Беларусь г.Минск тел./факс 8(017)200-56-46 электронные компоненты радиодетали www.fotorele.net e:mail minsk17@tut.by

TOSHIBA FIELD EFFECT TRANSISTOR SILICON N CHANNEL DUAL GATE MOS TYPE

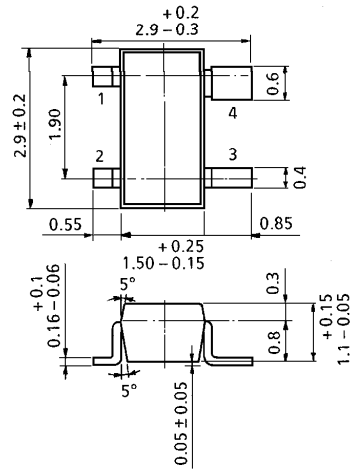
3SK127

TV TUNER, UHF RF AMPLIFIER APPLICATIONS

TV TUNER, UHF MIXER APPLICATIONS

- Superior Cross Modulation Performance.
- Low Reverse Transfer Capacitance : C_{rss} = 0.03pF (Max.)
- Low Noise Figure : NF = 3.2dB (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}	±8	V
Gate 2 - Source Voltage	V_{G2S}	±8	V
Drain Current	I_D	30	mA
Drain Power Dissipation	P_D	150	mW
Channel Temperature	T_{ch}	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} = 0V, V_{G1S} = ±6V, V_{G2S} = 0V	—	—	±50	nA
Gate 2 Leakage Current	I_{G2SS}	V_{DS} = 0V, V_{G1S} = 0V, V_{G2S} = ±6V	—	—	±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} = 0V, V_{G2S} = 3V	0	—	6	mA
Gate 1-Source Cut-off Voltage	$V_{G1S(OFF)}$	V_{DS} = 6V, V_{G2S} = 3V, I_D = 100μA	−1.5	—	1.0	V
Gate 2-Source Cut-off Voltage	$V_{G2S(OFF)}$	V_{DS} = 6V, V_{G1S} = 3V, I_D = 100μA	−1.0	—	1.0	V
Forward Transfer Admittance	$\|Y_{fs}\|$	V_{DS} = 6V, V_{G2S} = 3V, I_D = 10mA, f = 1kHz	—	17	—	mS
Input Capacitance	C_{iss}	V_{DS} = 6V, V_{G2S} = 3V, I_D = 10mA, f = 1MHz	—	2.0	—	pF
Reverse Transfer Capacitance	C_{rss}		—	—	0.03	pF
Power Gain	G_{ps}	V_{DS} = 6V, V_{G2S} = 3V, I_D = 10mA, f = 800MHz (Fig.1)	—	16	—	dB
Noise Figure	NF		—	3.2	—	dB

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

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Marking

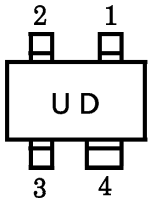
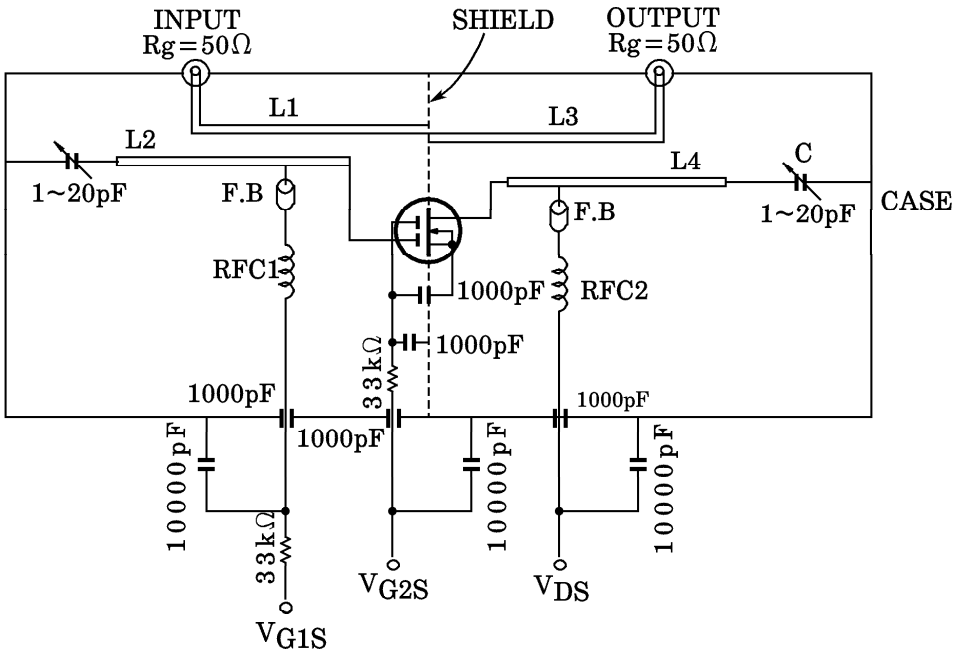


Fig. 1 800MHz Gps, NF TEST CIRCUIT



L1~L4 : ϕ0.8mm SILVER PLATED COPPER WIRE
C : AIR TRIMMER TTA25A200A (MURATA MFG, Co., Ltd.)
RFC 1 : ϕ0.35mm COPPER WIRE 3mm ID, 7T
RFC 2 : ϕ0.35mm COPPER WIRE 3mm ID, 10T

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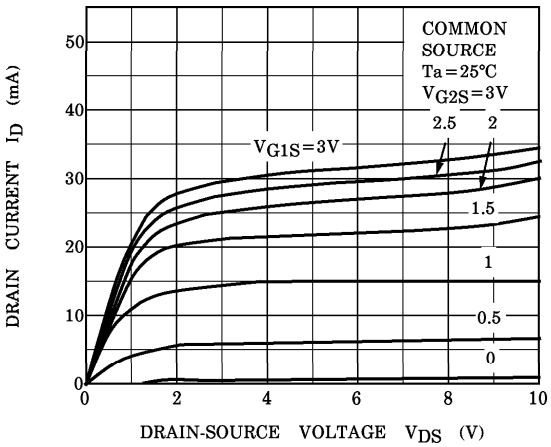
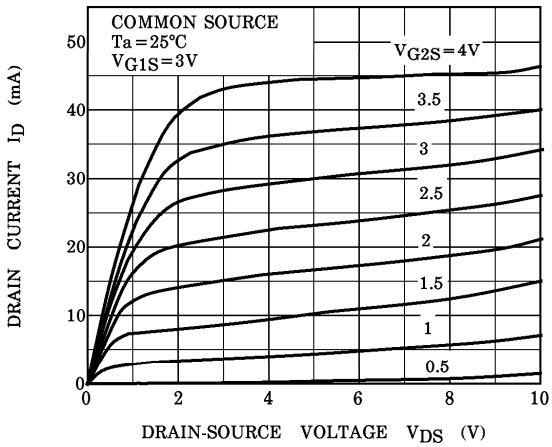
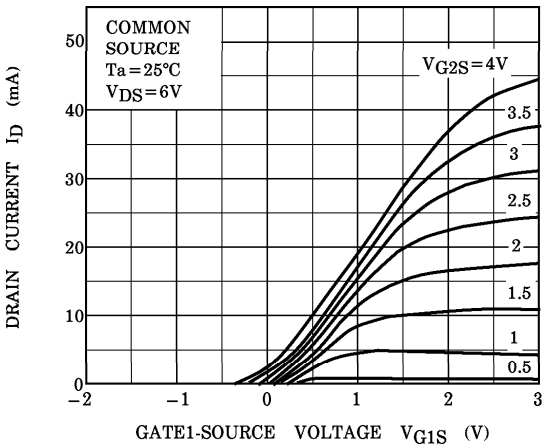
$I_D - V_{DS}$



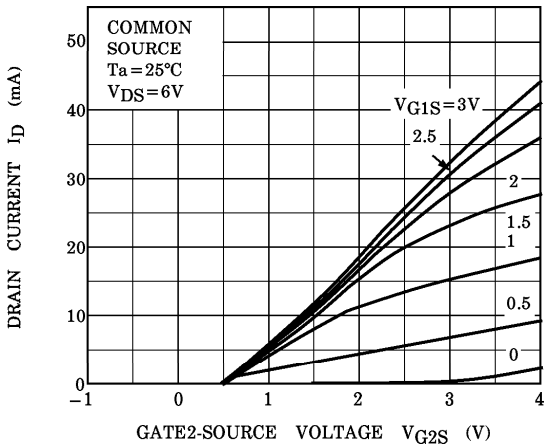
$I_D - V_{DS}$



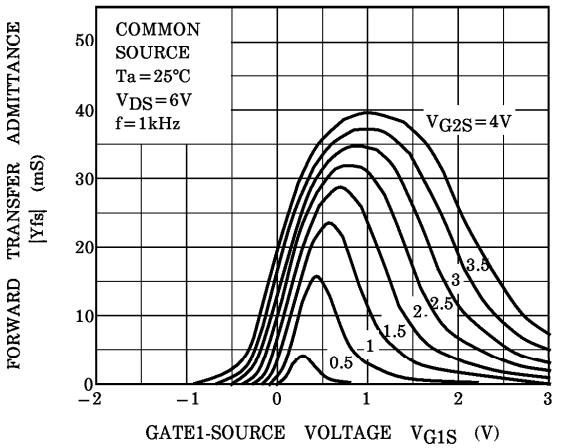
$I_D - V_{G1S}$



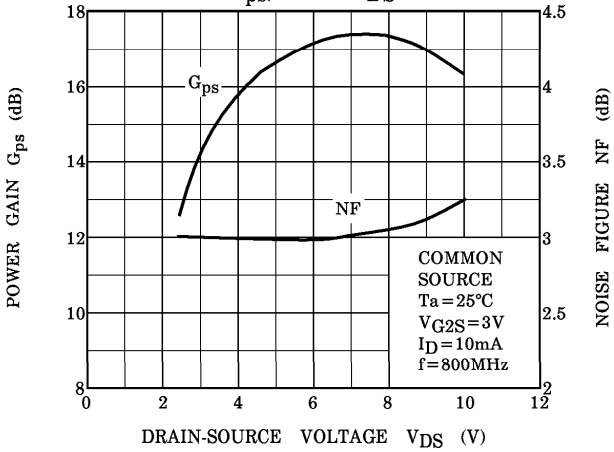
$I_D - V_{G2S}$



$|Y_{fs}| - V_{G1S}$



$G_{ps}, NF - V_{DS}$



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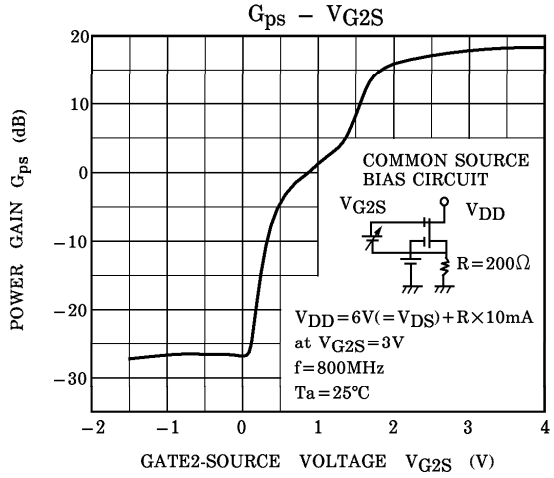
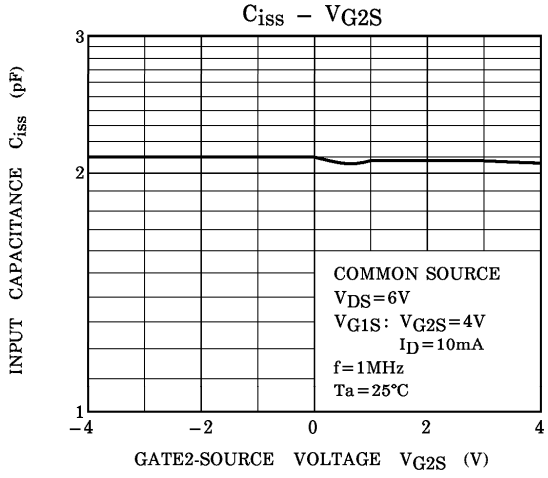
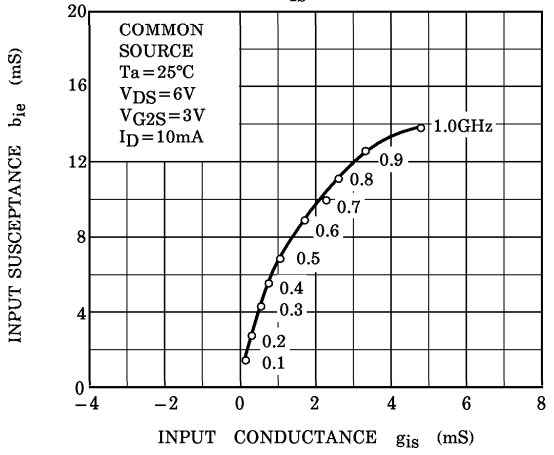
G_{ps} – V_{G2S}



C_{iss} – V_{G2S}

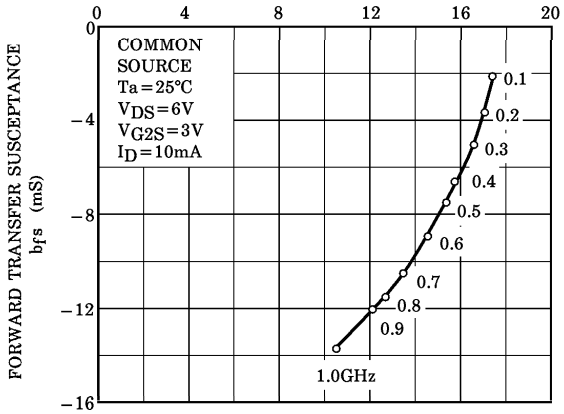


Y_{is} – f



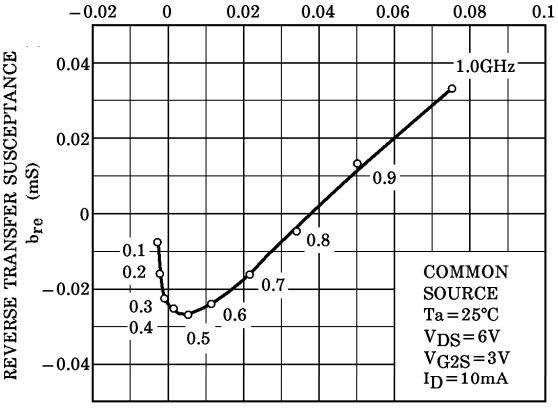
Y_{fs} – f

FORWARD TRANSFER CONDUCTANCE g_{fe} (mS)

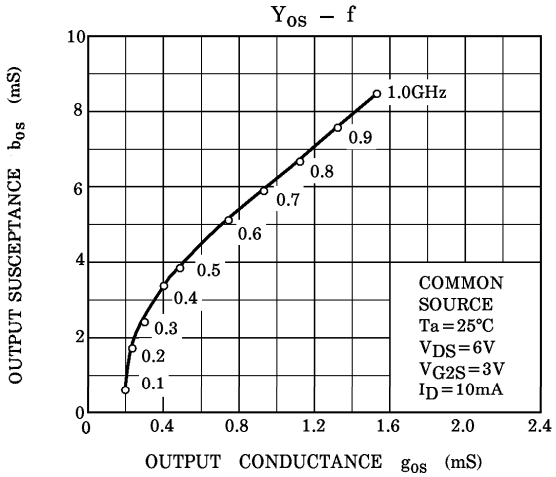


Y_{rs} – f

REVERSE TRANSFER CONDUCTANCE g_{re} (mS)



Y_{os} – f



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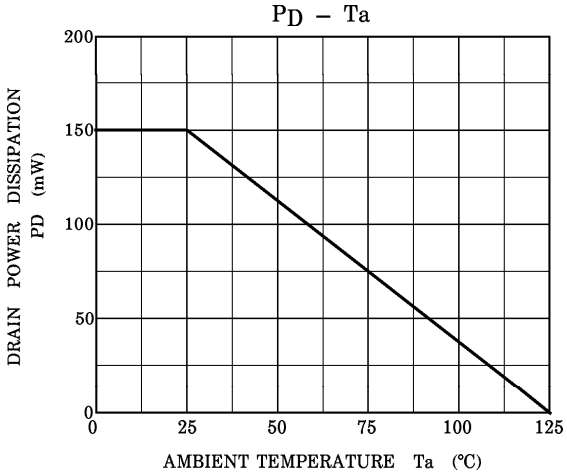

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