ta=25°C)

Drain Current vs. Drain to Source Voltage



Drain Current vs. Gate to Source Voltage



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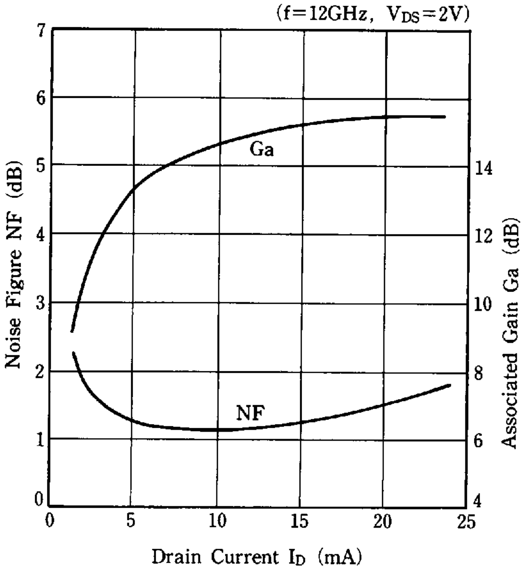
■ Typical Performance Characteristics (Ta=25°C)

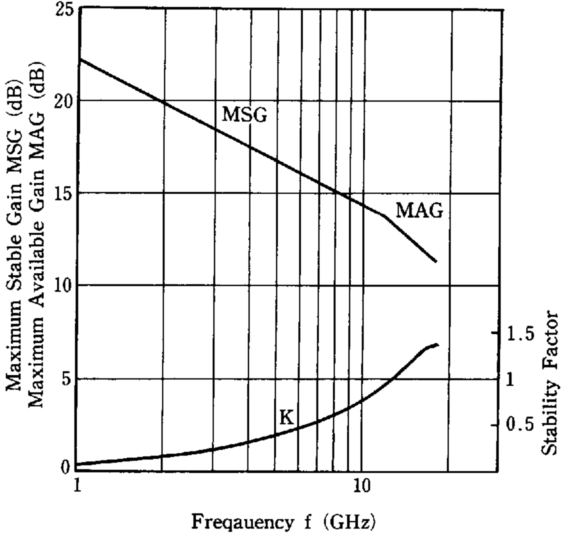
Noise Figure, Associated Gain vs. Drain Current

(f=12GHz, V_{DS}=2V)



MSG, MAG vs. Frequency

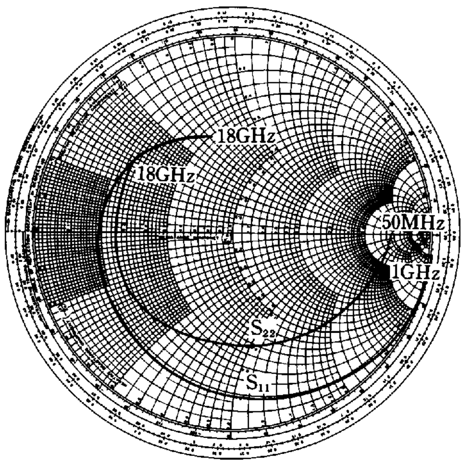
(V_{DS}=2V, I_D=7.5mA)



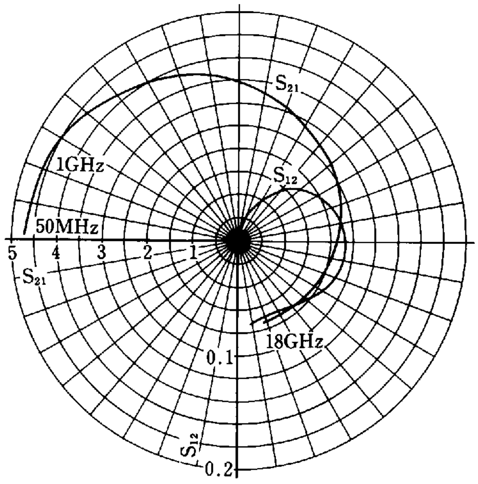
■ Admittance Characteristics

(V_{DS}=2V, I_D=7.5mA, Ta=25°C)

S_{11}, S_{22} vs. Frequency



S_{12}, S_{21} vs. Frequency



PACKAGE OUTLINE

T-91-20