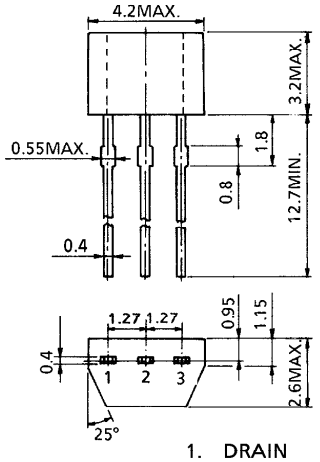
TOSHIBA FIELD EFFECT TRANSISTOR SILICON P CHANNEL JUNCTION TYPE

2SJ108

LOW NOISE AUDIO AMPLIFIER APPLICATIONS

Unit in mm

- Recommended for First Stages of EQ Amplifiers and MC Head Amplifiers.
- High $|Y_{fs}|$
  : $|Y_{fs}|$ = 22mS (Typ.) (V_{DS} = −10V, V_{GS} = 0, I_{DSS} = −3mA)
- Low Noise
  : En = 0.95nV / $\sqrt{Hz}$ (Typ.) (V_{DS} = −10V, I_D = −1mA, f = 1kHz)
- High Input Impedance : I_{GSS} = 1.0nA (Max.) (V_{GS} = 25V)
- Complementary to 2SK370
- Small Package



1. DRAIN
2. GATE
3. SOURCE

JEDEC	—
EIAJ	—
TOSHIBA	2-4E1C

Weight : 0.13g (Typ.)

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Gate-Drain Voltage	V_{GDS}	25	V
Gate Current	I_G	−10	mA
Drain Power Dissipation	P_D	200	mW
Junction Temperature	T_j	125	°C
Storage Temperature Range	T_{stg}	−55~125	°C

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate Cut-off Current	I_{GSS}	V_{GS} = 25V, V_{DS} = 0	—	—	1.0	nA
Gate-Drain Breakdown Voltage	$V_{(BR)GDS}$	V_{DS} = 0, I_G = 100μA	25	—	—	V
Drain Current	I_{DSS} (Note)	V_{DS} = −10V, V_{GS} = 0	−2.6	—	−20	mA
Gate-Source Cut-off Voltage	$V_{GS(OFF)}$	V_{DS} = −10V, I_D = −0.1μA	0.15	—	2.0	V
Forward Transfer Admittance	$\|Y_{fs}\|$	V_{DS} = −10V, V_{GS} = 0, f = 1kHz	8	22	—	mS
Input Capacitance	C_{iss}	V_{DS} = −10V, V_{GS} = 0, f = 1MHz	—	105	—	pF
Reverse Transfer Capacitance	C_{rss}	V_{GD} = 10V, I_D = 0, f = 1MHz	—	32	—	pF
Noise Figure	NF (1)	V_{DS} = −10V, I_D = −1mA, R_G = 1kΩ, f = 10Hz	—	1.0	10	dB
	NF (2)	V_{DS} = −10V, I_D = −1mA, R_G = 1kΩ, f = 1kHz	—	0.5	2	

Note : I_{DSS} Classification GR : −2.6~−6.5mA, BL : −6.0~−12mA,
V : −10~−20mA

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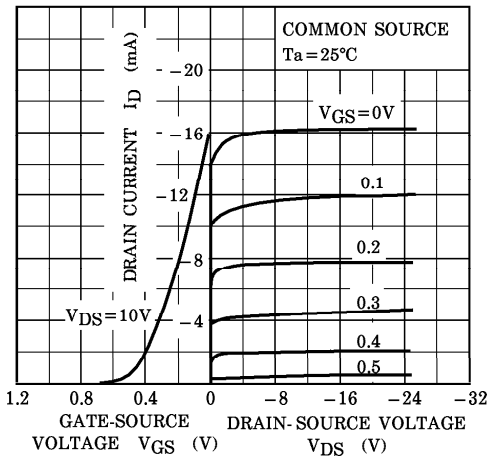
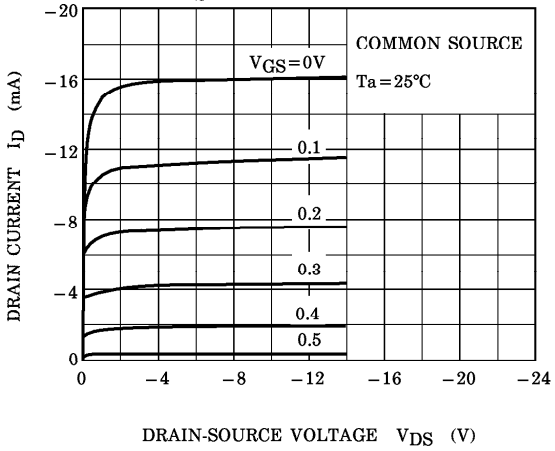
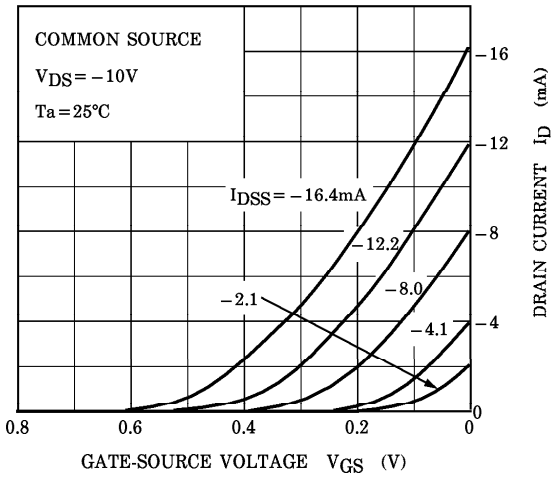
STATIC CHARACTERISTICS



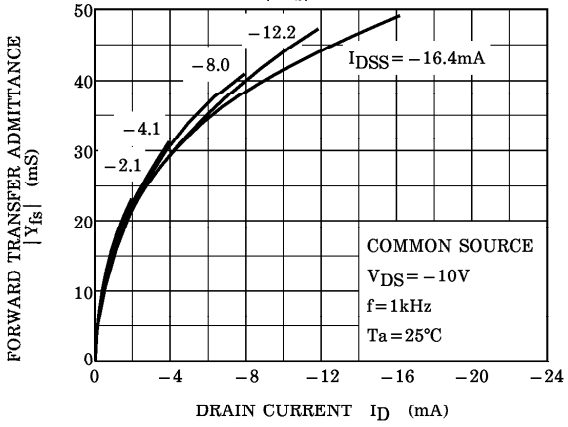
ID − VDS (LOW VOLTAGE REGION)



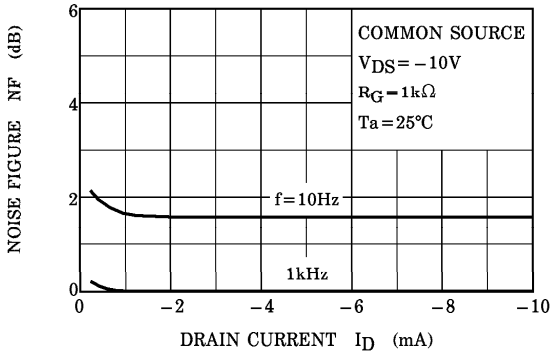
ID − VGS



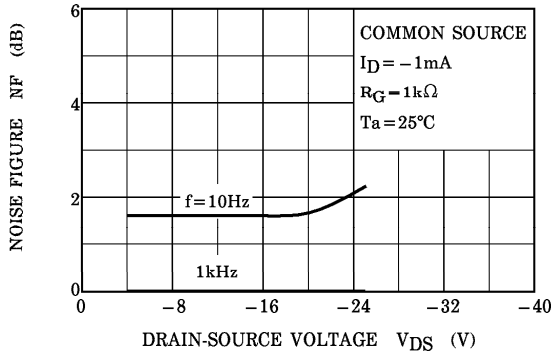
|Yfs| − ID



NF − ID



NF − VDS



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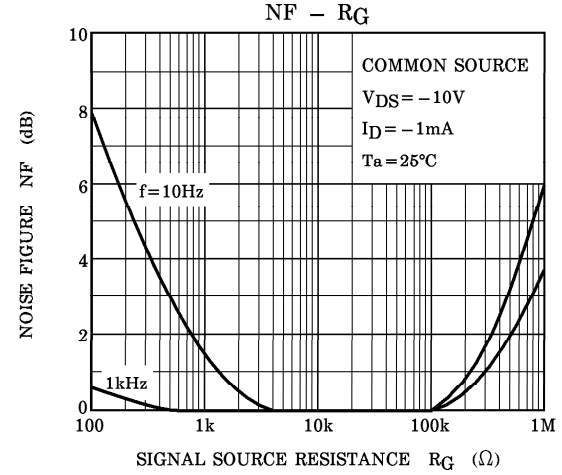
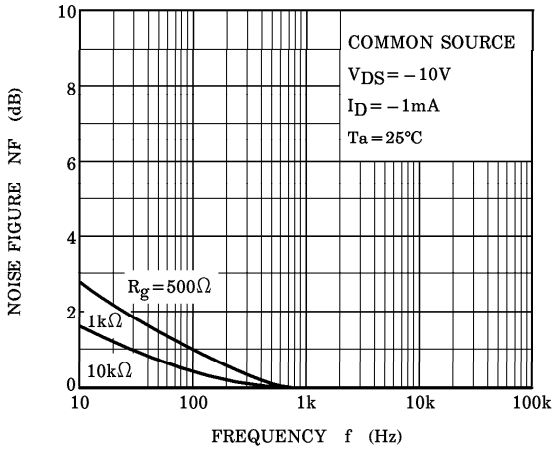
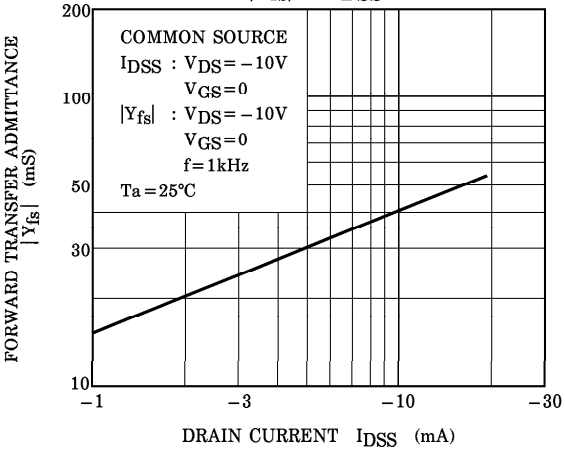
NF – R_G



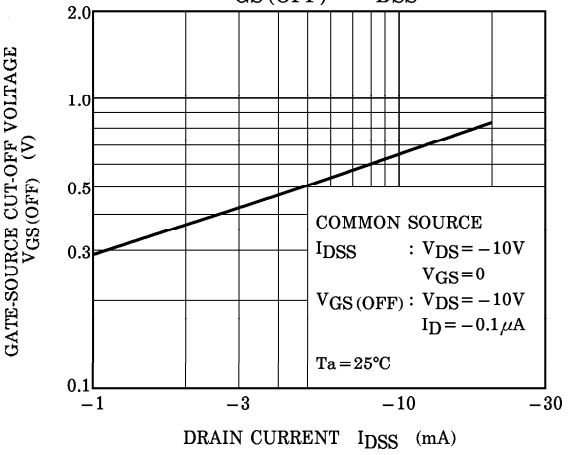
NF – f



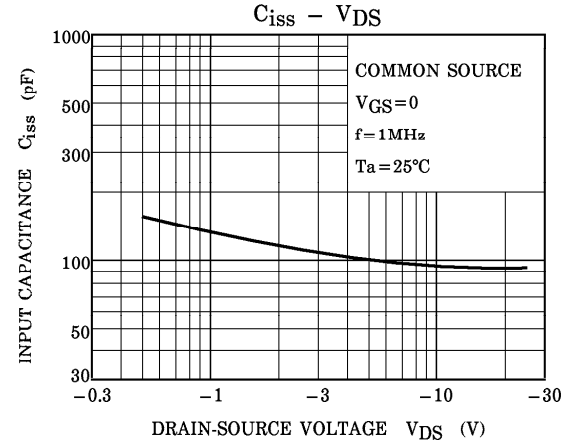
$|Y_{fs}|$ – I_{DSS}



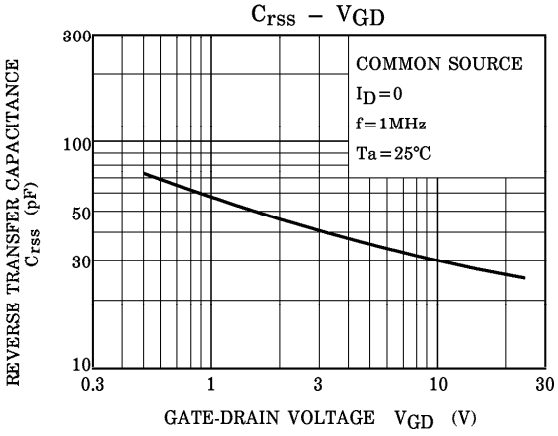
$V_{GS(OFF)}$ – I_{DSS}



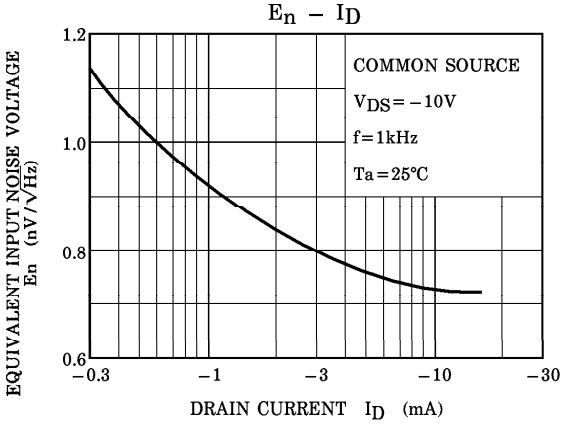
C_{iss} – V_{DS}



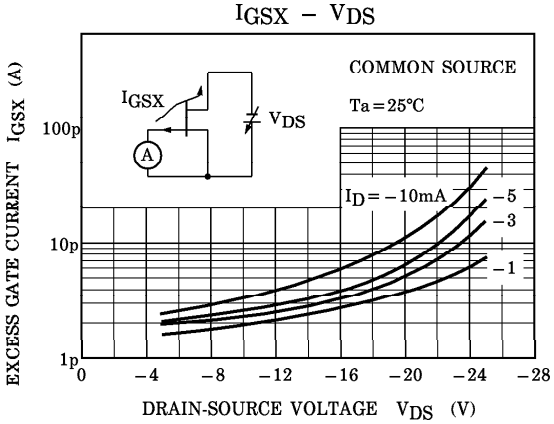
C_{rss} – V_{GD}



$E_n - I_D$



$I_{GSX} - V_{DS}$



$P_D - Ta$