

TOSHIBA FIELD EFFECT TRANSISTOR SILICON N CHANNEL DUAL GATE MOS TYPE

3SK260

TV TUNER VHF MIXER APPLICATIONS

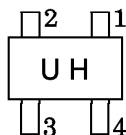
VHF RF AMPLIFIER APPLICATIONS

- High Conversion Gain : $G_{CS}=24.5\text{dB}$ (Typ.)
- Low Noise Figure : $NF_{CS}=3.3\text{dB}$ (Typ.)

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

CHARACTERISTIC	SYMBOL	RATING	UNIT
Drain-Source Voltage	V_{DS}	13.5	V
Gate 1-Source Voltage	V_{G1S}	± 8	V
Gate 2-Source Voltage	V_{G2S}	± 8	V
Drain Current	I_D	30	mA
Drain Power Dissipation	P_D	100	mW
Chanel Temperature	T_{ch}	125	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	$-55\sim 125$	$^\circ\text{C}$

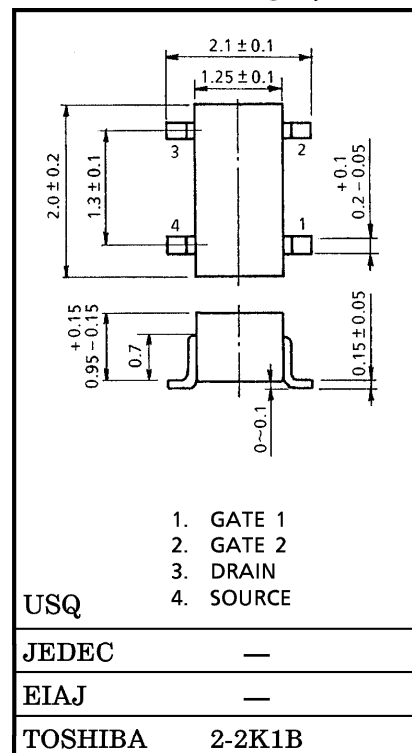
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ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate 1 Leakage Current	I_{G1SS}	$V_{DS}=0, V_{G1S}=\pm 6\text{V}, V_{G2S}=0$	—	—	± 50	nA
Gate 2 Leakage Current	I_{G2SS}	$V_{DS}=0, V_{G1S}=0, V_{G2S}=\pm 6\text{V}$	—	—	± 50	nA
Drain-Source Voltage	$V_{(BR)DSX}$	$V_{G1S}=-4\text{V}, V_{G2S}=-4\text{V}$ $I_D=100\mu\text{A}$	15	—	—	V
Drain Current	I_{DSS}	$V_{DS}=6\text{V}, V_{G1S}=0, V_{G2S}=3\text{V}$	3	—	14	mA
Gate 1-Source Cut-off Voltage	$V_{G1S(OFF)}$	$V_{DS}=6\text{V}, V_{G2S}=3\text{V},$ $I_D=100\mu\text{A}$	-0.15	—	-1.5	V
Gate 2-Source Cut-off Voltage	$V_{G2S(OFF)}$	$V_{DS}=6\text{V}, V_{G1S}=0\text{V},$ $I_D=100\mu\text{A}$	0	—	-1.0	V
Forward Transfer Admittance	$ Y_{fs} $	$V_{DS}=6\text{V}, V_{G2S}=3\text{V}, I_D=10\text{mA}$ $f=1\text{kHz}$	—	27	—	mS
Input Capacitance	C_{iss}	$V_{DS}=6\text{V}, V_{G2S}=3\text{V}, I_D=10\text{mA}$ $f=1\text{MHz}$	—	2.7	3.8	pF
Reverse Transfer Capacitance	C_{rss}		—	0.025	0.04	
Conversion Gain	G_{CS}	$V_{DD}=10\text{V}, f=200\text{MHz}$	21	24.5	—	dB
Noise Figure	NF_{CS}	$f_L=245\text{MHz} (500\text{mV}_{rms})$ (Fig.1)	—	3.3	5.5	

Note : I_{DSS} Classification Y : 3~7mA, GR : 6~14mA

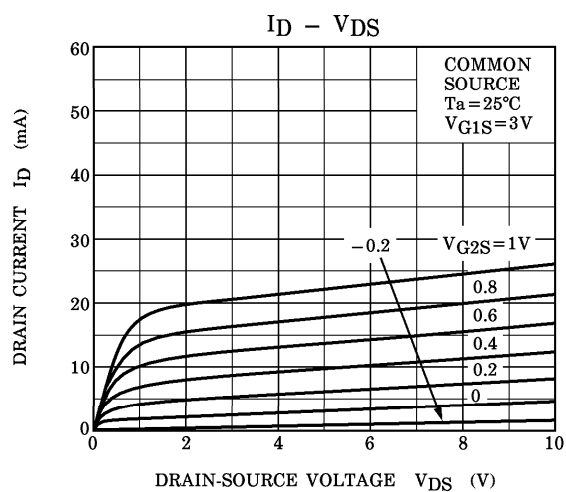
Unit in mm

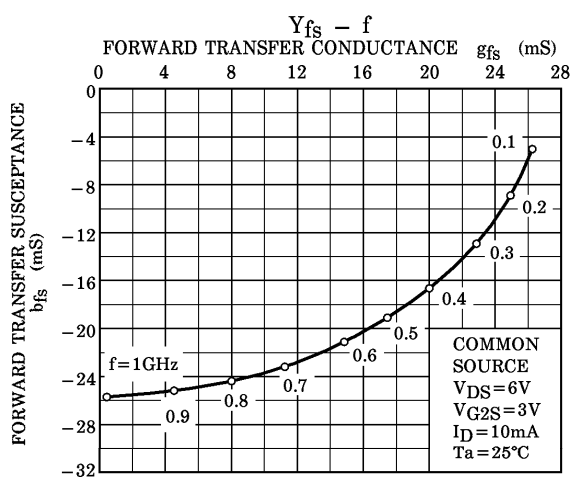
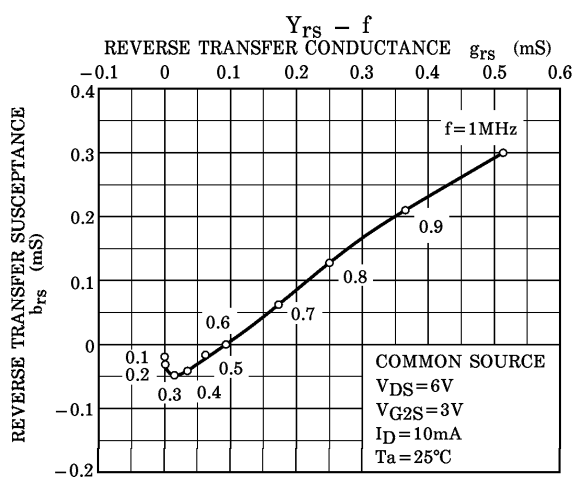
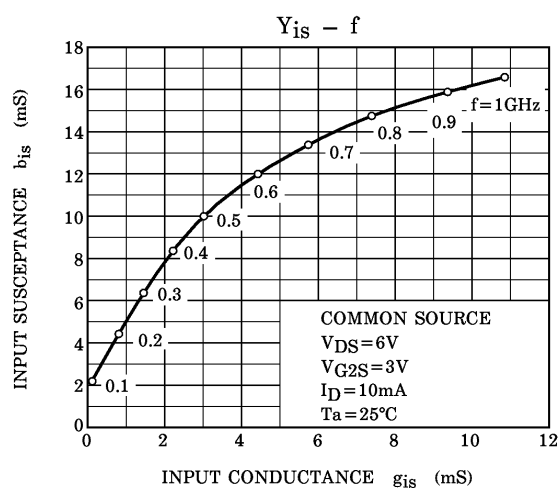
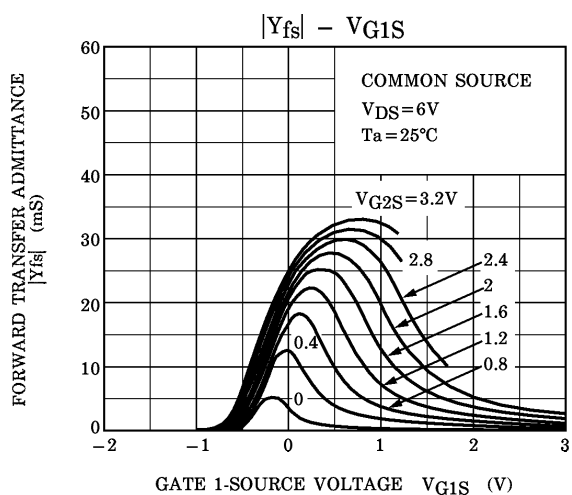
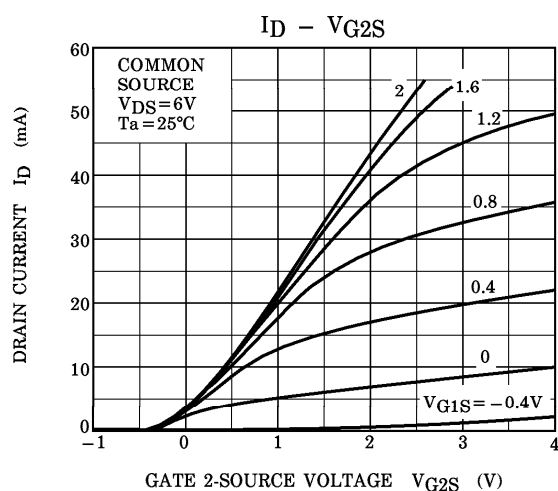
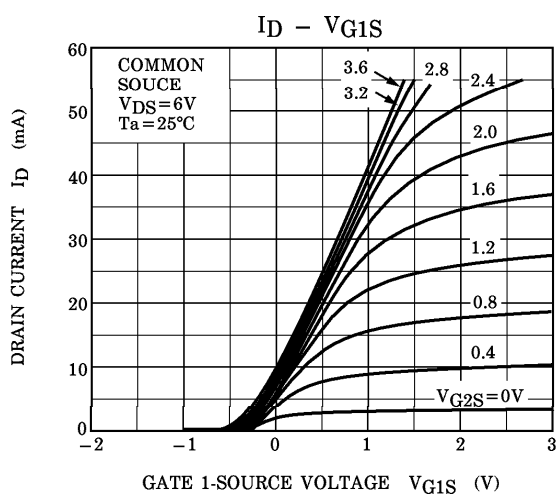


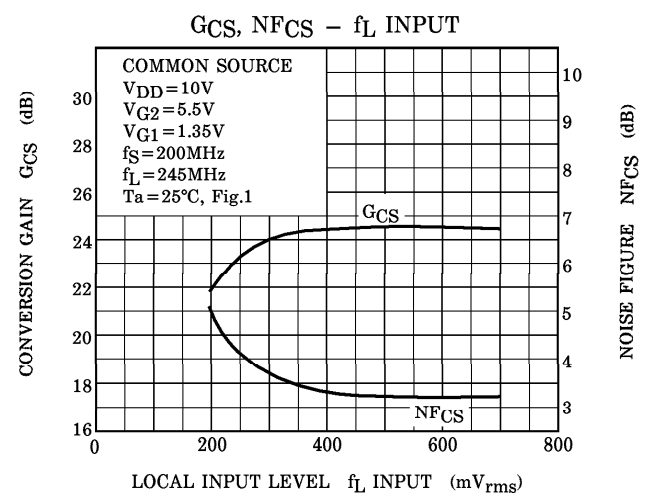
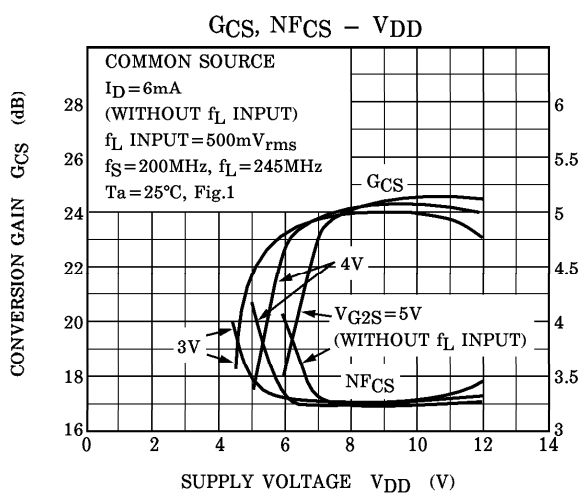
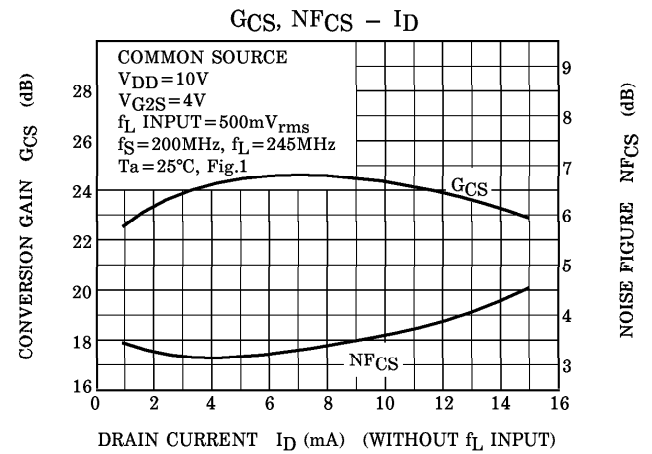
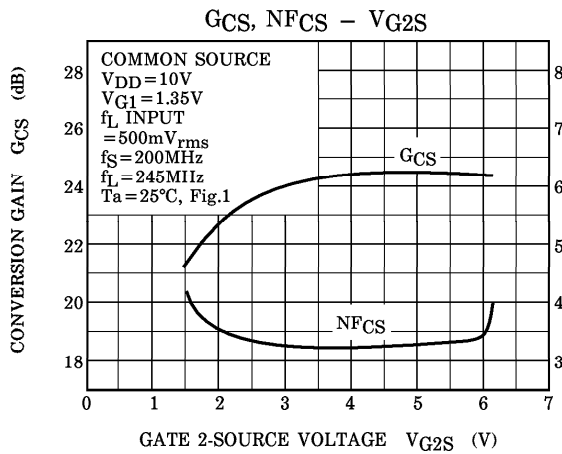
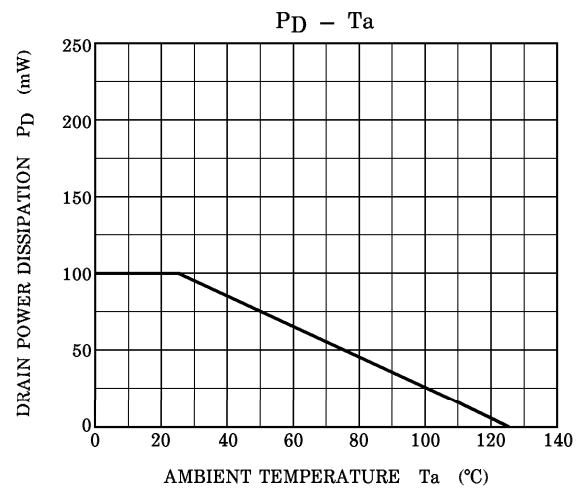
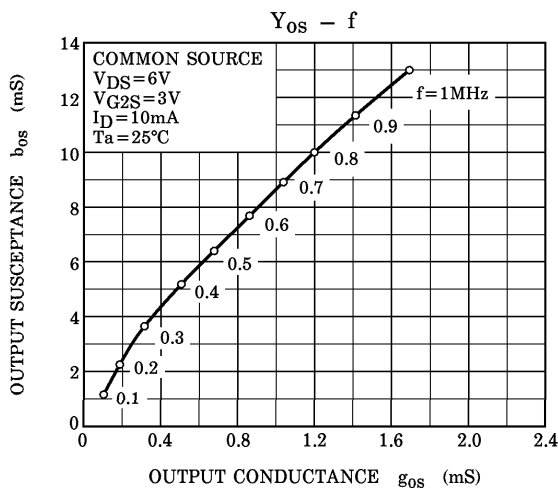
Weight : 0.006g

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- $I_D - V_{DS}$**
- COMMON
SOURCE
 $T_a = 25^\circ\text{C}$
 $V_{G2S} = 3\text{V}$
- $V_{G1S} = 1\text{V}$
- 0.8
0.6
0.4
0.2
0
-0.2
-0.4
- DRAIN CURRENT I_D (mA)
- DRAIN-SOURCE VOLTAGE V_{DS} (V)







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