TOSHIBA FIELD EFFECT TRANSISTOR SILICON N CHANNEL DUAL GATE MOS TYPE

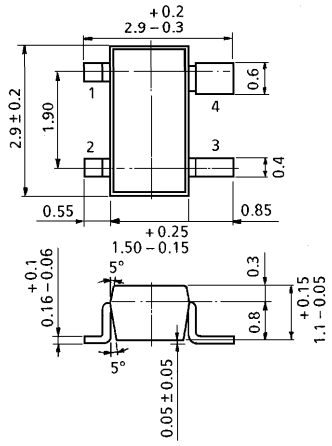
3SK126

TV TUNER, VHF RF AMPLIFIER APPLICATIONS

TV TUNER VHF MIXER APPLICATIONS

- Superior Cross Modulation Performance.
- Low Reverse Transfer Capacitance : C_{rss} = 0.03pF (Typ.)
- Low Noise Figure : NF = 1.4dB (Typ.)

Unit in mm



1. GATE 1
2. GATE 2
3. DRAIN
4. SOURCE

JEDEC	—
EIAJ	—
TOSHIBA	2-3J1A

Weight : 0.013g

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Drain-Source Voltage	V_{DS}	15	V
Gate 1-Source Voltage	V_{G1S}	±9	V
Gate 2-Source Voltage	V_{G2S}	±9	V
Drain Current	I_D	30	mA
Drain Power Dissipation	P_D	150	mW
Chanel Temperature	Tch	125	°C
Storage Temperature Range	T_{stg}	−55~125	°C

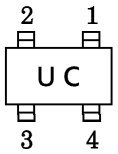
ELECTRICAL CHARACTERISTICS (Ta = 25°C)

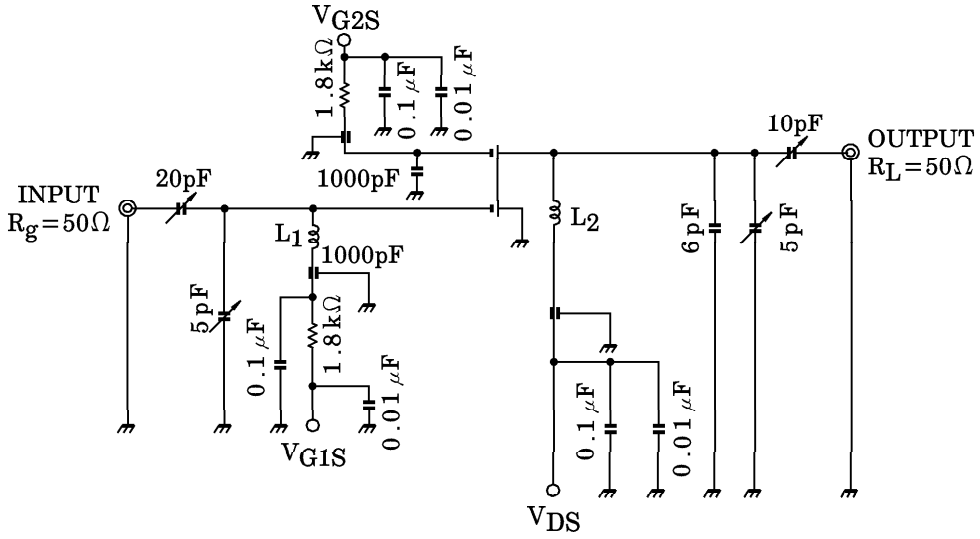
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate 1 Leakage Current	I_{G1SS}	V_{DS}=0, V_{G1S}=±7V, V_{G2S}=0	—	—	±50	nA
Gate 2 Leakage Current	I_{G2SS}	V_{DS}=0, V_{G1S}=0, V_{G2S}=±7V	—	—	±50	nA
Drain-Source Voltage	$V_{(BR)DSX}$	V_{G1S}=−4V, V_{G2S}=−4V, I_D=100μA	15	—	—	V
Drain Current	I_{DSS} (Note)	V_{DS}=6V, V_{G1S}=0, V_{G2S}=3V	0	—	6	mA
Gate 1-Source Cut-off Voltage	$V_{G1S(OFF)}$	V_{DS}=6V, V_{G2S}=3V, I_D=100μA	−1	—	1	V
Gate 2-Source Cut-off Voltage	$V_{G2S(OFF)}$	V_{DS}=6V, V_{G1S}=3V, I_D=100μA	−0.5	—	1	V
Forward Transfer Admittance	$\|y_{fs}\|$	V_{DS}=6V, V_{G2S}=3V I_D=10mA, f=1kHz	13	20	—	mS
Input Capacitance	C_{iss}	V_{DS}=6V, V_{G2S}=3V	—	4.25	5.5	pF
Reverse Transfer Capacitance	C_{rss}	I_D=10mA, f=1MHz	—	0.03	0.05	pF
Power Gain	G_{ps}	V_{DS}=6V, V_{G2S}=3V	20	25	—	dB
Noise Figure	NF	I_D=10mA, f=200MHz	—	1.4	2.8	dB

Note : I_{DSS} Classification O : 0~2mA, Y : 1~6mA

961001EAA2

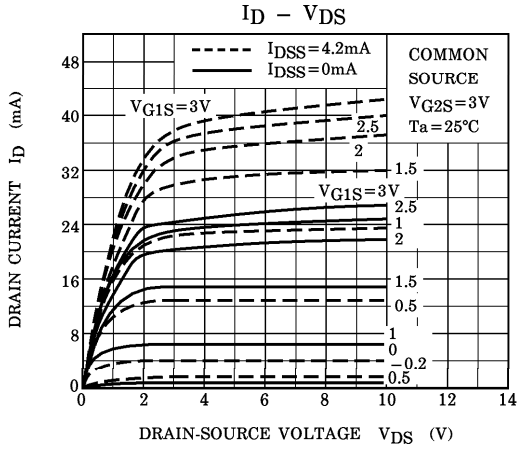
Marking

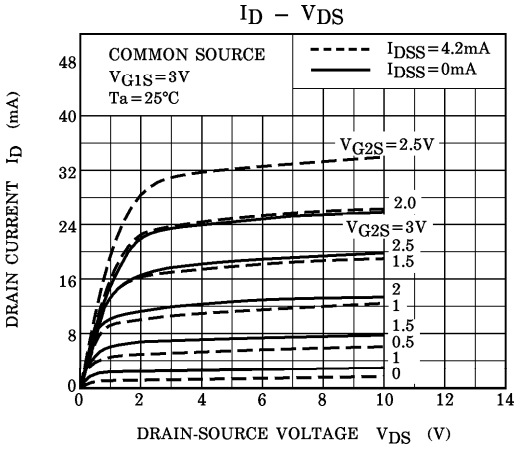




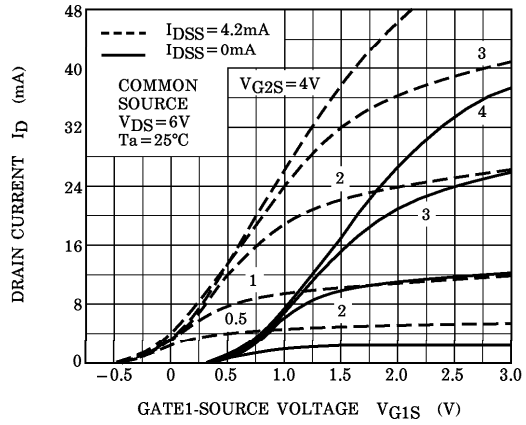
L_1 : 1mmϕ Ag Plated Copper Wire, 2 Turns, 8mm I_D
L_2 : 1mmϕ Ag Plated Copper Wire, 2.5 Turns, 8mm I_D

Fig.1 200MHz G_{ps}, NF TEST CIRCUIT

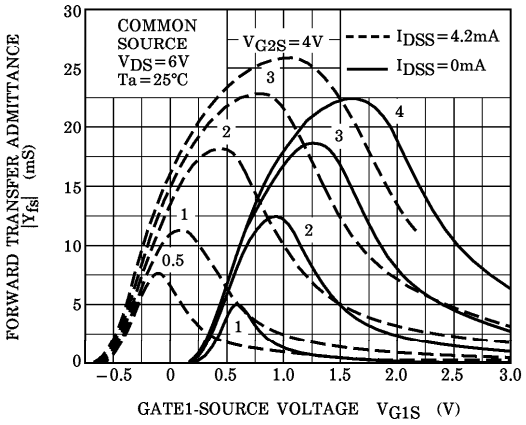




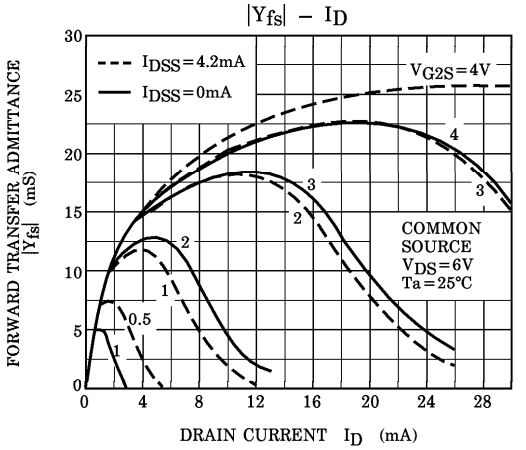
I_D – V_{G1S}



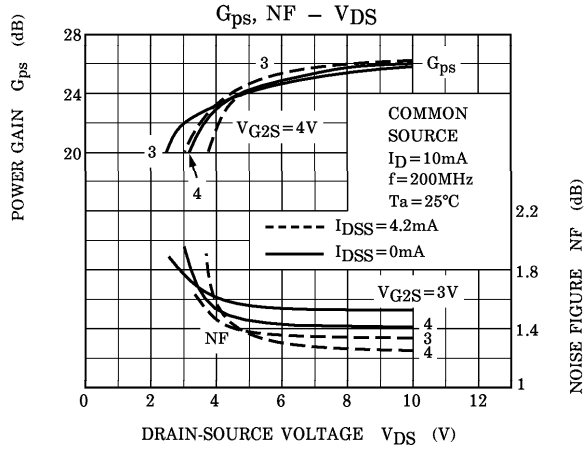
$|Y_{fs}|$ – V_{G1S}



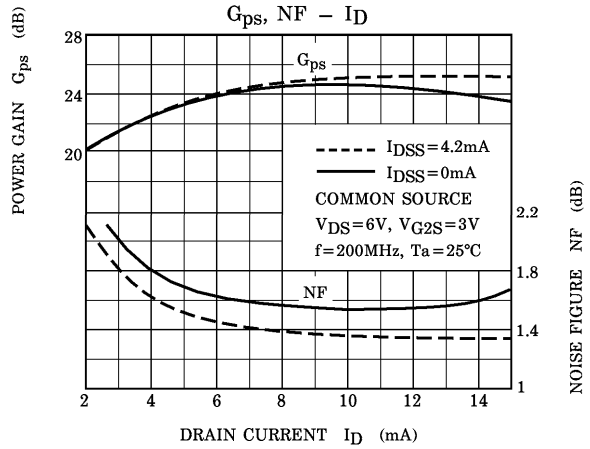
$|Y_{fs}|$ – I_D



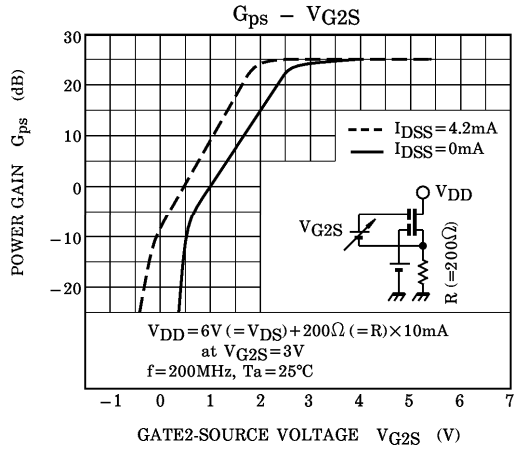
G_{ps}, NF – V_{DS}



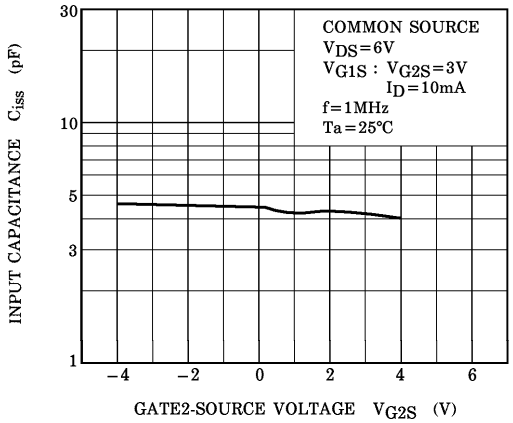
G_{ps}, NF – I_D



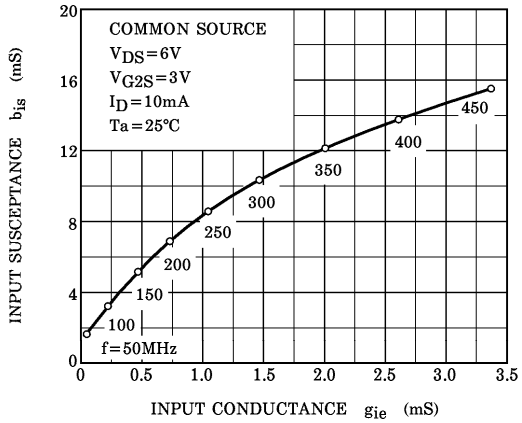
G_{ps} – V_{G2S}



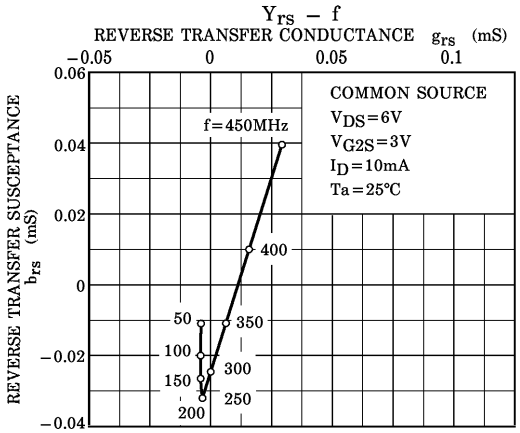
C_{iss} – V_{G2S}



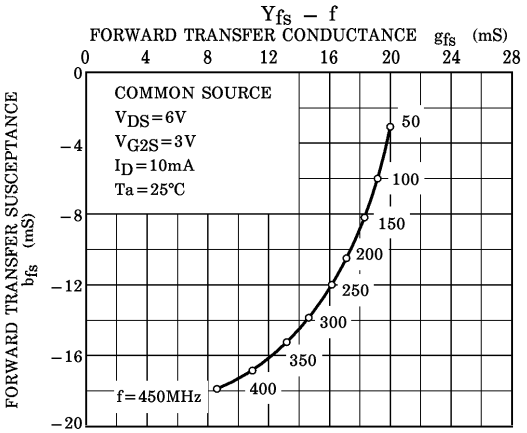
Y_{is} – f



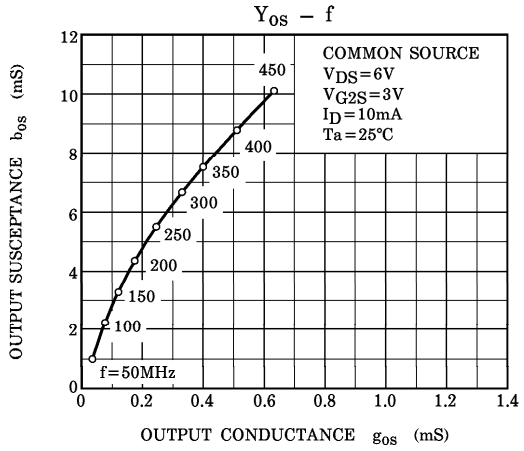
Y_{rs} – f



Y_{fs} – f



Y_{os} – f



P_D – Ta