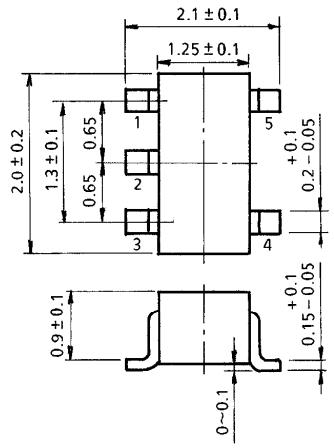
TOSHIBA FIELD EFFECT TRANSISTOR SILICON N CHANNEL JUNCTION TYPE

2SK3320

FOR LOW NOISE AUDIO AMPLIFIER APPLICATIONS

Unit in mm

- Two devices in a Ultra Super Mini (five pins) package
- High $|Y_{fs}|$: $|Y_{fs}| = 15$ mS (Typ.) ($V_{DS} = 10$ V, $V_{GS} = 0$)
- High Breakdown Voltage : $V_{GDS} = -50$ V
- Super Low Noise : NF = 1.0 dB (Typ.) ($V_{DS} = 10$ V, $I_D = 0.5$ mA, f = 1 kHz, $R_G = 1$ kΩ)
- High Input Impedance : $I_{GSS} = -1$ nA (Max.) ($V_{GS} = -30$ V)



1. DRAIN 1
2. SOURCE
3. DRAIN 2
4. GATE 2
5. GATE 1

USV	
JEDEC	—
EIAJ	—
TOSHIBA	2-2L1B

MAXIMUM RATINGS (Ta = 25°C) (Q1, Q2 COMMON)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Gate-Drain Voltage	V_{GDS}	−50	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

* : Total Rating

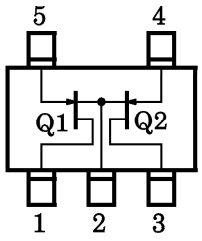
961001EAA1

ELECTRICAL CHARACTERISTICS (Ta = 25°C) (Q1, Q2 COMMON)

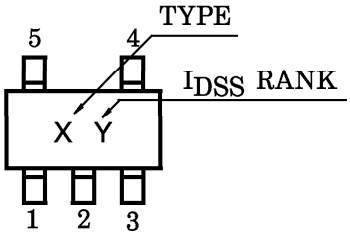
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate Cut-off Current	I_{GSS}	V_{GS} = −30 V, V_{DS} = 0	—	—	−1.0	nA
Gate-Drain Breakdown Voltage	$V_{(BR)GDS}$	V_{DS} = 0, I_G = −100 μA	−50	—	—	V
Drain Current	I_{DSS} (Note)	V_{DS} = 10 V, V_{GS} = 0	1.2	—	14.0	mA
Gate-Source Cut-off Voltage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

(Note) : I_{DSS} Classification Y (Y) : 1.2~3.0 mA, GR (G) : 2.6~6.5 mA, BL (L) : 6.0~14.0 mA
( ) ··· I_{DSS} Rank Marking

PIN ASSIGNMENT (TOP VIEW)

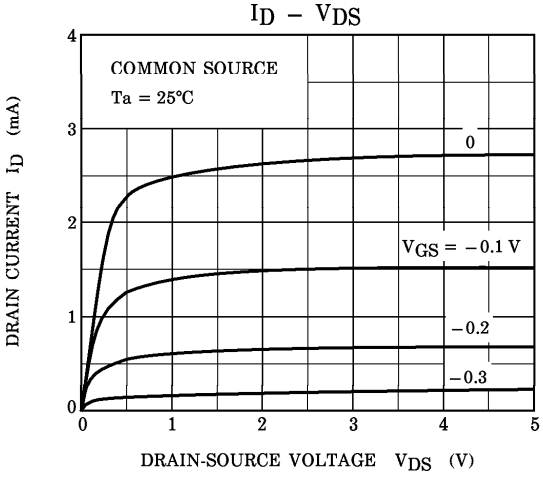


MARKING

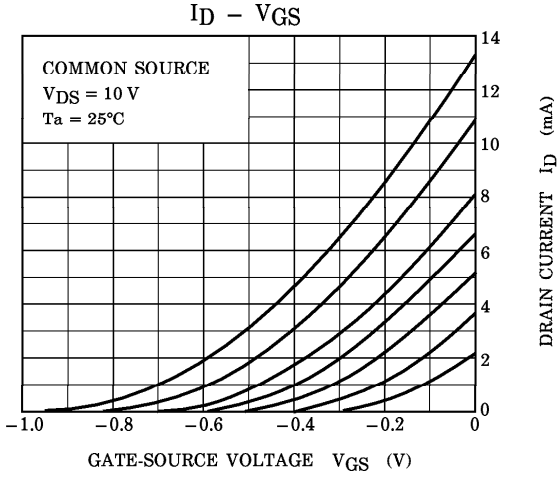


(Q1, Q2 COMMON)

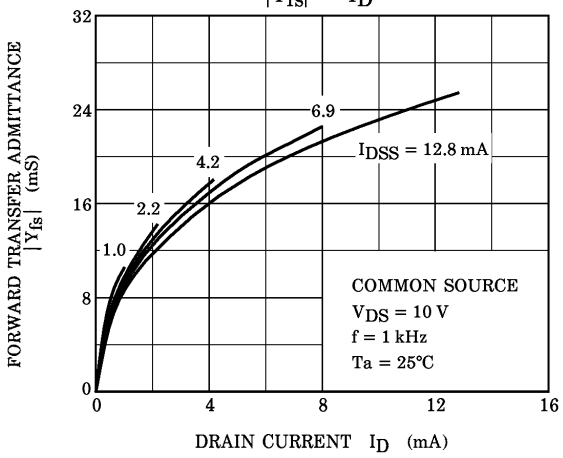
I_D – V_{DS}



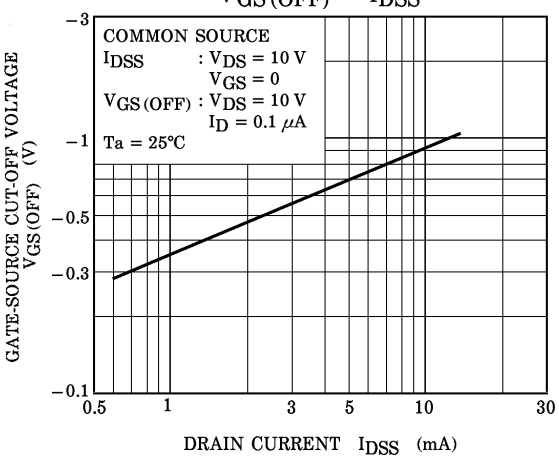
I_D – V_{GS}



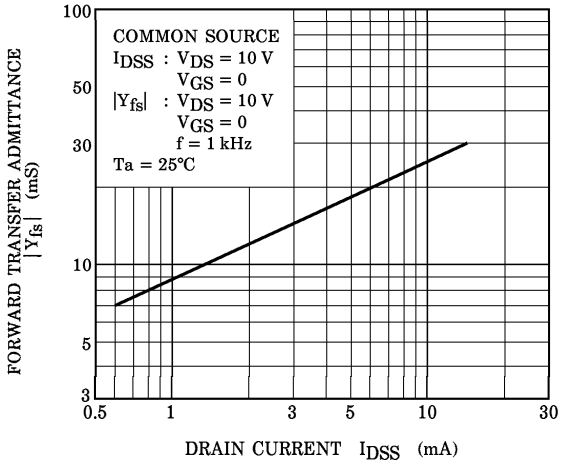
$|Y_{fs}|$ – I_D



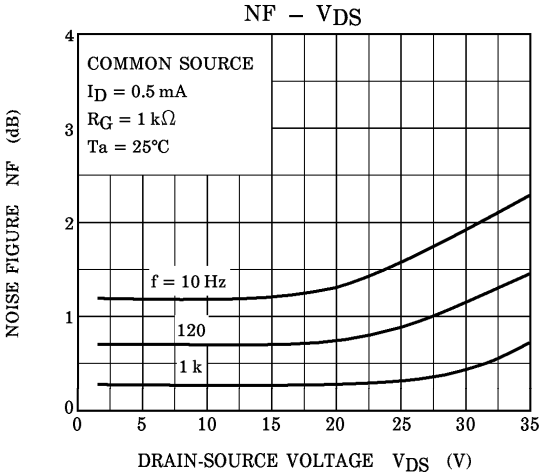
$V_{GS\,(OFF)}$ – I_{DSS}



$|Y_{fs}|$ – I_{DSS}

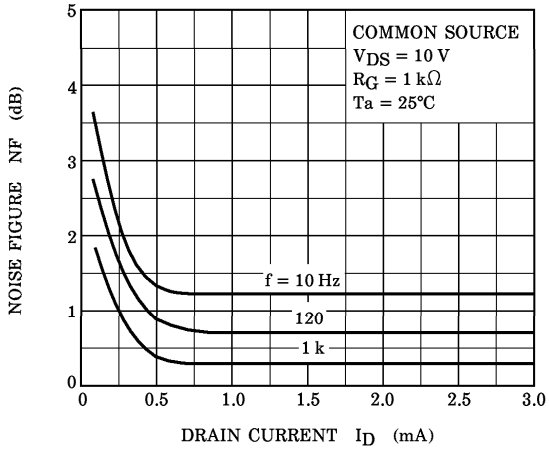


NF – V_{DS}

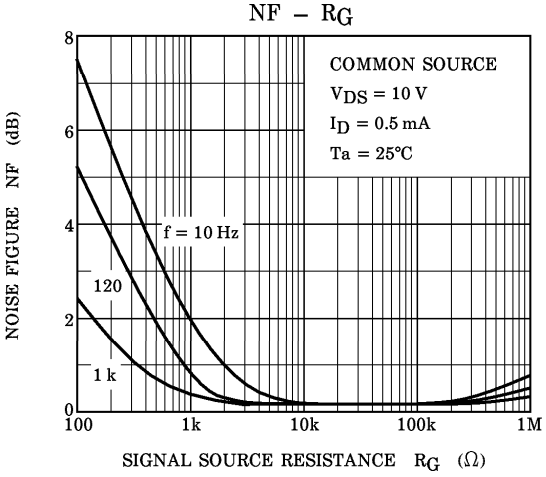


(Q1, Q2 COMMON)

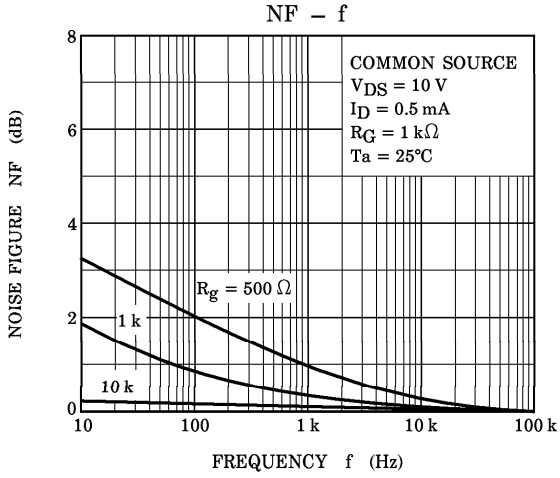
NF – I_D



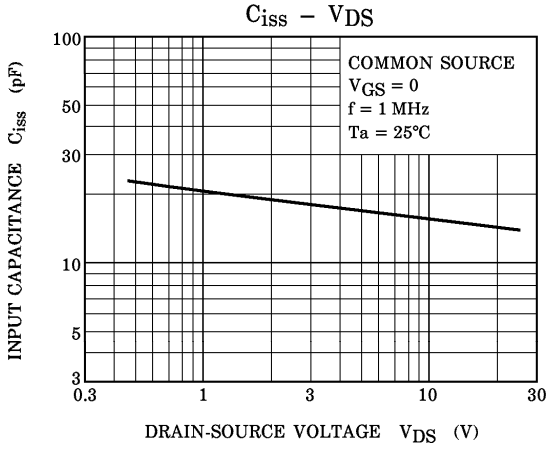
NF – R_G



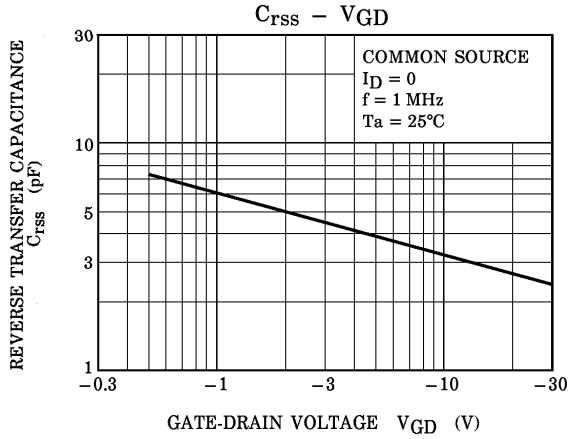
NF – f



C_{iss} – V_{DS}



C_{rss} – V_{GD}



P_D – Ta