

TOSHIBA FIELD EFFECT TRANSISTOR SILICON N CHANNEL DUAL GATE MOS TYPE

3SK207

TV TUNER, UHF RF AMPLIFIER APPLICATIONS

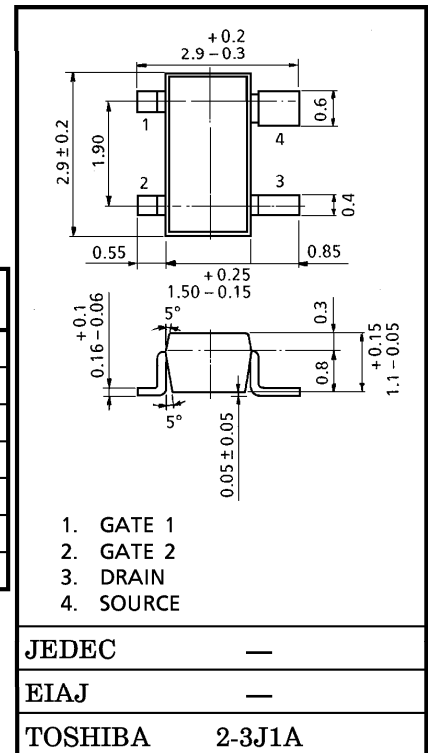
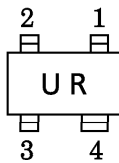
Unit in mm

- Superior Cross Modulation Performance.
- Low Reverse Transfer Capacitance : $C_{RSS}=0.015\text{pF}$ (Typ.)
- Low Noise Figure : $NF=1.9\text{dB}$ (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	150	mW
Chanel Temperature	T_{ch}	125	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	$-55\sim 125$	$^\circ\text{C}$

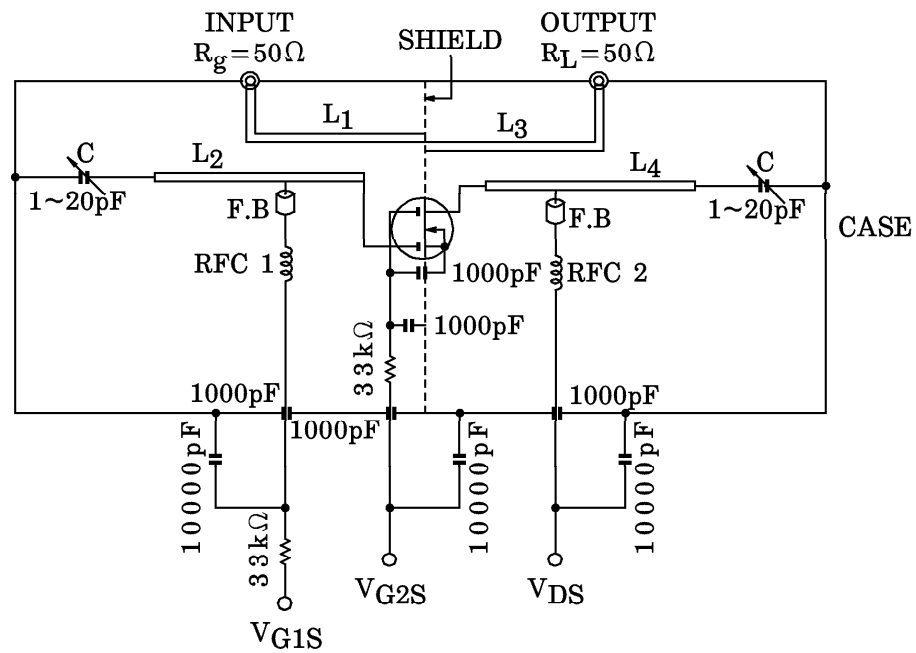
Marking



Weight : 0.013g

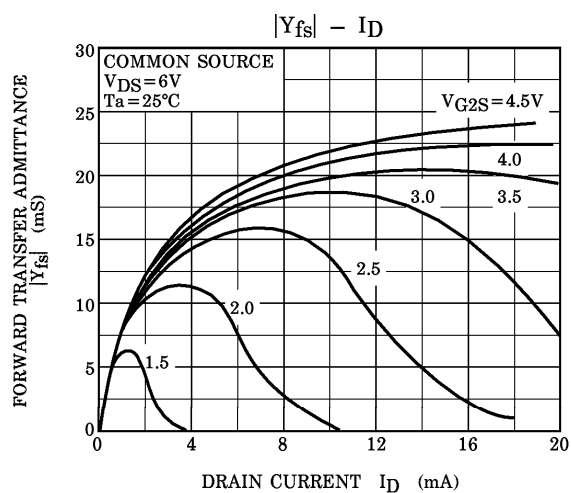
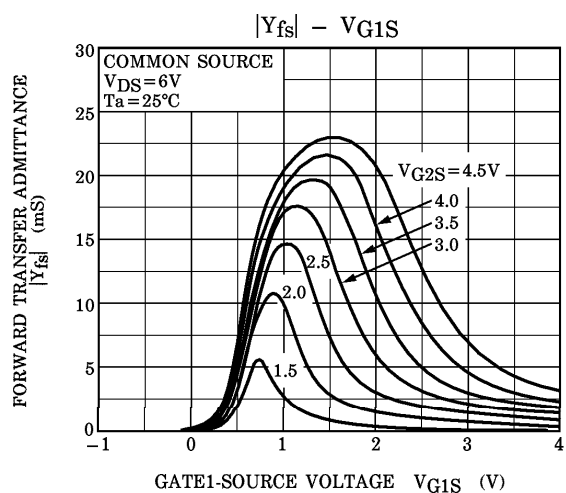
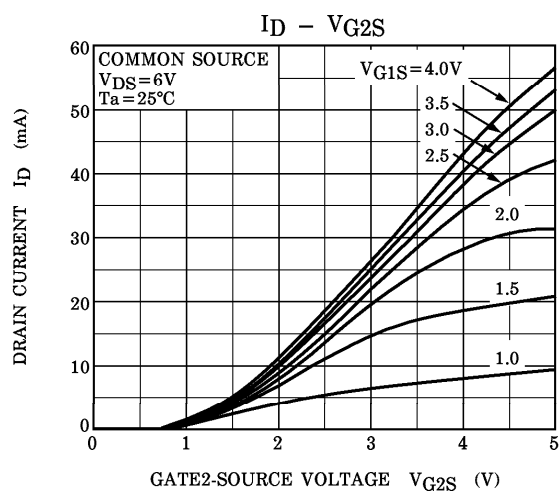
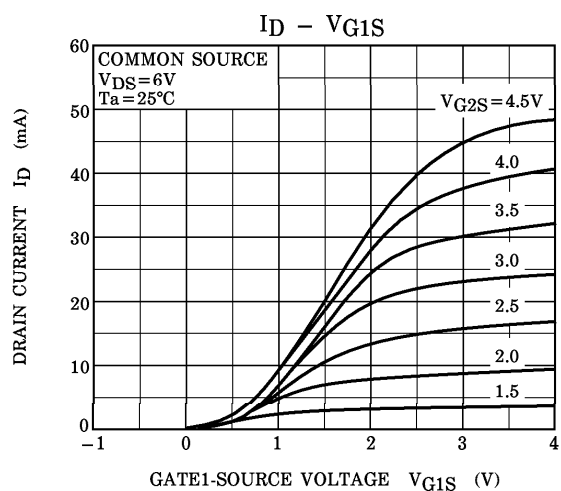
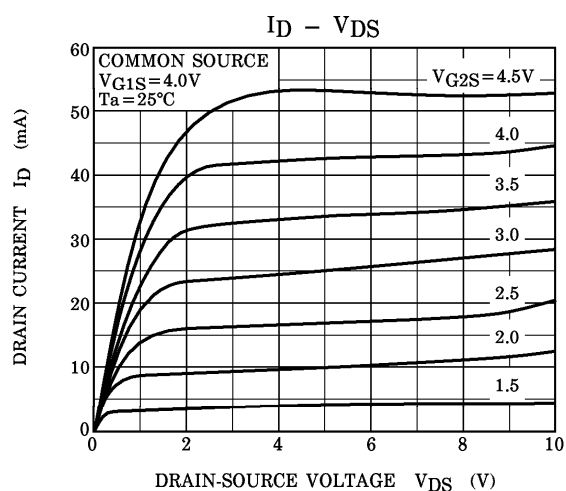
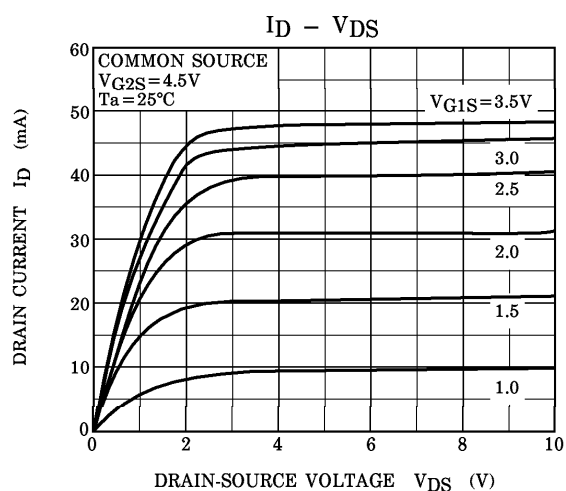
ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

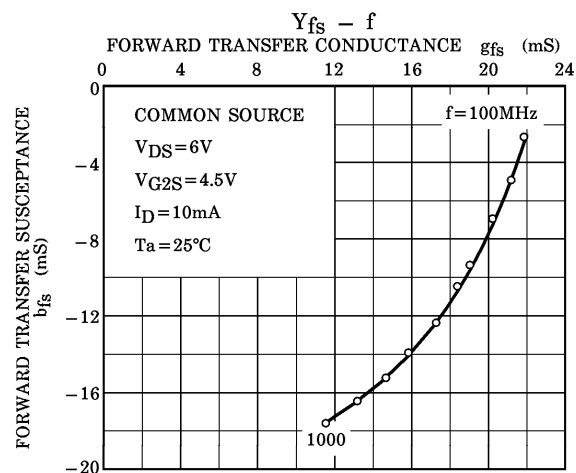
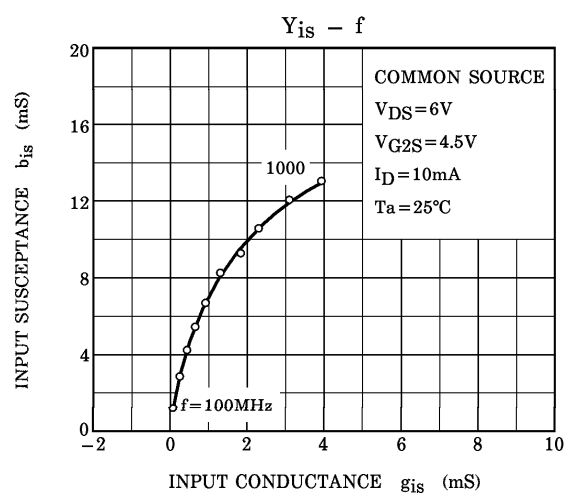
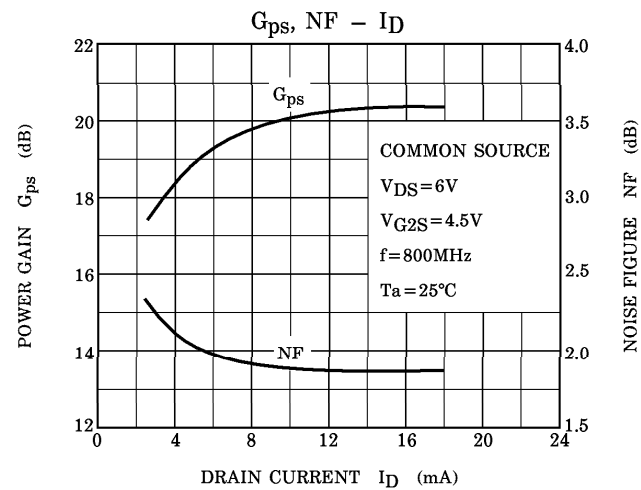
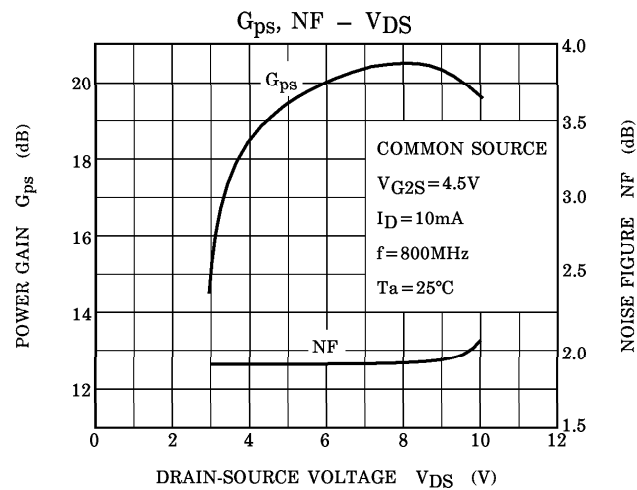
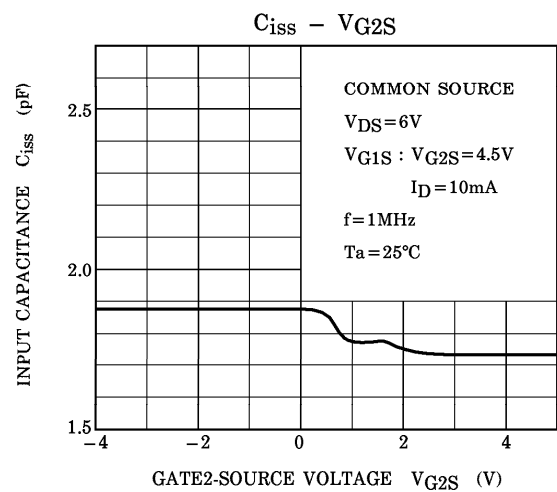
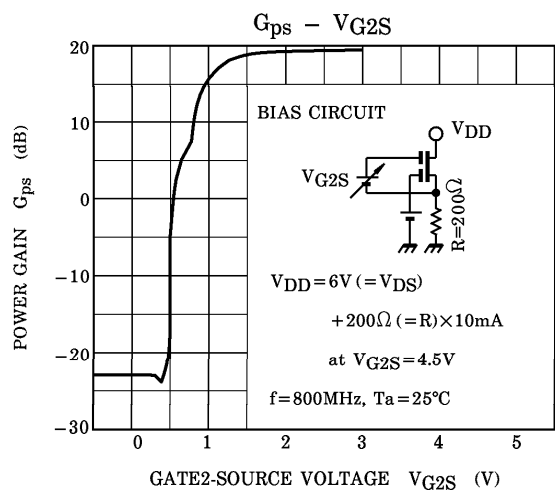
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate 1 Leakage Current	I_{G1SS}	$V_{DS}=0, V_{G1S}=\pm 6V, V_{G2S}=0$	—	—	± 50	nA
Gate 2 Leakage Current	I_{G2SS}	$V_{DS}=0, V_{G1S}=0, V_{G2S}=\pm 6V$	—	—	± 50	nA
Drain-Source Voltage	$V_{(BR)DSX}$	$V_{G1S}=-4V, V_{G2S}=-4V$ $I_D=100\mu A$	13.5	—	—	V
Drain Current	I_{DSS}	$V_{DS}=6V, V_{G1S}=0, V_{G2S}=4.5V$	0	—	0.1	mA
Gate 1-Source Cut-off Voltage	$V_{G1S(OFF)}$	$V_{DS}=6V, V_{G2S}=4.5V,$ $I_D=100\mu A$	0	—	1.0	V
Gate 2-Source Cut-off Voltage	$V_{G2S(OFF)}$	$V_{DS}=6V, V_{G1S}=4V,$ $I_D=100\mu A$	0.5	1.0	1.5	V
Forward Transfer Admittance	$ Y_{fs} $	$V_{DS}=6V, V_{G2S}=4.5V$ $I_D=10mA, f=1kHz$	—	21.5	—	mS
Input Capacitance	C_{iss}	$V_{DS}=6V, V_{G2S}=4.5V$	1.0	1.6	2.4	pF
Reverse Transfer Capacitance	C_{rss}	$I_D=10mA, f=1MHz$	—	0.015	0.03	pF
Power Gain	G_{ps}	$V_{DS}=6V, V_{G2S}=4.5V$	18	19.5	—	dB
Noise Figure	NF	$I_D=10mA, f=800MHz$ (Fig.1)	—	1.9	3.0	dB

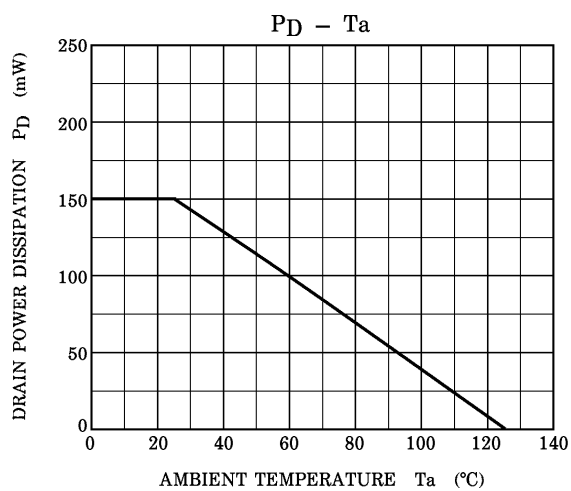
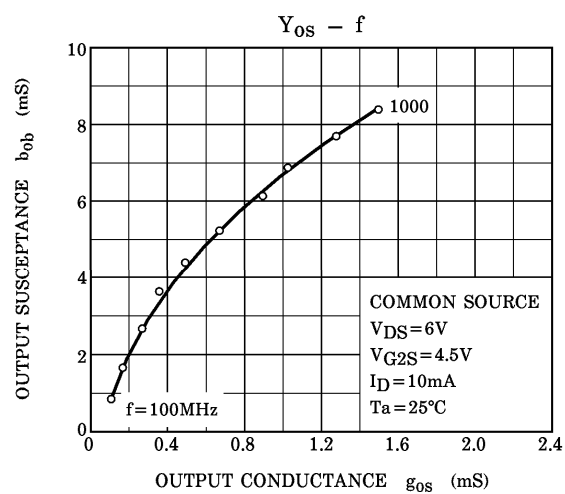
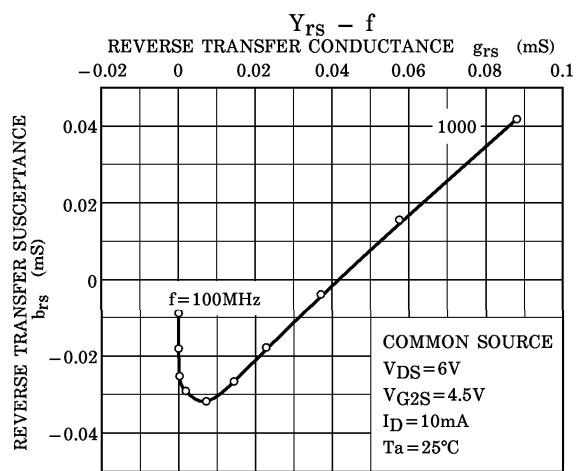


- $L_1 \sim L_4$: $\phi 0.8\text{mm}$ SILVER PLATED COPPER WIRE
 C : AIR TRIMMER TTA25A200A (MURATA MFG. Co., Ltd.)
 RFC 1 : $\phi 0.35\text{mm}$ COPPER WIRE 3mm ID, 7T
 RFC 2 : $\phi 0.35\text{mm}$ COPPER WIRE 3mm ID, 10T

Fig.1 800MHz G_{ps} , NF TEST CIRCUIT







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