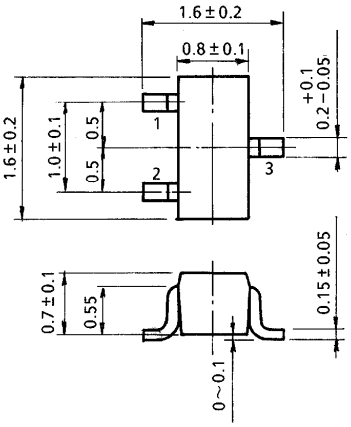
TENTATIVE TOSHIBA FIELD EFFECT TRANSISTOR SILICON N CHANNEL JUNCTION TYPE

2SK3321

GENERAL PURPOSE AND IMPEDANCE CONVERTER AND CONDENSER MICROPHONE APPLICATIONS

Unit in mm



1. SOURCE
2. DRAIN
3. GATE

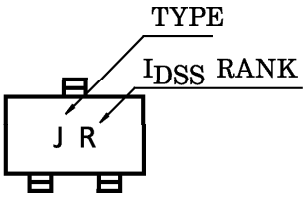
JEDEC	—
EIAJ	—
TOSHIBA	2-2H1B

- Small Package
- High Input Impedance : $I_{GSS} = -1$ nA (Max.) ($V_{GS} = -30$ V)
- Low Noise : NF = 0.5 dB (Typ.) ($R_G = 100$ kΩ, f = 120 Hz)

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Gate-Drain Voltage	V_{GDS}	−50	V
Gate Current	I_G	10	mA
Drain Power Dissipation	P_D	100	mW
Junction Temperature	T_j	125	°C
Storage Temperature Range	T_{stg}	−55~125	°C

MARKING

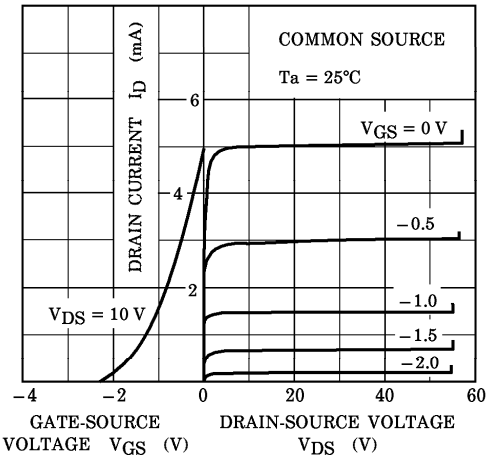


ELECTRICAL CHARACTERISTICS (Ta = 25°C)

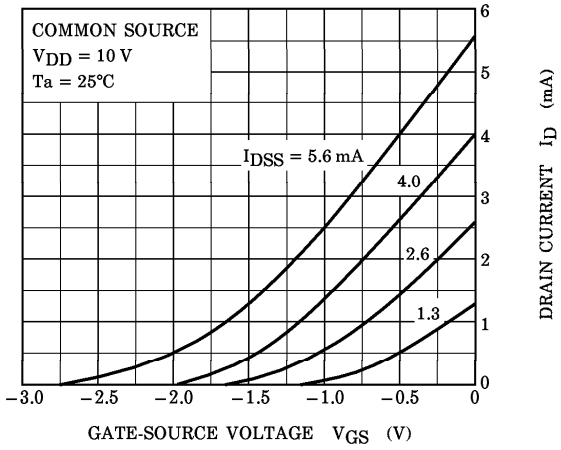
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate Cut-off Current	I_{GSS}	V_{GS} = −30 V, V_{DS} = 0	—	—	−1.0	nA
Gate-Drain Breakdown Voltage	$V_{(BR)\,GDS}$	V_{DS} = 0, I_G = −100 μA	−50	—	—	V
Drain Current	I_{DSS} (Note)	V_{DS} = 10 V, V_{GS} = 0	0.3	—	6.5	mA
Gate-Source Cut-off Voltage	$V_{GS\,(OFF)}$	V_{DS} = 10 V, I_D = 0.1 μA	−0.4	—	−5.0	V
Forward Transfer Admittance	$\|Y_{fs}\|$	V_{DS} = 10 V, V_{GS} = 0, f = 1 kHz	1.2	—	—	mS
Input Capacitance	C_{iss}	V_{DS} = 10 V, V_{GS} = 0, f = 1 MHz	—	8.2	—	pF
Reverse Transfer Capacitance	C_{rss}	V_{GD} = −10 V, I_D = 0, f = 1 MHz	—	2.6	—	pF
Noise Figure	NF	V_{DS} = 15 V, V_{GS} = 0, R_G = 100 kΩ, f = 120 Hz	—	0.5	—	dB

(Note) : I_{DSS} Classification R (R) : 0.30~0.75 mA, O (O) : 0.60~1.40 mA,
Y (Y) : 1.2~3.0 mA, GR (G) : 2.6~6.5 mA
( ) ··· I_{DSS} Rank Marking

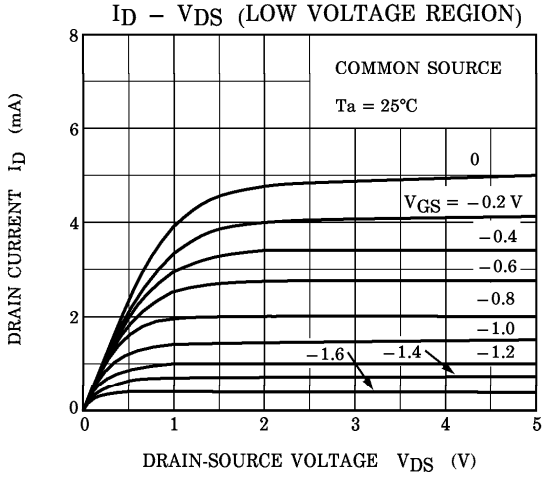
STATIC CHARACTERISTICS



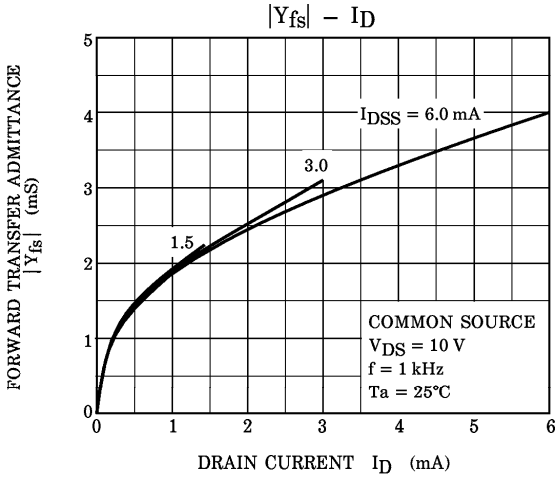
I_D – V_{GS}



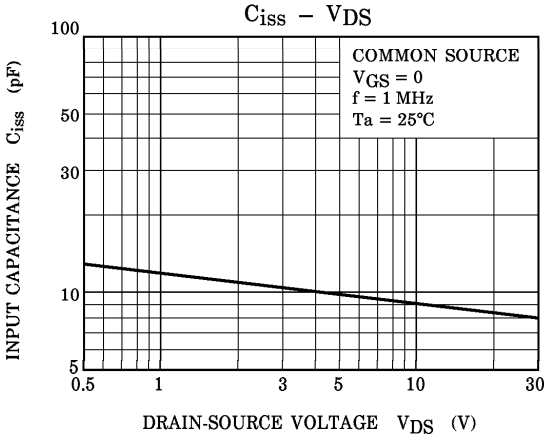
I_D – V_{DS} (LOW VOLTAGE REGION)



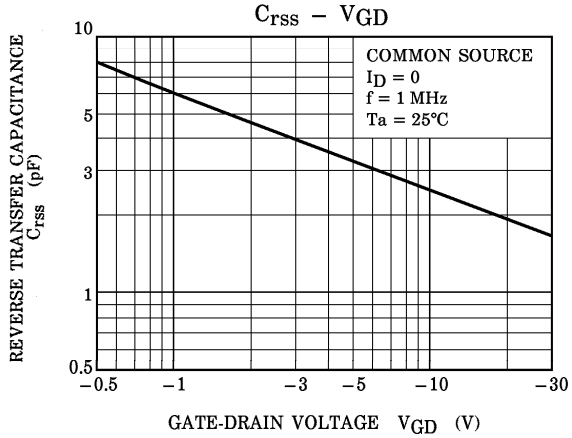
$|Y_{fs}|$ – I_D



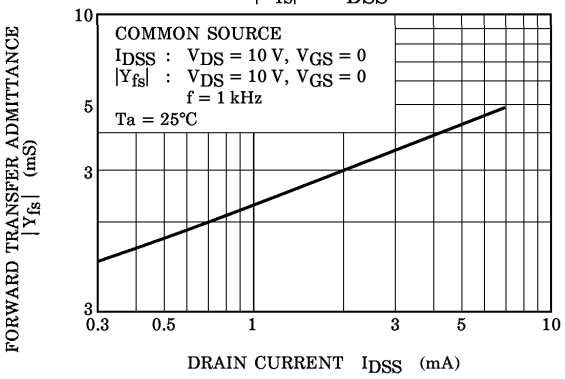
C_{iss} – V_{DS}



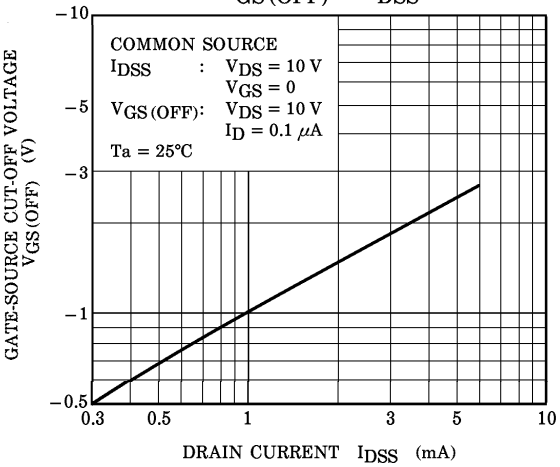
C_{rss} – V_{GD}



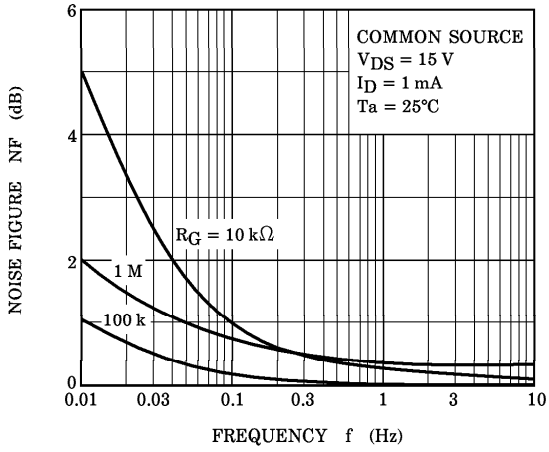
$|Y_{fs}|$ – I_{DSS}



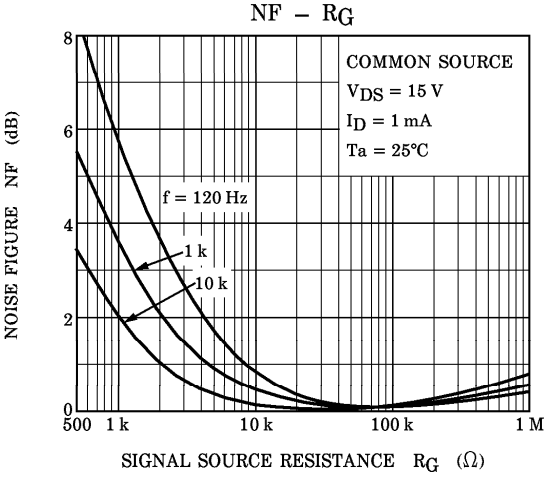
$V_{GS\,(OFF)}$ – I_{DSS}



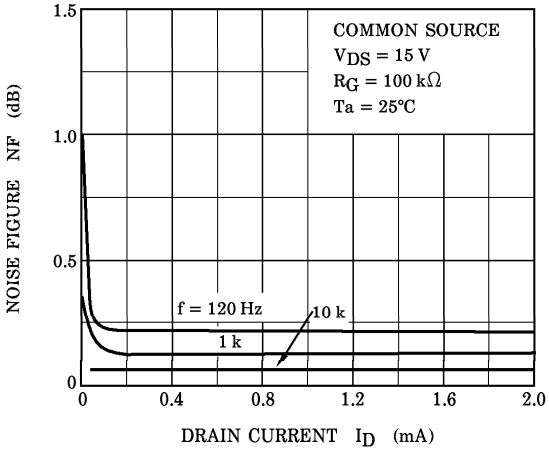
NF – f



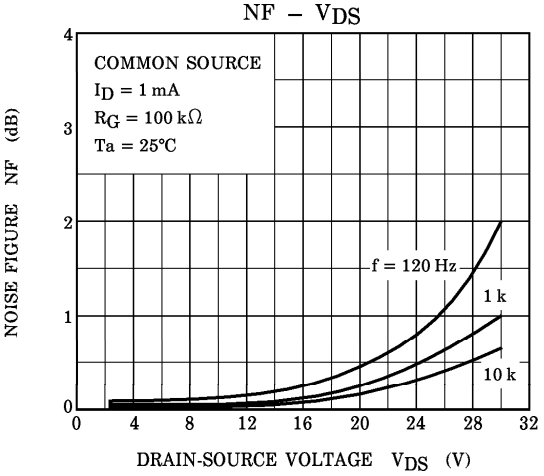
NF – R_G

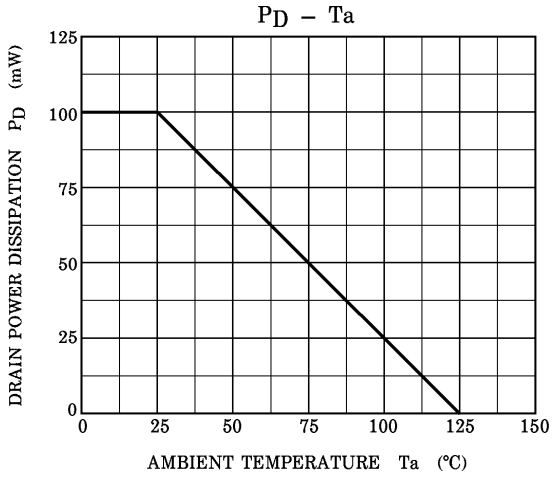


NF – I_D



NF – V_{DS}




P_D – Ta
DRAIN POWER DISSIPATION P_D (mW)
125
100
75
50
25
0
0
25
50
75
100
125
150
AMBIENT TEMPERATURE Ta (°C)