

TENTATIVE TOSHIBA FIELD EFFECT TRANSISTOR SILICON N CHANNEL JUNCTION TYPE

# 2SK3321

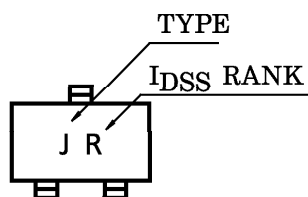
GENERAL PURPOSE AND IMPEDANCE CONVERTER AND CONDENSER MICROPHONE APPLICATIONS

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

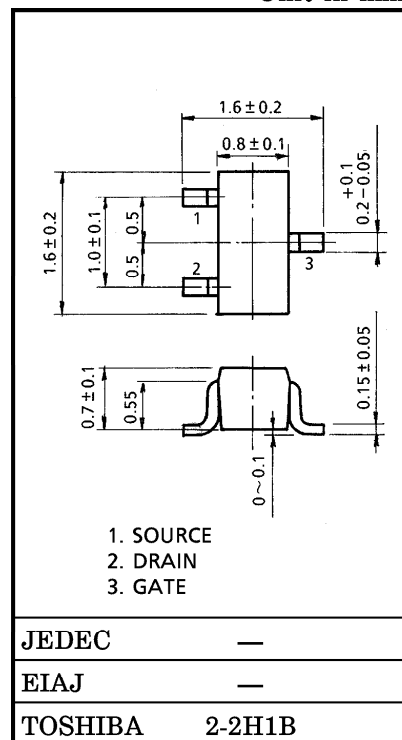
MAXIMUM RATINGS ( $T_a = 25^\circ\text{C}$ )

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	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	-55~125	$^\circ\text{C}$

MARKING



Unit in mm



961001EAA1

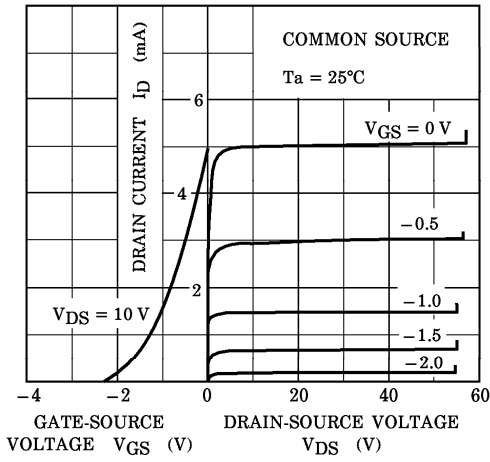
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## ELECTRICAL CHARACTERISTICS (Ta = 25°C)

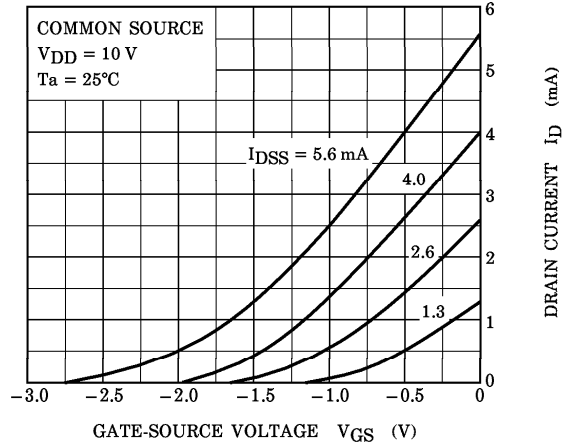
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate Cut-off Current	$I_{GSS}$	$V_{GS} = -30\text{ V}, V_{DS} = 0$	—	—	-1.0	nA
Gate-Drain Breakdown Voltage	$V_{(BR)GDS}$	$V_{DS} = 0, I_G = -100\ \mu\text{A}$	-50	—	—	V
Drain Current	$I_{DSS}$ (Note)	$V_{DS} = 10\text{ V}, V_{GS} = 0$	0.3	—	6.5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

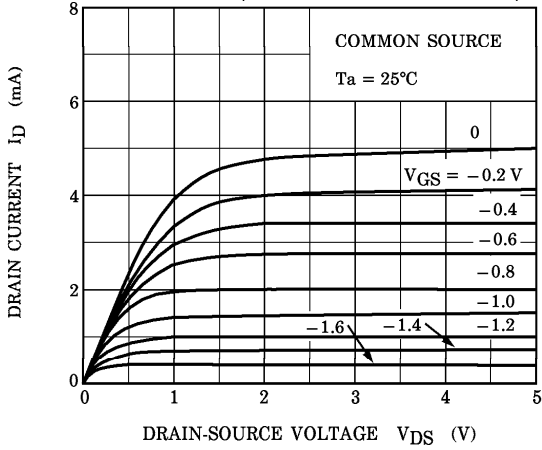
**STATIC CHARACTERISTICS**



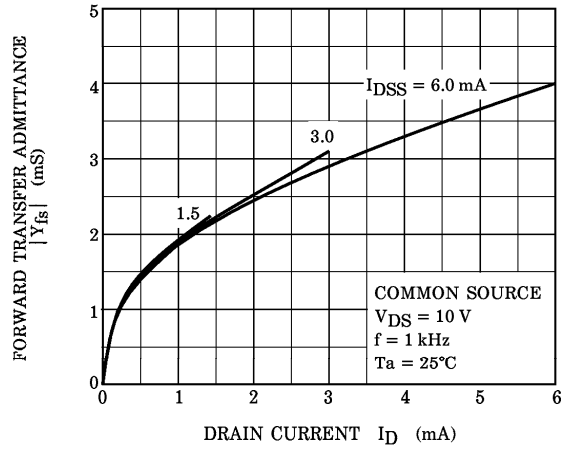
**ID - VGS**



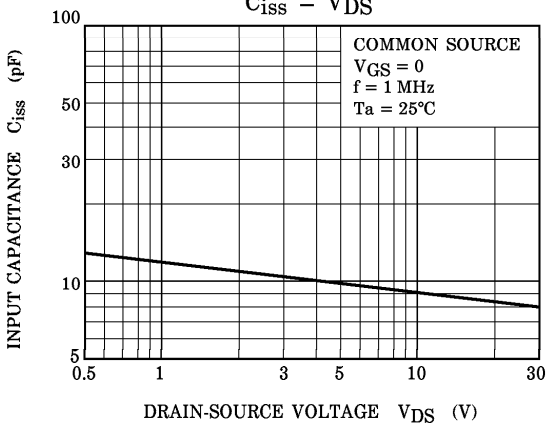
**ID - VDS (LOW VOLTAGE REGION)**



**|Yfs| - ID**



**Ciss - VDS**



**Crss - VGD**

