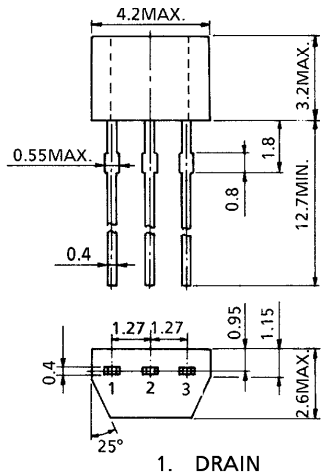
TOSHIBA FIELD EFFECT TRANSISTOR SILICON N CHANNEL JUNCTION TYPE

2SK371

FOR LOW NOISE AUDIO AMPLIFIER APPLICATIONS

Unit in mm

- Suitable for Use as First Stage for Equalizer and MC Head Amplifiers.
- High $|Y_{fs}|$: $|Y_{fs}|$=40mS (Typ.) (V_{DS}=10V, V_{GS}=0, I_{DSS}=5mA)
- High Breakdown Voltage : V_{GDS}=−40V
- Super Low Noise
  : NF=1.0dB (Typ.) (V_{DS}=10V, I_D=5mA, f=1kHz, R_G=100Ω)
- High Input Impedance : I_{GSS}=−1nA (Max.) (V_{GS}=−30V)
- Small Package



1. DRAIN
2. GATE
3. SOURCE

JEDEC	—
EIAJ	—
TOSHIBA	2-4E1C

Weight : 0.13g

MAXIMUM RATINGS (Ta = 25°C)

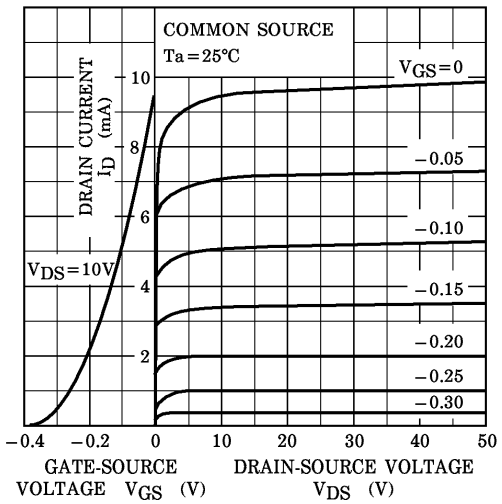
CHARACTERISTIC	SYMBOL	RATING	UNIT
Gate-Drain Voltage	V_{GDS}	−40	V
Gate Current	I_G	10	mA
Drain Power Dissipation	P_D	200	mW
Junction Temperature	T_j	125	°C
Storage Temperature Range	T_{stg}	−55~125	°C

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

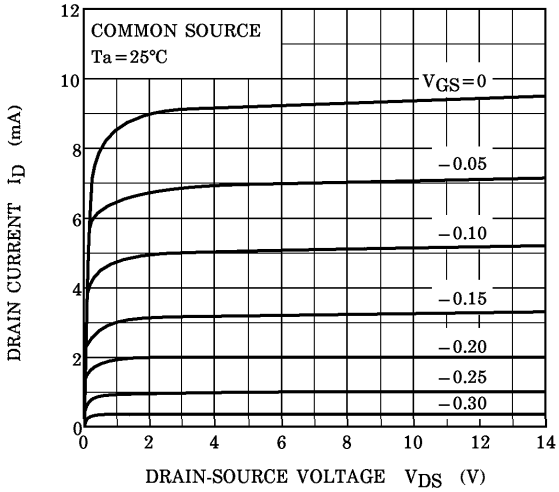
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate Cut-off Current	I_{GSS}	V_{GS}=−30V, V_{DS}=0	—	—	−1.0	nA
Gate-Drain Breakdown Voltage	$V_{(BR)GDS}$	V_{DS}=0, I_G=−100μA	−40	—	—	V
Drain Current	I_{DSS} (Note 1)	V_{DS}=10V, V_{GS}=0	5.0	—	30	mA
Gate-Source Cut-off Voltage	$V_{GS(OFF)}$	V_{DS}=10V, I_D=0.1μA	−0.3	—	−1.2	V
Forward Transfer Admittance	$\|Y_{fs}\|$	V_{DS}=10V, V_{GS}=0, f=1kHz, (TYP : I_{DSS}=5mA)	25	40	—	mS
Input Capacitance	C_{iss}	V_{DS}=10V, V_{GS}=0, f=1MHz	—	75	—	pF
Reverse Transfer Capacitance	C_{rss}	V_{DG}=10V, I_D=0, f=1MHz	—	15	—	pF
Noise Figure (Note 2)	NF (1)	V_{DS}=10V, R_G=100Ω, I_D=5mA, f=100Hz	—	5	10	dB
	NF (2)	V_{DS}=10V, R_G=100Ω, I_D=5mA, f=1kHz	—	1	2	

Note 1 : I_{DSS} Classification GR : 5.0~10.0mA, BL : 8.0~16.0mA, V : 14.0~30.0mA
Note 2 : Use this in the low voltage region (V_{DS}<15V) for low noise applications.

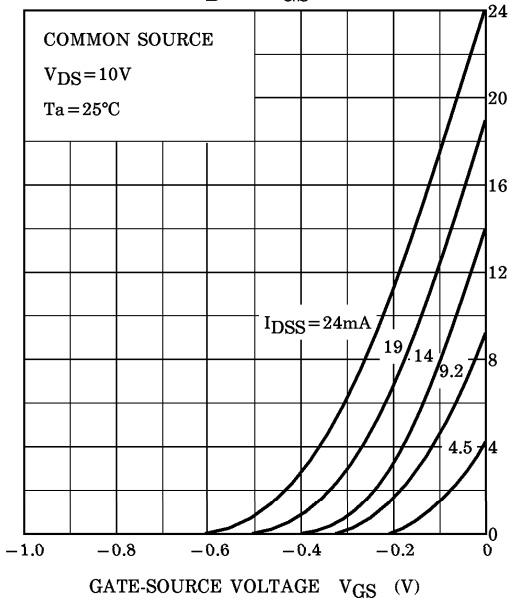
STATIC CHARACTERISTIC



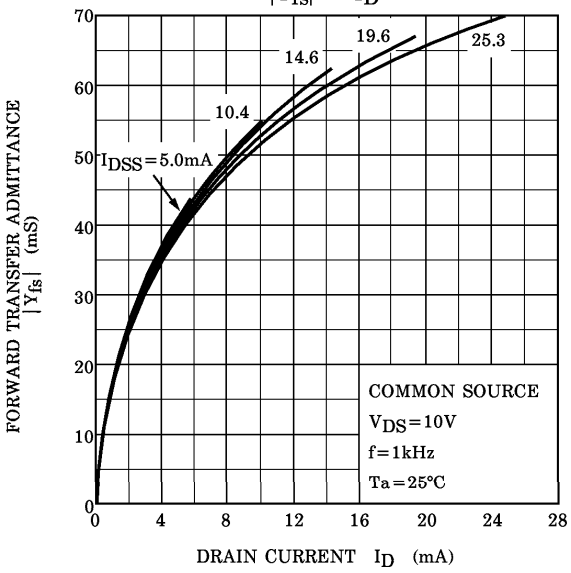
I_D – V_{DS} (LOW VOLTAGE REGION)



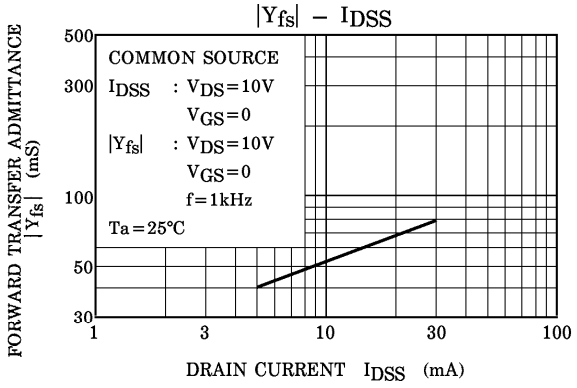
I_D – V_{GS}



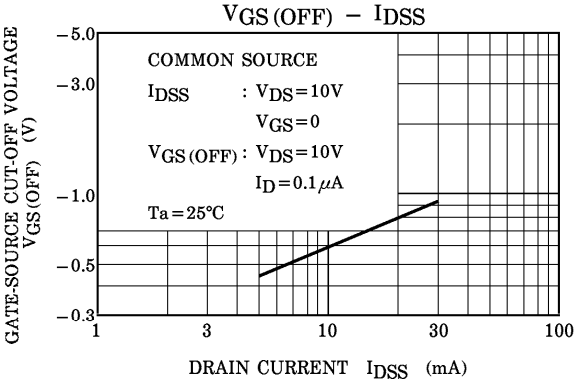
$|Y_{fs}|$ – I_D



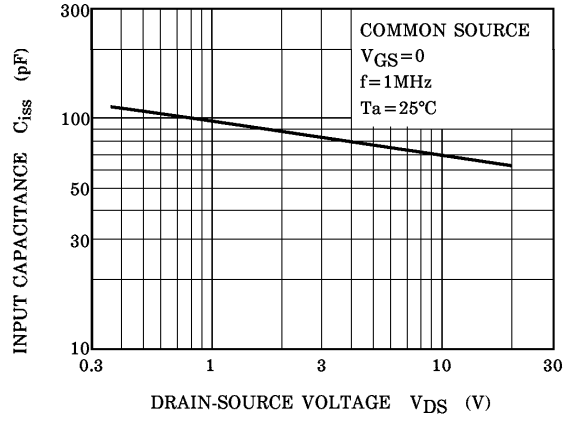
$|Y_{fs}|$ – I_{DSS}



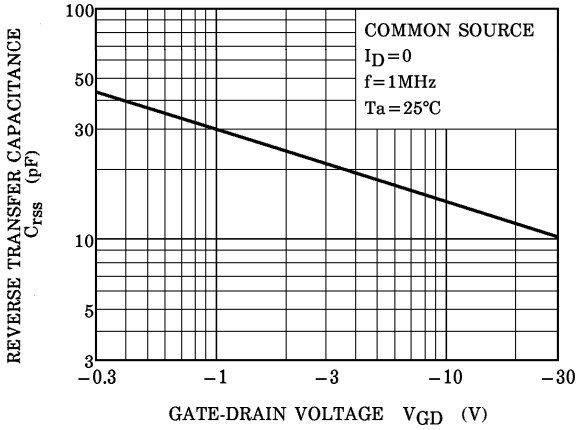
$V_{GS\,(OFF)}$ – I_{DSS}



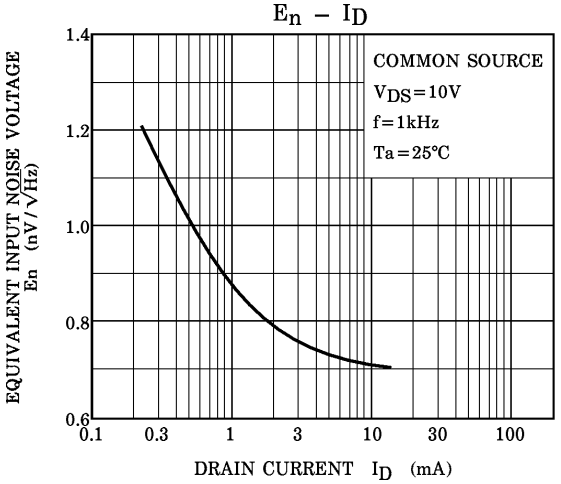
C_{iss} – V_{DS}



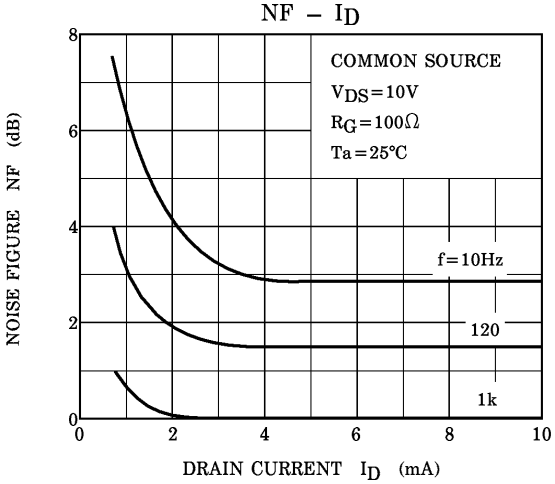
C_{rss} – V_{GD}



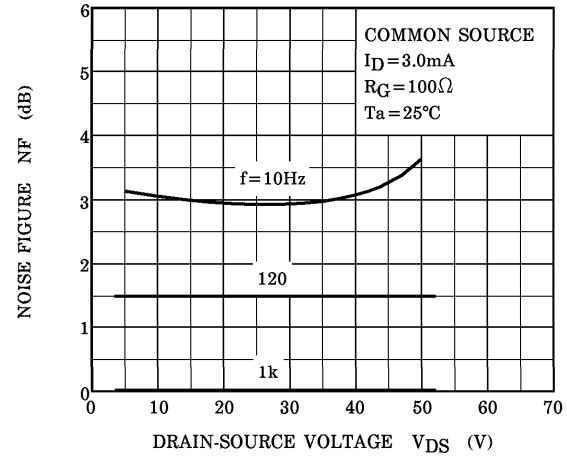
E_n – I_D



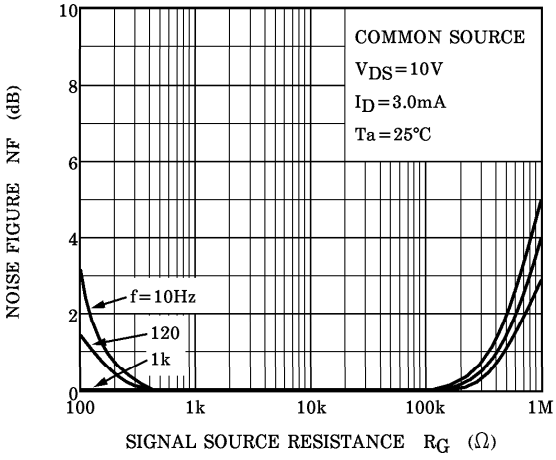
NF – I_D



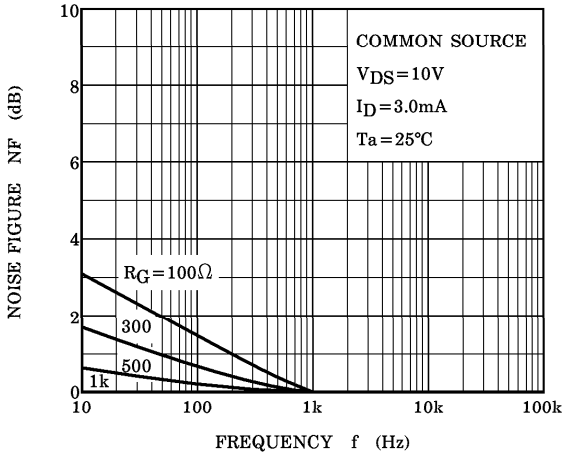
NF – V_{DS}



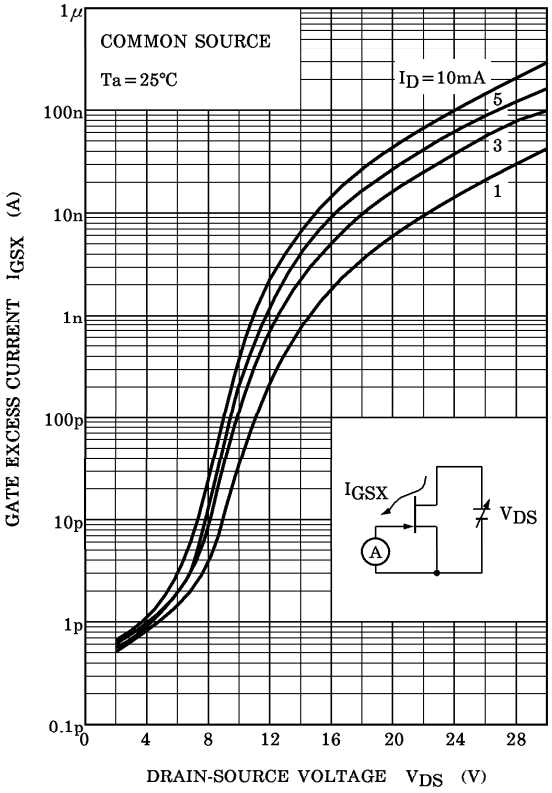
NF – R_G



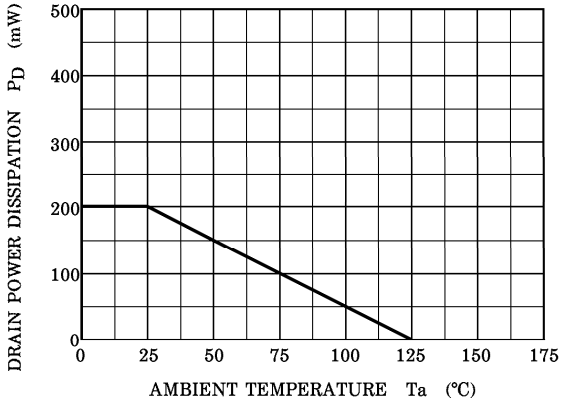
NF – f



IGSX – VDS



PD – Ta



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