

TOSHIBA FIELD EFFECT TRANSISTOR SILICON N CHANNEL DUAL GATE MOS TYPE

3SK249

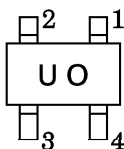
TV TUNER, UHF RF AMPLIFIER APPLICATIONS

- Superior Cross Modulation Performance.
- Low Reverse Transfer Capacitance : $C_{rss}=20\text{fF}$ (Typ.)
- Low Noise Figure. : $NF=1.5\text{dB}$ (Typ.)

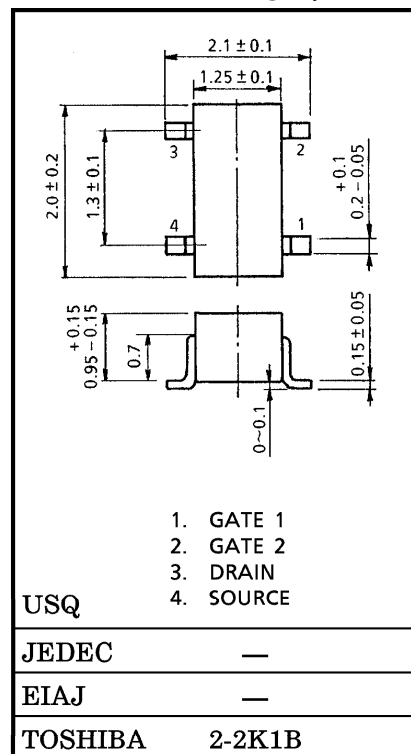
MAXIMUM RATINGS ($T_a = 25^\circ\text{C}$)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Drain-Source Voltage	V_{DS}	12.5	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}	$-55\sim 125$	$^\circ\text{C}$

Marking

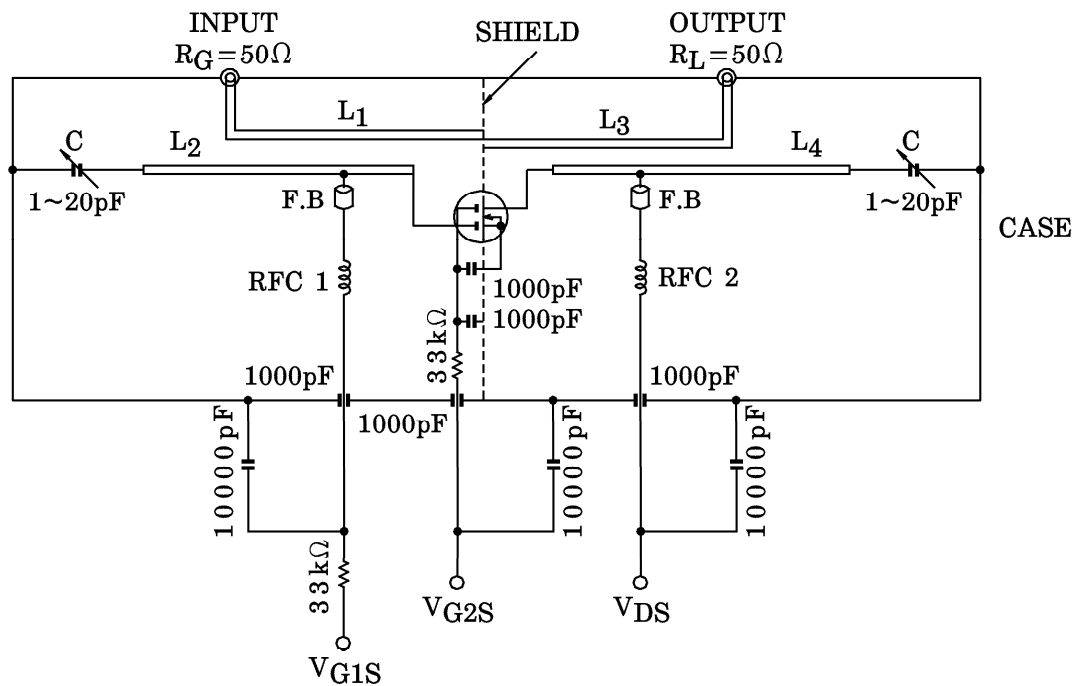


Unit in mm

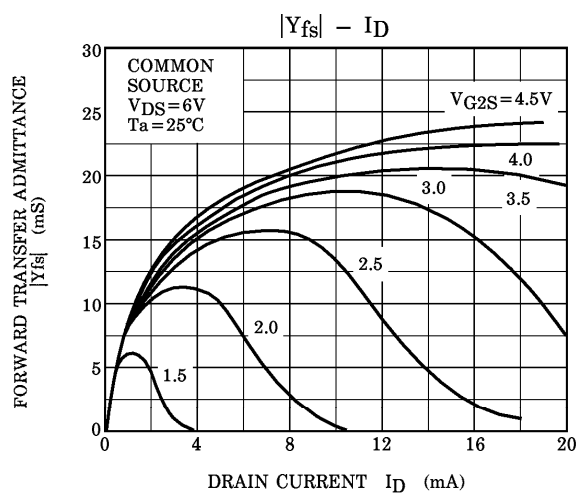
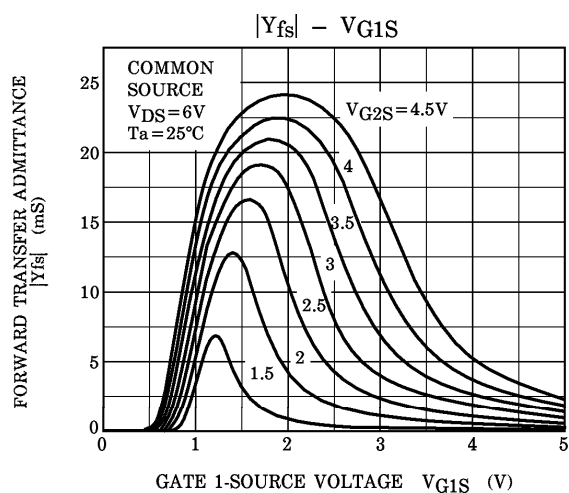
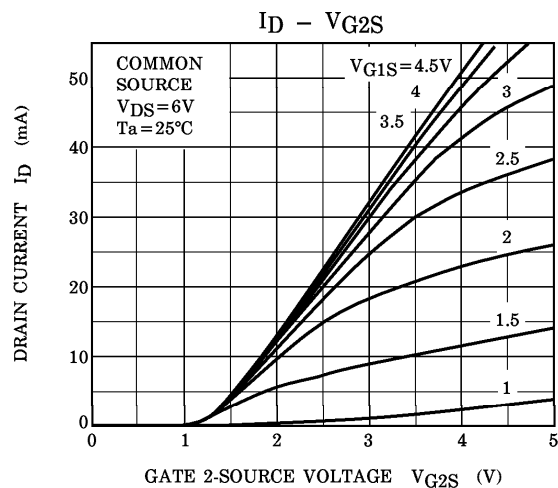
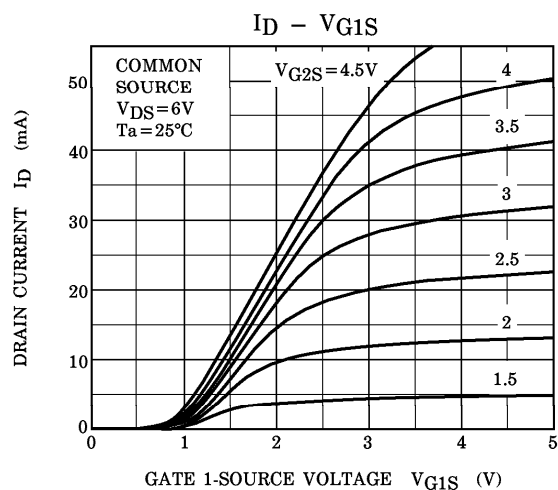
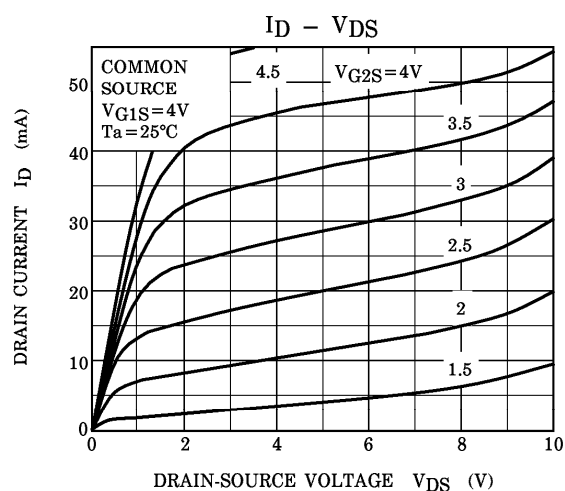
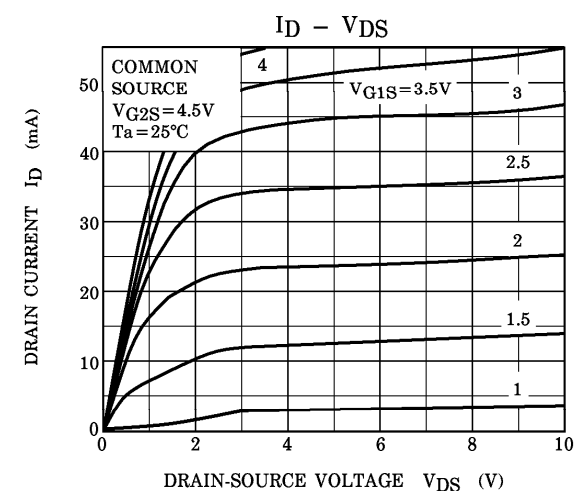
ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

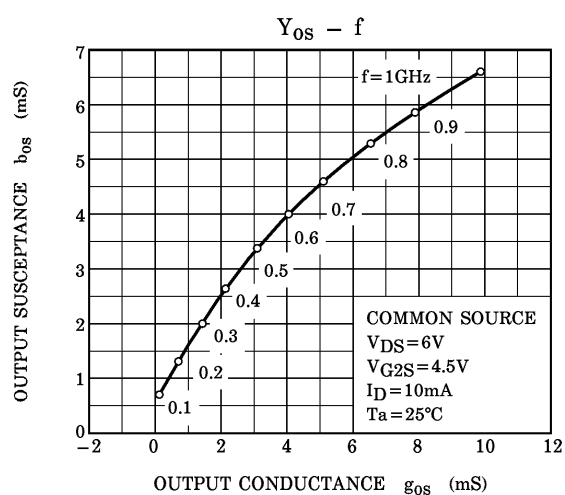
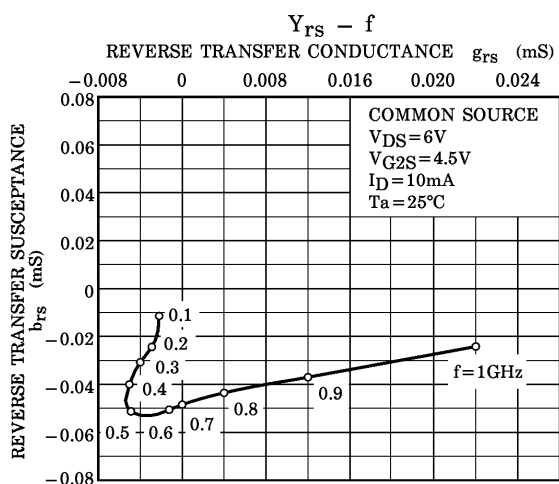
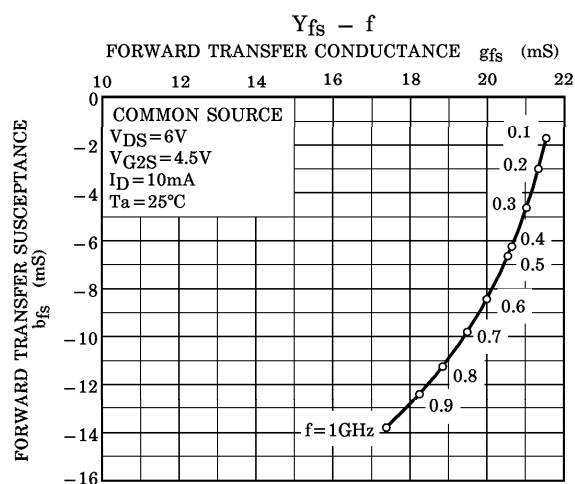
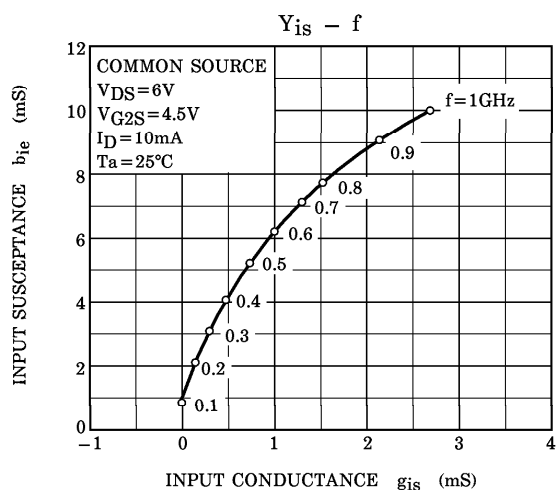
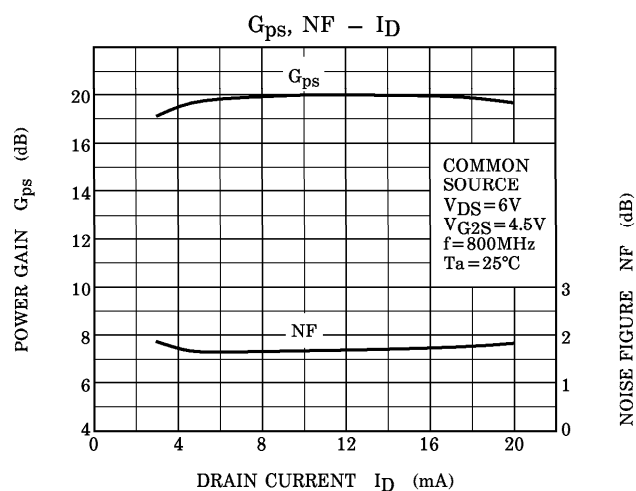
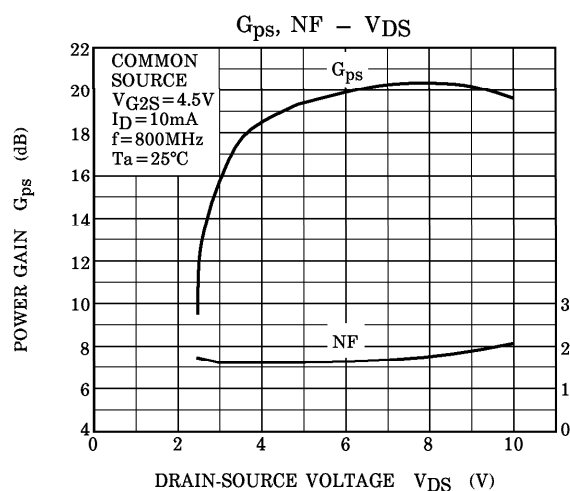
Weight : 0.006g

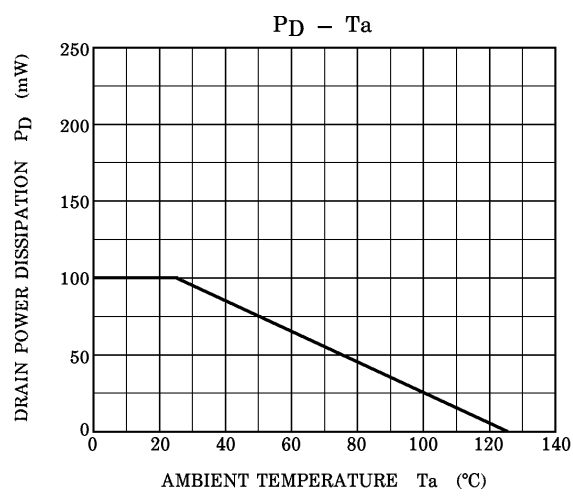
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate 1 Leakage Current	I_{G1SS}	$V_{DS}=0, V_{G1S}=\pm 6V, V_{G2S}=0$	—	—	± 50	nA
Gate 2 Leakage Current	I_{G2SS}	$V_{DS}=0, V_{G1S}=0, V_{G2S}=\pm 6V$	—	—	± 50	nA
Drain-Source Voltage	$V_{(BR)DSX}$	$V_{G1S}=-0.5V, V_{G2S}=-0.5V$ $I_D=100\mu A$	12.5	—	—	V
Drain Current	I_{DSS}	$V_{DS}=6V, V_{G2S}=4.5V,$ $V_{G1S}=0V$	0	—	0.1	mA
Gate 1-Source Cut-off Voltage	$V_{G1S(OFF)}$	$V_{DS}=6V, V_{G2S}=4.5V,$ $I_D=100\mu A$	0.4	0.9	1.4	V
Gate 2-Source Cut-off Voltage	$V_{G2S(OFF)}$	$V_{DS}=6V, V_{G1S}=4.0V,$ $I_D=100\mu A$	0.5	1.0	1.5	V
Forward Transfer Admittance	$ Y_{fs} $	$V_{DS}=6V, V_{G2S}=4.5V,$ $I_D=10mA, f=1kHz$	17	21	—	mS
Input Capacitance	C_{iss}	$V_{DS}=6V, V_{G2S}=4.5V,$ $I_D=10mA, f=1MHz$	0.9	1.5	2.1	pF
Reverse Transfer Capacitance	C_{rss}		—	20	40	fF
Power Gain	G_{ps}	$V_{DS}=6V, V_{G2S}=4.5V,$ $I_D=10mA, f=800MHz$	18	20	—	dB
Noise Figure	NF		—	1.5	2.5	

Fig.1 G_{ps} , NF Test Circuit

- $L_1 \sim L_4$: $\phi 0.8\text{mm}$ 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







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