

TOSHIBA FIELD EFFECT TRANSISTOR SILICON N CHANNEL JUNCTION TYPE

2SK209

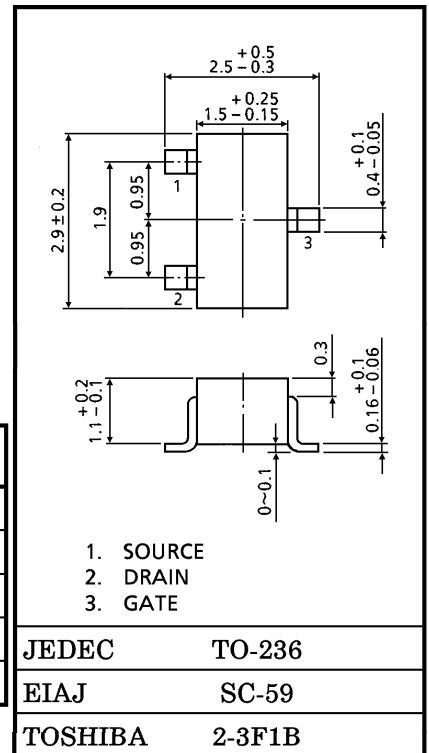
AUDIO FREQUENCY LOW NOISE AMPLIFIER APPLICATIONS

Unit in mm

- High $|Y_{fs}|$
: $|Y_{fs}| = 15\text{mS}$ (Typ.) at $V_{DS} = 10\text{V}$, $V_{GS} = 0$
- High Breakdown Voltage : $V_{GDS} = -50\text{V}$
- Low Noise
: $NF = 1.0\text{dB}$ (Typ.) at $V_{DS} = 10\text{V}$, $I_D = 0.5\text{mA}$, $f = 1\text{kHz}$, $R_G = 1\text{k}\Omega$
- High Input Impedance : $I_{GSS} = -1\text{nA}$ (Max.) at $V_{GS} = -30\text{V}$
- Small Package

MAXIMUM RATINGS ($T_a = 25^\circ\text{C}$)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Gate-Drain Voltage	V_{GDS}	-50	V
Gate Current	I_G	10	mA
Drain Power Dissipation	P_D	150	mW
Junction Temperature	T_j	125	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55~125	$^\circ\text{C}$



ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

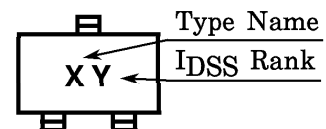
Weight : 0.012g

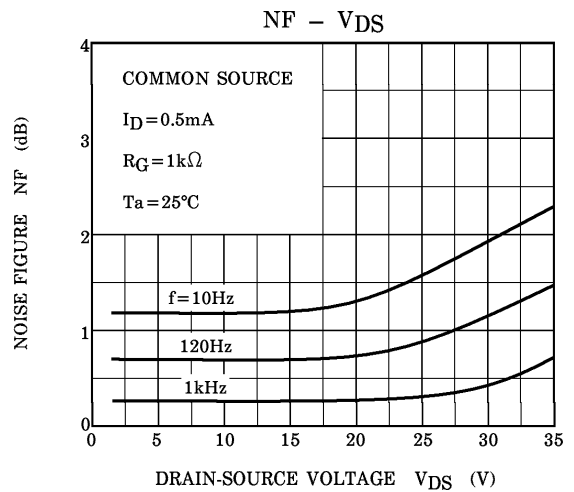
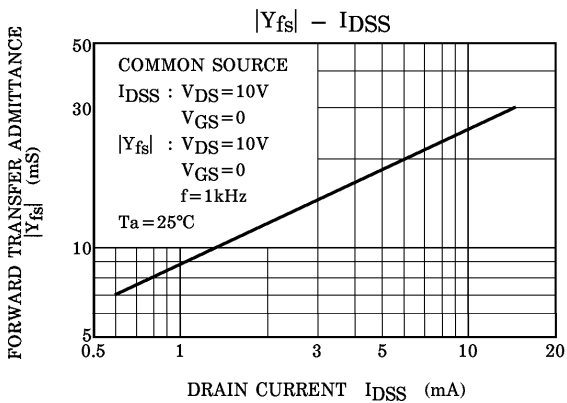
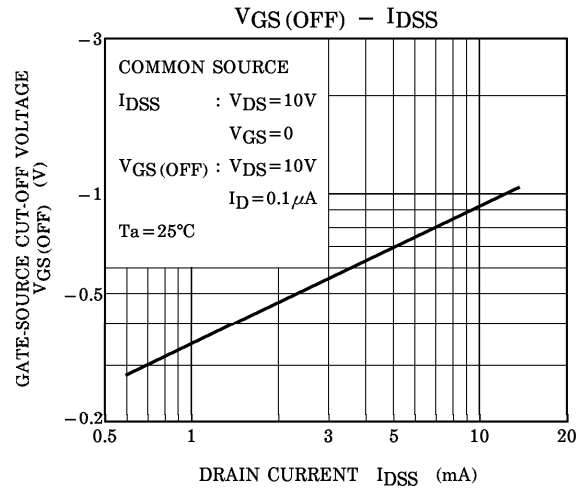
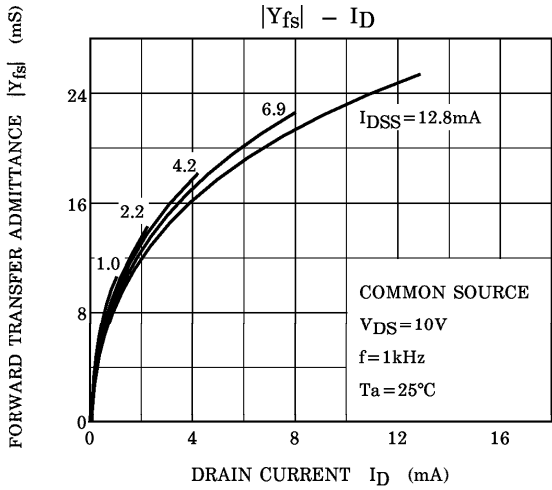
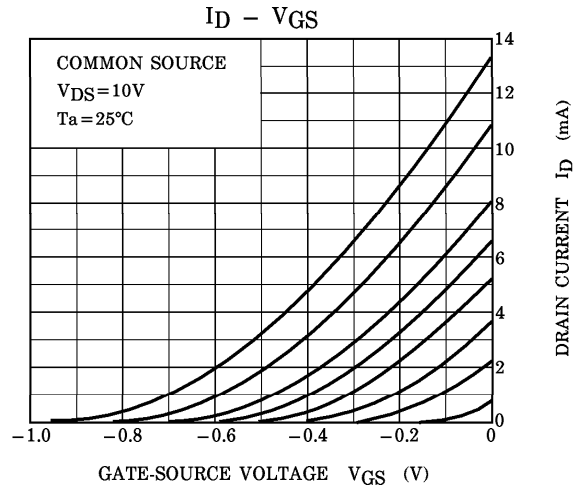
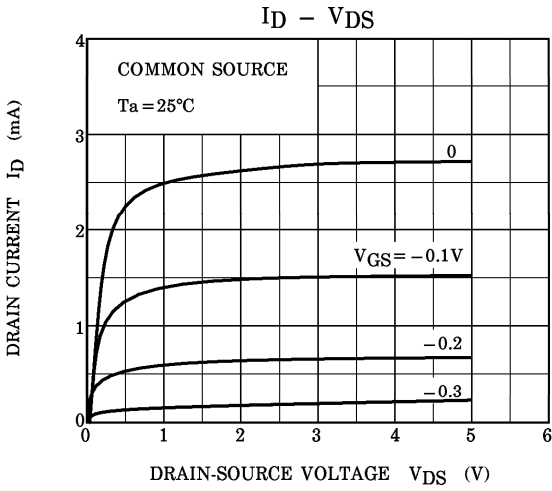
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate Cut-off Current	I_{GSS}	$V_{GS} = -30\text{V}$, $V_{DS} = 0$	—	—	-1.0	nA
Gate-Drain Breakdown Voltage	$V_{(BR)GDS}$	$V_{DS} = 0$, $I_G = -100\mu\text{A}$	-50	—	—	V
Drain Current	I_{DSS} (Note)	$V_{DS} = 10\text{V}$, $V_{GS} = 0$	1.2	—	14.0	mA
Gate-Source Cut-off Voltage	$V_{GS(OFF)}$	$V_{DS} = 10\text{V}$, $I_D = 0.1\mu\text{A}$	-0.2	—	-1.5	V
Forward Transfer Admittance	$ Y_{fs} $	$V_{DS} = 10\text{V}$, $V_{GS} = 0$, $f = 1\text{kHz}$	4.0	15	—	mS
Input Capacitance	C_{iss}	$V_{DS} = 10\text{V}$, $V_{GS} = 0$, $f = 1\text{MHz}$	—	13	—	pF
Reverse Transfer Capacitance	C_{rss}	$V_{DG} = 10\text{V}$, $I_D = 0$, $f = 1\text{MHz}$	—	3	—	pF
Noise Figure	NF (1)	$V_{DS} = 10\text{V}$, $R_G = 1\text{k}\Omega$ $I_D = 0.5\text{mA}$, $f = 10\text{Hz}$	—	5	—	dB
Noise Figure	NF (2)	$V_{DS} = 10\text{V}$, $R_G = 1\text{k}\Omega$ $I_D = 0.5\text{mA}$, $f = 1\text{kHz}$	—	1	—	dB

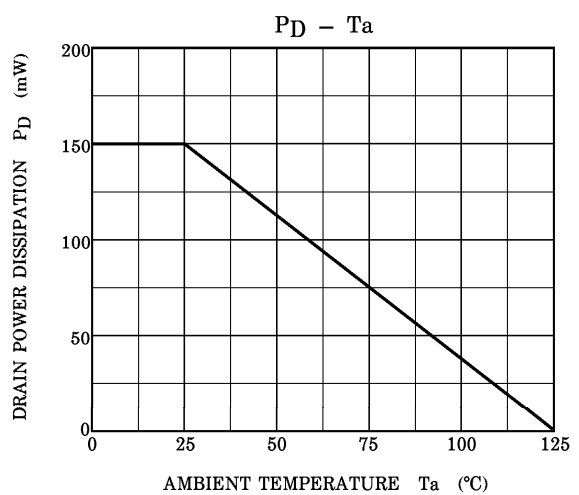
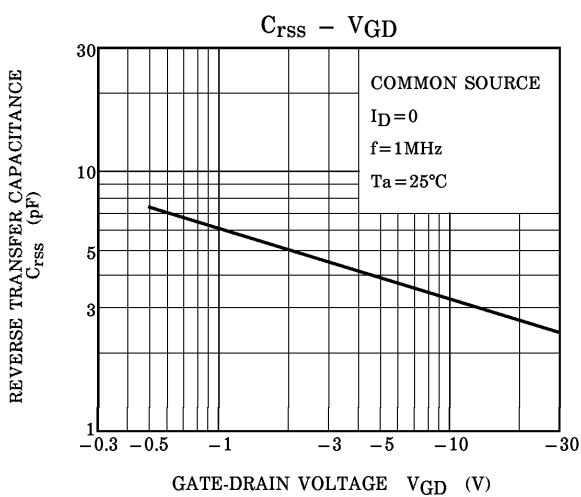
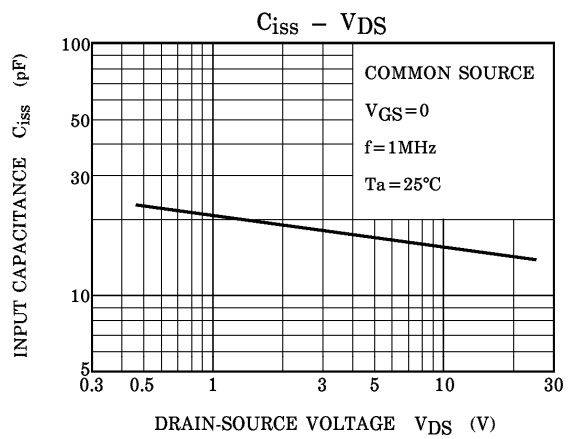
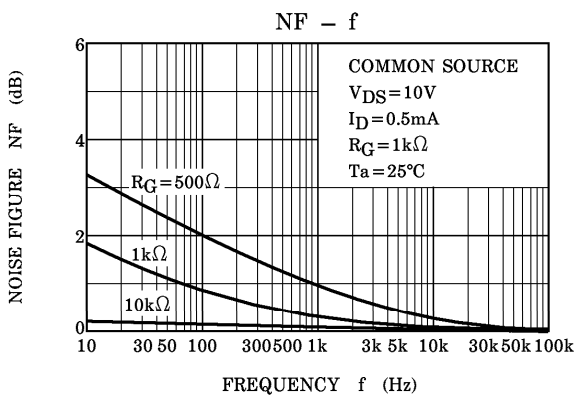
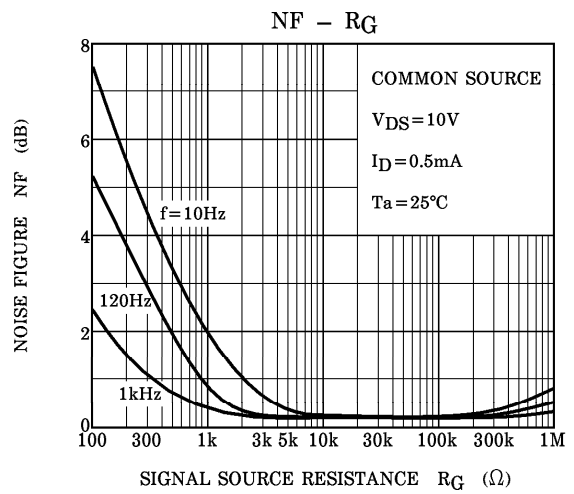
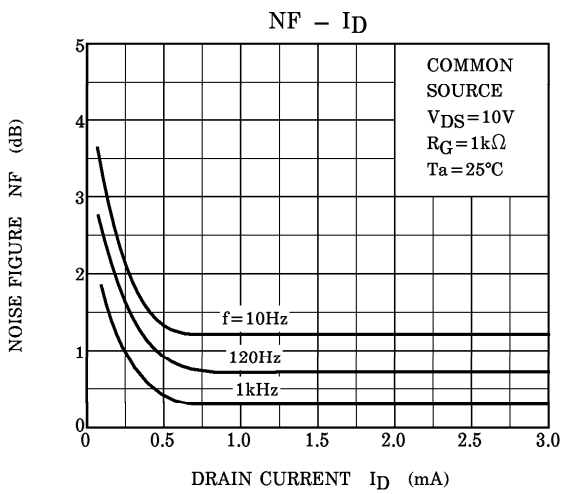
Note : I_{DSS} Classification

Y : 1.2~3.0mA, GR : 2.6~6.5mA, BL : 6.0~14mA

Marking







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