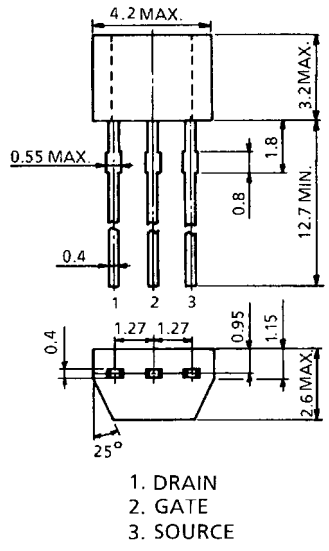
TOSHIBA Field Effect Transistor Silicon N Channel Junction Type

2SK370

For Low Noise Audio Amplifier Applications

- Suitable for use as first stage for equalizer and MC head amplifiers.
- High $|Y_{fs}|$: $|Y_{fs}|$ = 22 ms (typ.) (V_{DS} = 10 V, V_{GS} = 0, I_{DSS} = 3 mA)
- High breakdown voltage: V_{GDS} = −40 V
- High input impedance: I_{GSS} = −1 nA (max) (V_{GS} = −30 V)
- Complementary to 2SJ108
- Small package

Unit: mm



JEDEC	—
JEITA	—
TOSHIBA	2-4E1C

Weight: 0.13 g (typ.)

Maximum Ratings (Ta = 25°C)

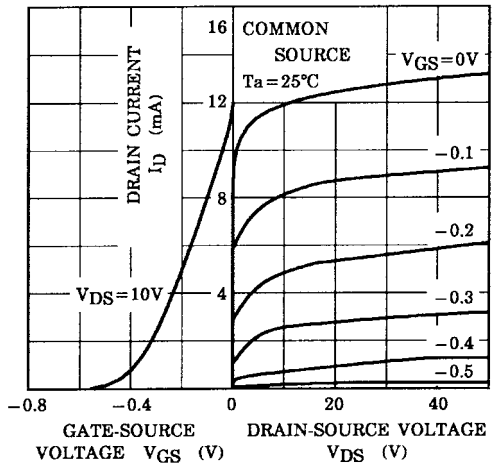
Characteristics	Symbol	Rating	Unit
Gate-drain voltage	V_{GDS}	−40	V
Gate current	I_G	10	mA
Drain power dissipation	P_D	200	mW
Junction temperature	T_j	125	°C
Storage temperature range	T_{stg}	−55~125	°C

Electrical Characteristics (Ta = 25°C)

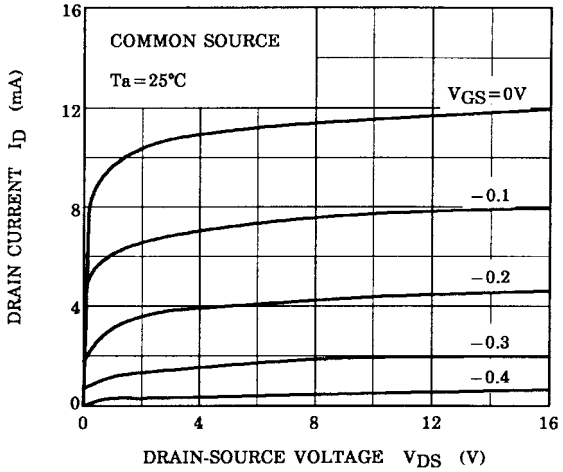
Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Gate cut-off current	I_{GSS}	V_{GS} = −30 V, V_{DS} = 0	—	—	−1.0	nA
Gate-drain breakdown voltage	$V_{(BR)\ GDS}$	V_{DS} = 0, I_G = −100 μA	−40	—	—	V
Drain current	I_{DSS} (Note)	V_{DS} = 10 V, V_{GS} = 0	2.6	—	20	mA
Gate-source cut-off voltage	$V_{GS\ (OFF)}$	V_{DS} = 10 V, I_D = 0.1 μA	−0.2	—	−1.5	V
Forward transfer admittance	$\|Y_{fs}\|$	V_{DS} = 10 V, V_{GS} = 0, f = 1 kHz, I_{DSS} = 3 mA	8	22	—	mS
Input capacitance	C_{iss}	V_{DS} = 10 V, V_{GS} = 0, f = 1 MHz	—	30	—	pF
Reverse transfer capacitance	C_{rss}	V_{DG} = 10 V, I_D = 0, f = 1 MHz	—	6	—	pF
Noise figure	NF (1)	V_{DS} = 10 V, I_D = 1.0 mA, R_G = 1 kΩ, f = 10 Hz	—	1.0	10	dB
	NF (2)	V_{DS} = 10 V, I_D = 1.0 mA, R_G = 1 kΩ, f = 1 kHz	—	0.5	2	

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

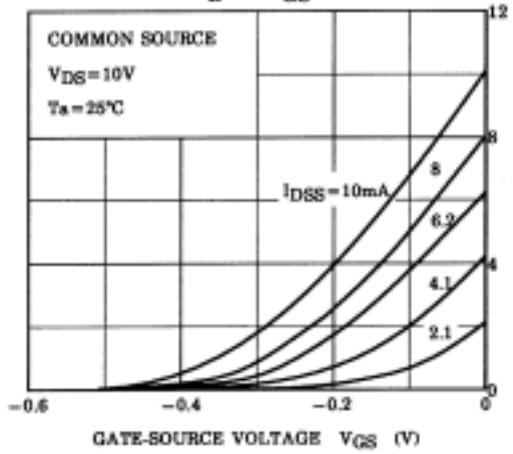
STATIC CHARACTERISTICS



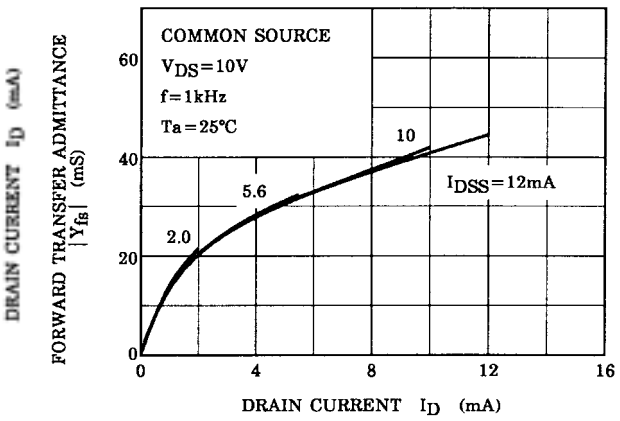
I_D – V_{DS} (LOW VOLTAGE REGION)



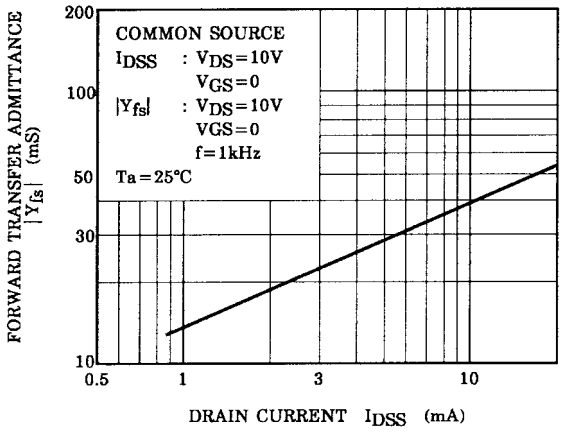
I_D – V_{GS}



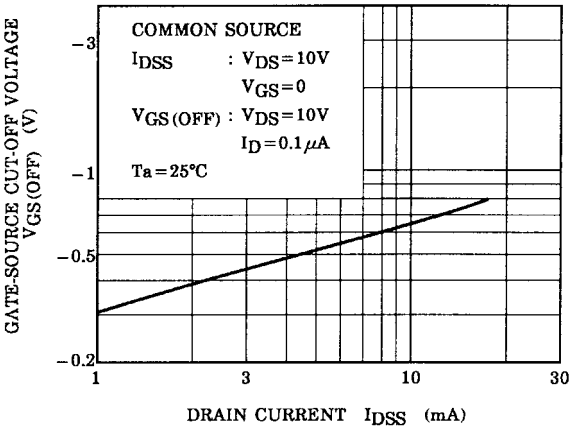
$|Y_{fs}|$ – I_D



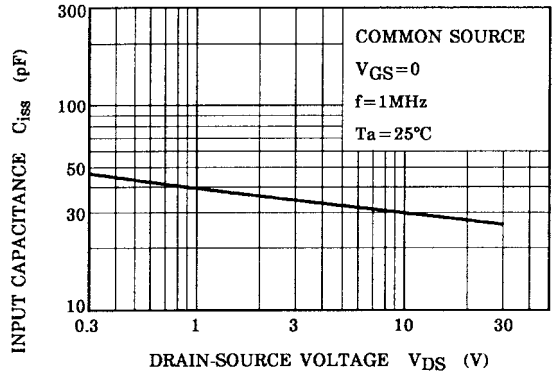
$|Y_{fs}|$ – I_{DSS}



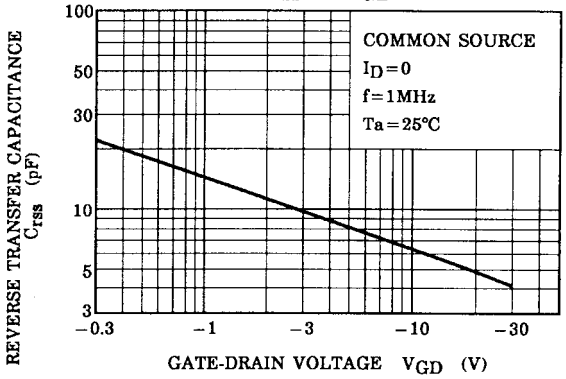
$V_{GS(OFF)}$ – I_{DSS}



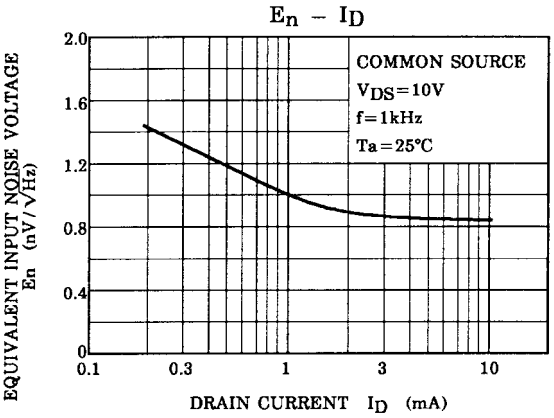
C_{iss} – V_{DS}



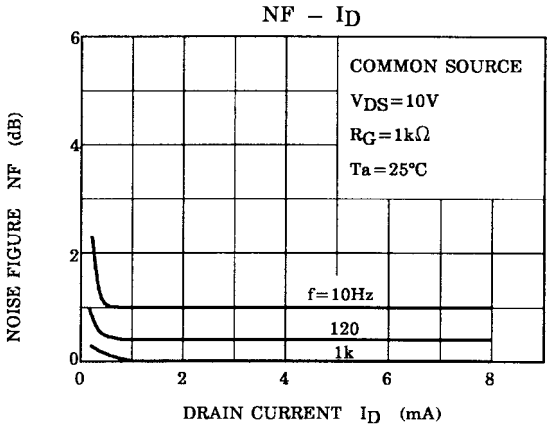
C_{rss} – V_{GD}



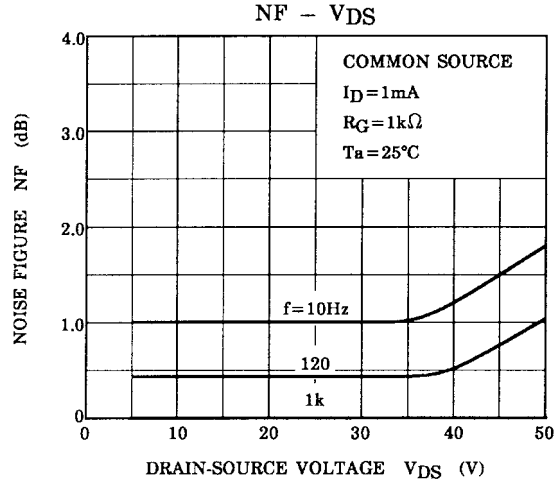
E_n – I_D



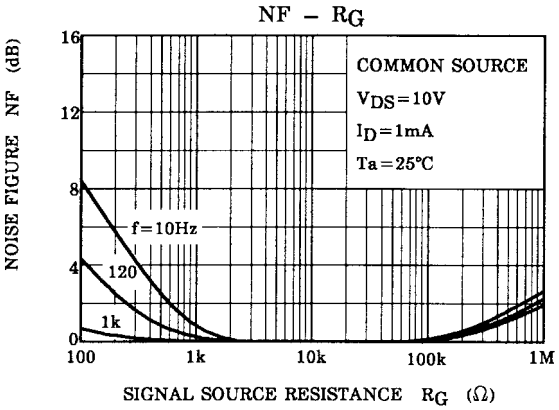
NF – I_D



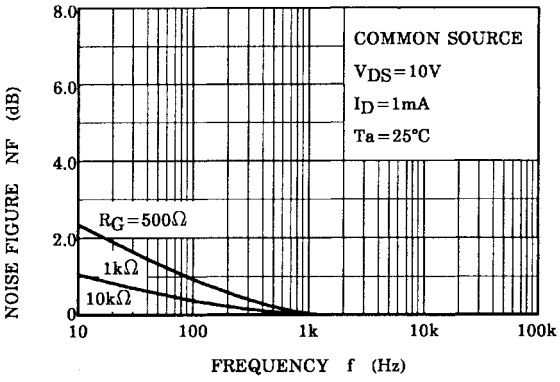
NF – V_{DS}



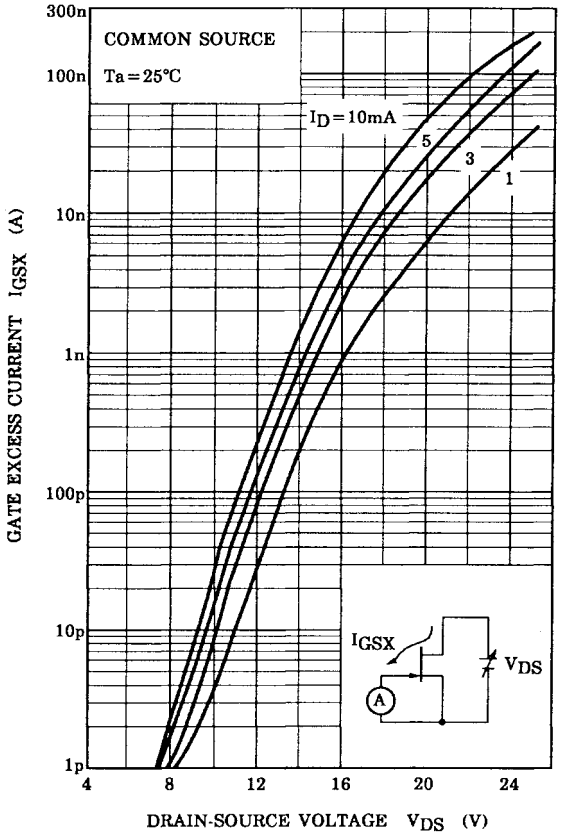
NF – R_G



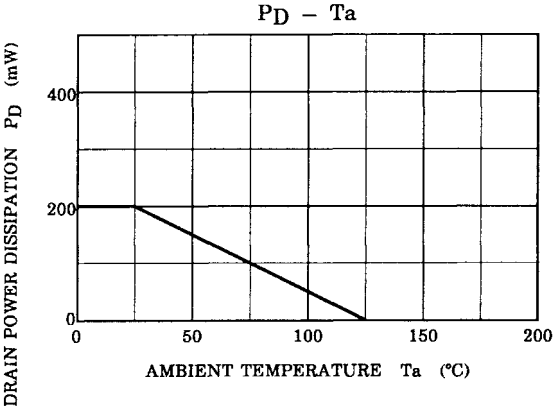
NF – f



I_{GSX} – V_{DS}



P_D – Ta



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