

**2SK222**

Low-Frequency, Low Noise Amplifier Applications

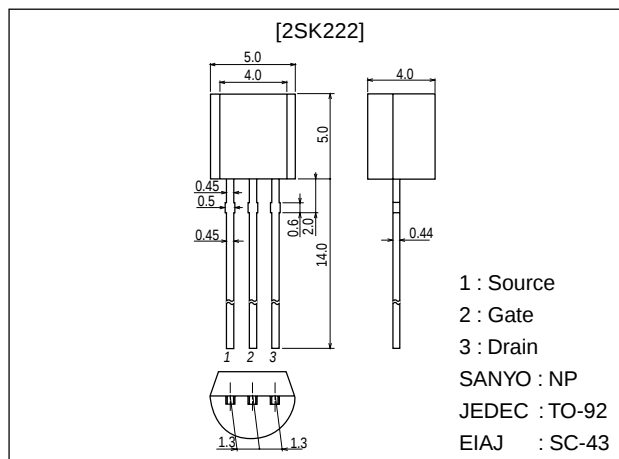
Features

- Ultralow noise figure.
- Large $|y_{fs}|$.
- Low gate leakage current.

Package Dimensions

unit:mm

2019B



Specifications

Absolute Maximum Ratings at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		40	V
Gate-to-Drain Voltage	V_{GDS}		-40	V
Gate Current	I_G		10	mA
Allowable Power Dissipation	P_D		300	mW
Junction Temperature	T_j		125	$^\circ\text{C}$
Storage Temperature	T_{stg}		-40 to +125	$^\circ\text{C}$

Electrical Characteristics at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Gate-to-Drain Breakdown Voltage	$V_{(BR)GDS}$	$I_G = -100\mu\text{A}$	-40			V
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS} = -20\text{V}$			-1.0	nA
Zero-Gate Voltage Drain Current	I_{DSS}^*	$V_{DS} = 10\text{V}, V_{GS} = 0$	0.6*		12.0*	mA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = 10\text{V}, I_D = 10\mu\text{A}$		0.5		V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS} = 10\text{V}, V_{GS} = 0, f = 1\text{kHz}$		17		mS
Input Capacitance	C_{iss}	$V_{DS} = 10\text{V}, V_{GS} = 0, f = 1\text{MHz}$		14		pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS} = 10\text{V}, V_{GS} = 0, f = 1\text{MHz}$		3.5		pF
Noise Figure	NF1	$V_{DS} = 10\text{V}, V_{GS} = 0, R_g = 1\text{k}\Omega, f = 100\text{Hz}$		1.0	3.0	dB
	NF2	$V_{DS} = 10\text{V}, V_{GS} = 0, R_g = 1\text{k}\Omega, f = 1\text{kHz}$		0.6	1.5	dB
Equivalent Input Noise Voltage	V_{NI}	$V_{DS} = 10\text{V}, V_{GS} = 0, R_g = 1\text{k}\Omega, f = 1\text{kHz}$		2		nV/ $\sqrt{\text{Hz}}$

* : The 2SK222 is classified by I_{DSS} as follows : (unit : mA).

0.6	C	1.5	1.2	D	3.0	2.5	E	6.0	5.0	F	12.0
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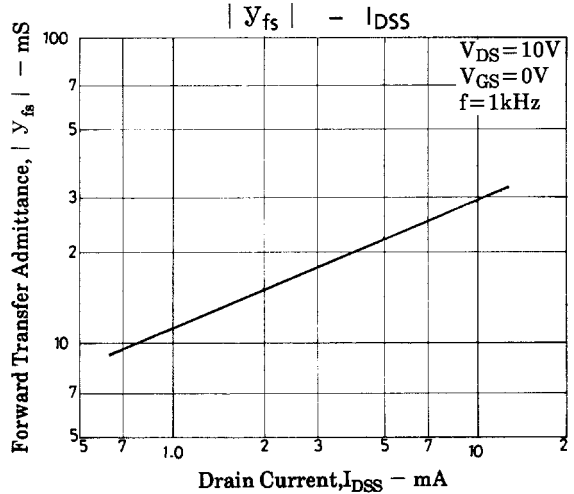
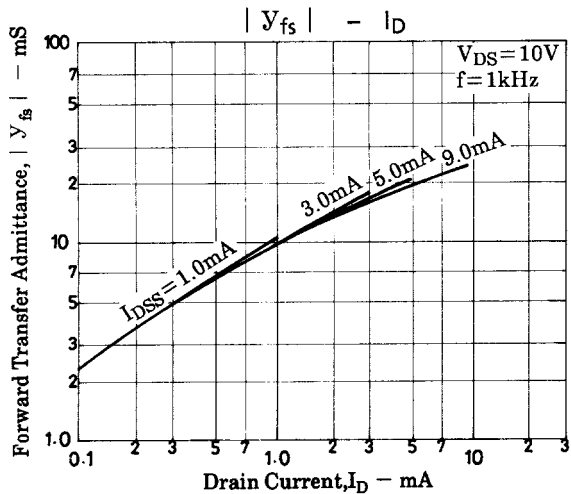
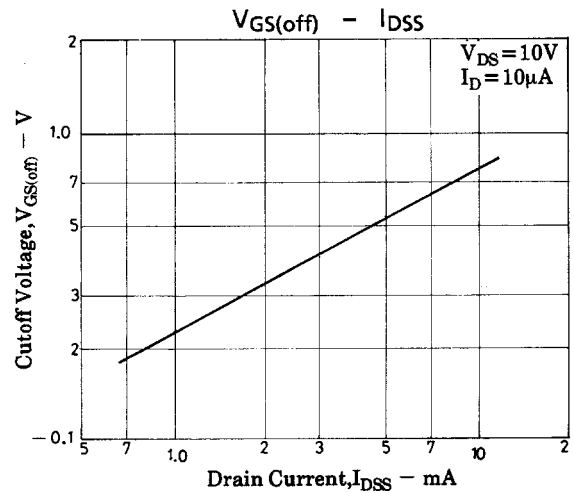
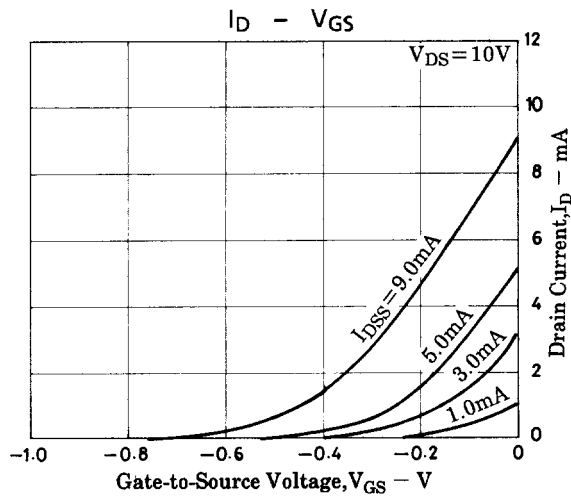
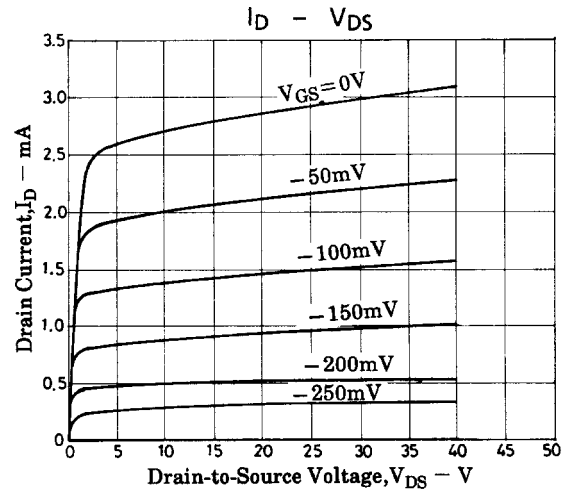
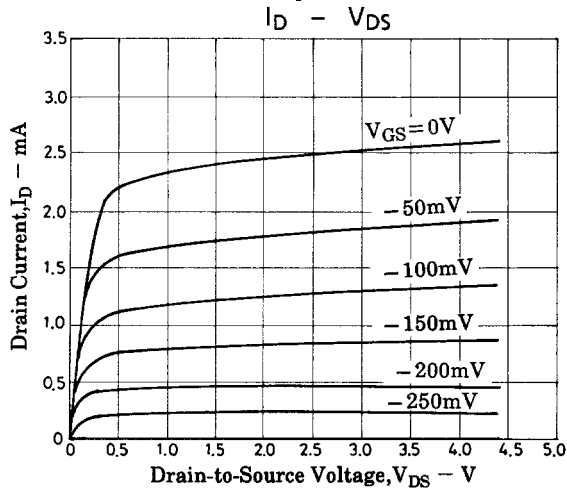
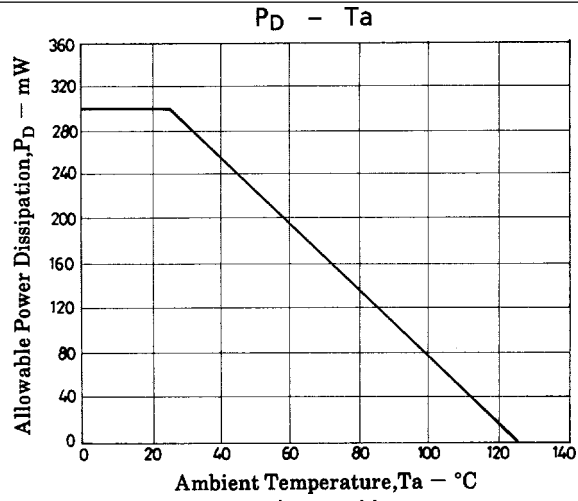
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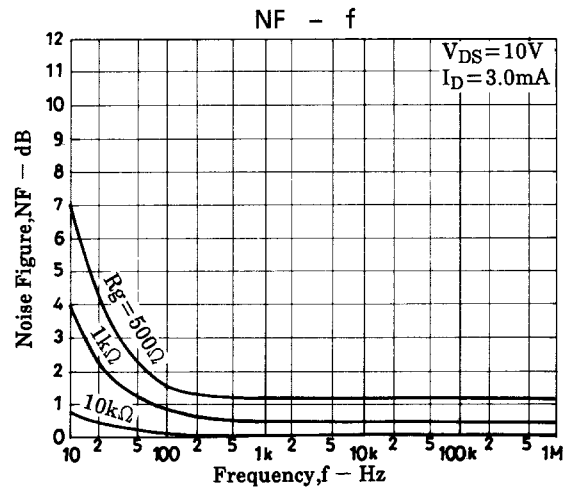
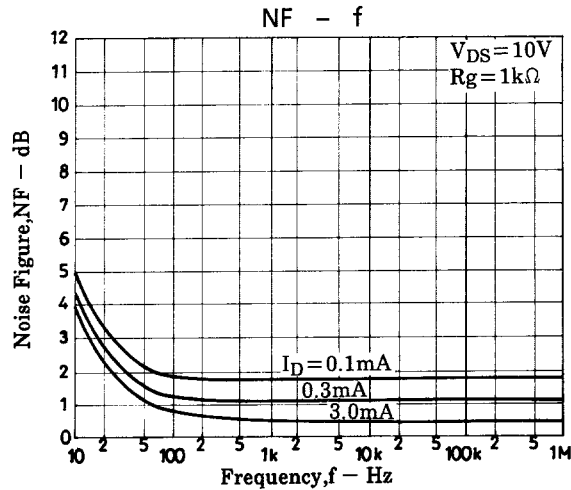
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SANYO Electric Co., Ltd. Semiconductor Company

TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

42099TH (KT)/90895MO (KOTO)6027KI/2075MW 8-3836 No.836-1/3





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