

TOSHIBA FIELD EFFECT TRANSISTOR SILICON N CHANNEL JUNCTION TYPE

2SK3320

FOR LOW NOISE AUDIO AMPLIFIER APPLICATIONS

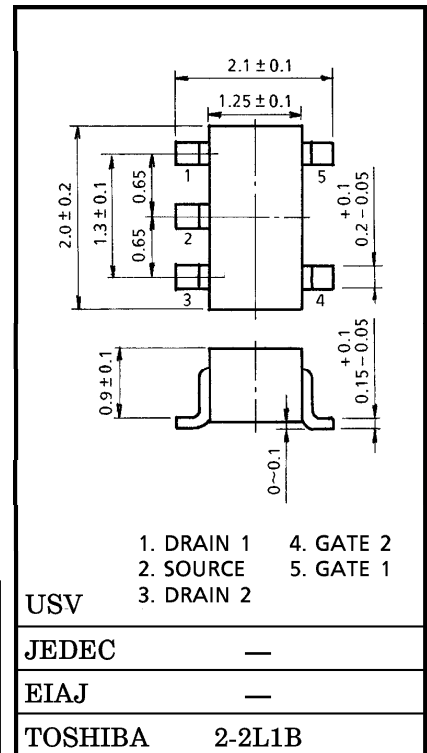
- Two devices in a Ultra Super Mini (five pins) package
- High $|Y_{fs}|$: $|Y_{fs}| = 15 \text{ mS (Typ.)}$
($V_{DS} = 10 \text{ V}, V_{GS} = 0$)
- High Breakdown Voltage : $V_{GDS} = -50 \text{ V}$
- Super Low Noise : $NF = 1.0 \text{ dB (Typ.)}$
($V_{DS} = 10 \text{ V}, I_D = 0.5 \text{ mA},$
 $f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

MAXIMUM RATINGS ($T_a = 25^\circ\text{C}$) (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	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55~125	$^\circ\text{C}$

* : Total Rating

Unit in mm

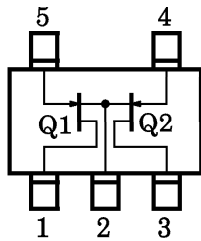


ELECTRICAL CHARACTERISTICS (Ta = 25°C) (Q1, Q2 COMMON)

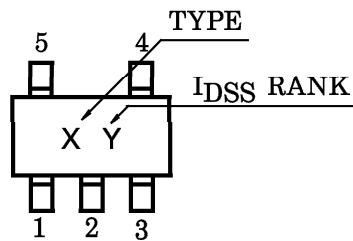
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate Cut-off Current	I_{GSS}	$V_{GS} = -30\text{ V}, V_{DS} = 0$	—	—	-1.0	nA
Gate-Drain Breakdown Voltage	$V_{(BR)GDS}$	$V_{DS} = 0, I_G = -100\ \mu\text{A}$	-50	—	—	V
Drain Current	I_{DSS} (Note)	$V_{DS} = 10\text{ V}, V_{GS} = 0$	1.2	—	14.0	mA
Gate-Source Cut-off Voltage	$V_{GS(OFF)}$	$V_{DS} = 10\text{ V}, I_D = 0.1\ \mu\text{A}$	-0.2	—	-1.5	V
Forward Transfer Admittance	$ Y_{fs} $	$V_{DS} = 10\text{ V}, V_{GS} = 0, f = 1\text{ kHz}$	4.0	15	—	mS
Input Capacitance	C_{iss}	$V_{DS} = 10\text{ V}, V_{GS} = 0, f = 1\text{ MHz}$	—	13	—	pF
Reverse Transfer Capacitance	C_{rss}	$V_{DG} = 10\text{ V}, I_D = 0, f = 1\text{ MHz}$	—	3	—	pF
Noise Figure	NF (1)	$V_{DS} = 10\text{ V}, R_G = 1\text{ k}\Omega,$ $I_D = 0.5\text{ mA}, f = 10\text{ Hz}$	—	5	—	dB
	NF (2)	$V_{DS} = 10\text{ V}, R_G = 1\text{ k}\Omega,$ $I_D = 0.5\text{ mA}, f = 1\text{ kHz}$	—	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

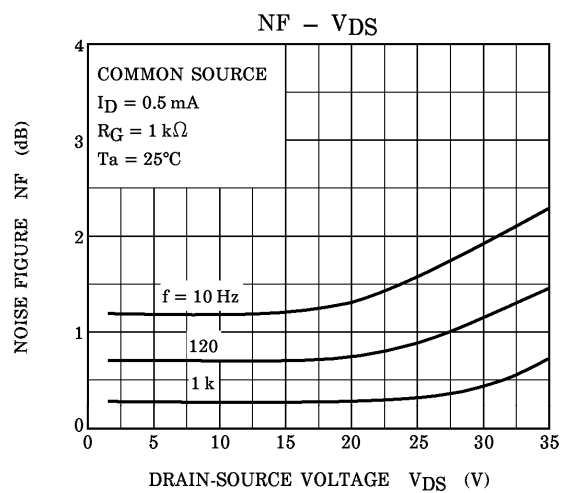
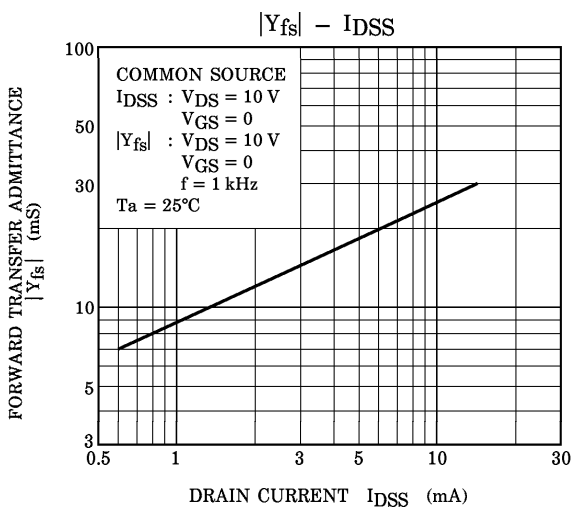
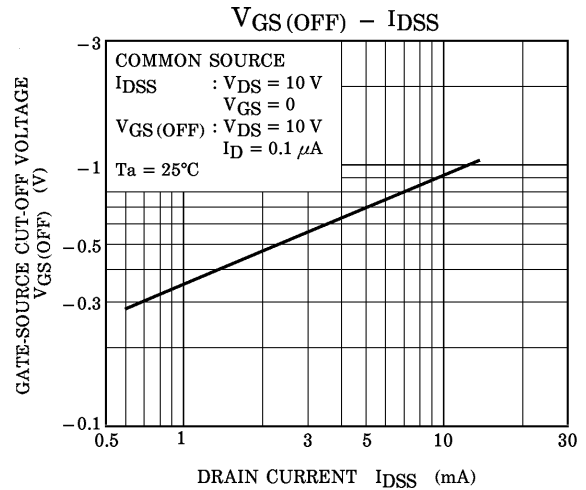
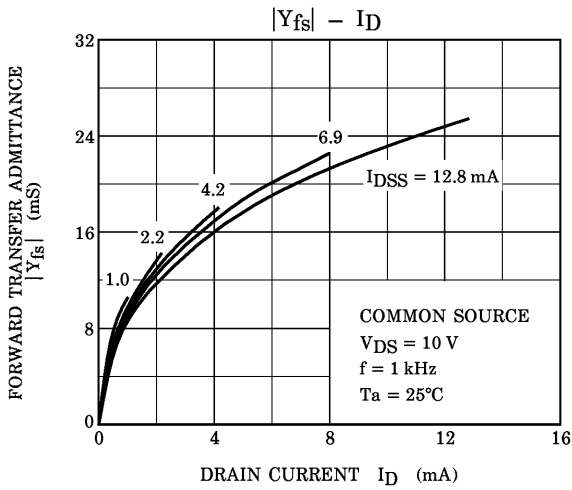
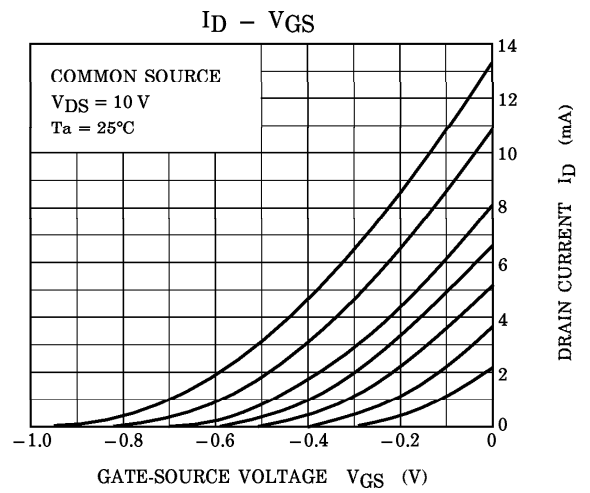
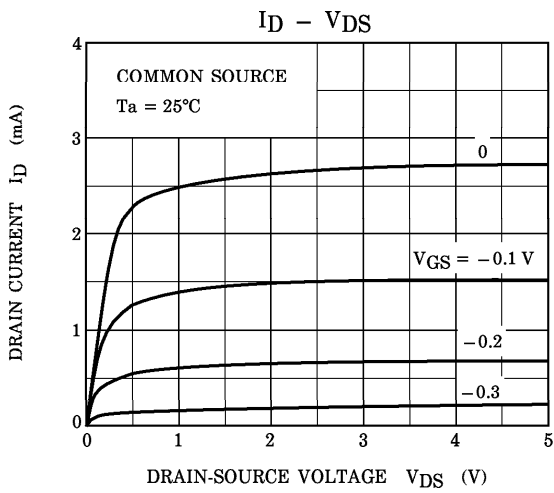
PIN ASSIGNMENT (TOP VIEW)



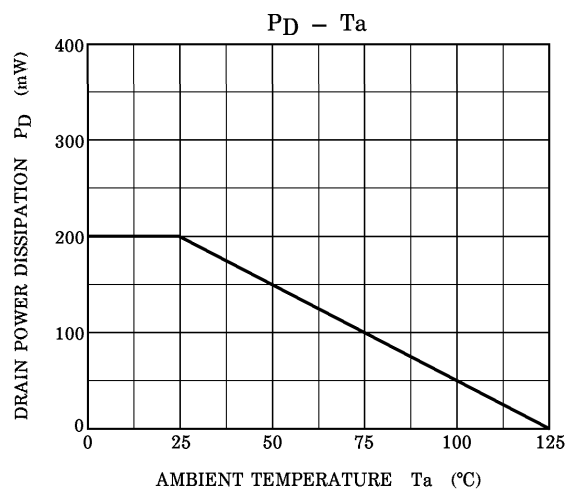
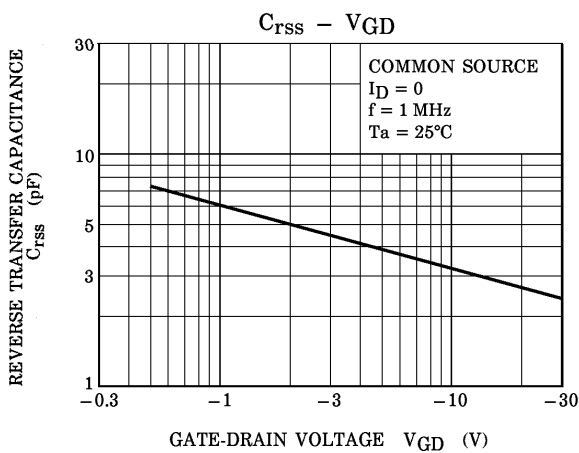
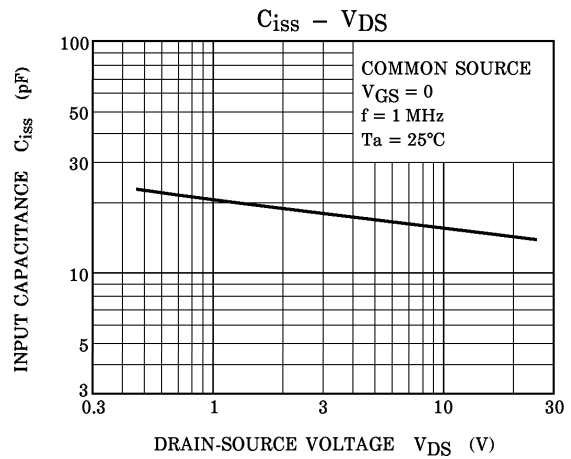
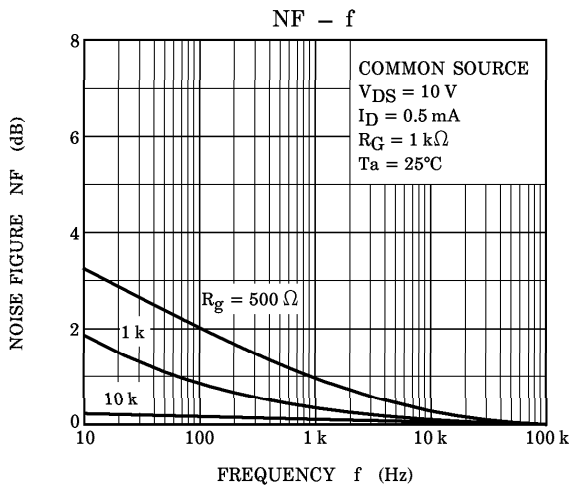
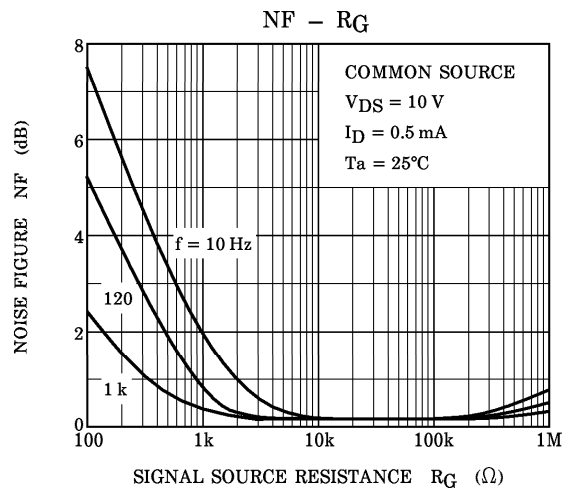
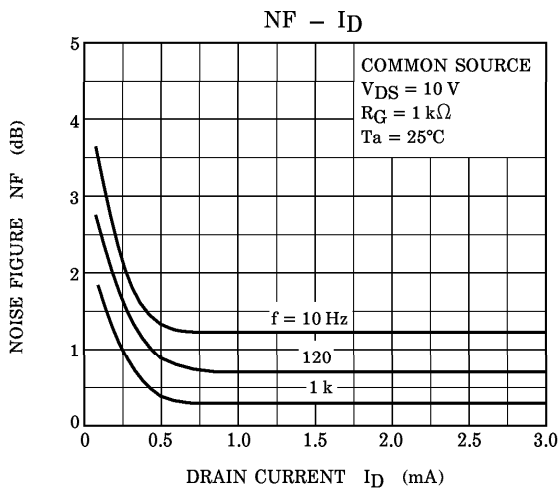
MARKING



(Q1, Q2 COMMON)



(Q1, Q2 COMMON)



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