

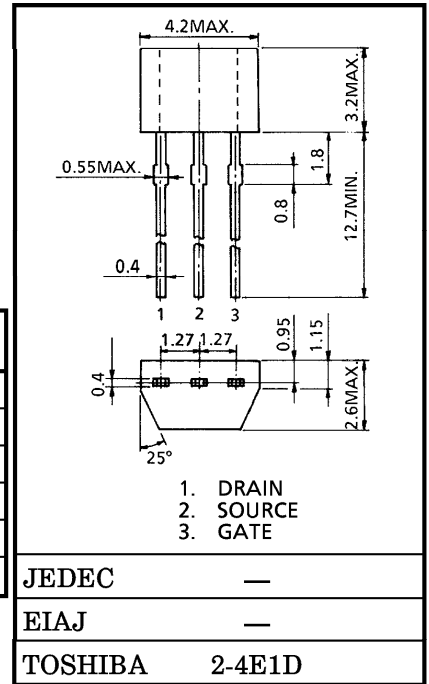
TOSHIBA FIELD EFFECT TRANSISTOR SILICON N CHANNEL MOS TYPE

# 2SK241

FM TUNER, VHF AND RF AMPLIFIER APPLICATIONS

Unit in mm

- Low Reverse Transfer Capacitance :  $C_{RSS} = 0.035 \text{ pF}$  (Typ.)
- Low Noise Figure :  $NF = 1.7\text{dB}$  (Typ.)
- High Power Gain :  $G_{PS} = 28\text{dB}$  (Typ.)
- Recommend Operation Voltage :  $5\sim 15 \text{ V}$



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

CHARACTERISTIC	SYMBOL	RATING	UNIT
Drain-Source Voltage	$V_{DS}$	20	V
Gate-Source Voltage	$V_{GS}$	$\pm 5$	V
Drain Current	$I_D$	30	mA
Drain Power Dissipation	$P_D$	200	mW
Chanel Temperature	$T_{ch}$	125	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	$-55\sim 125$	$^\circ\text{C}$

JEDEC	—
EIAJ	—
TOSHIBA	2-4E1D

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

Weight : 0.13 g

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate Leakage Current	$I_{GSS}$	$V_{DS} = 0, V_{GS} = \pm 5 \text{ V}$	—	—	$\pm 50$	nA
Drain-Source Voltage	$V_{DSX}$	$V_{GS} = -4 \text{ V}, I_D = 100 \mu\text{A}$	20	—	—	V
Drain Current	$I_{DSS}$	$V_{DS} = 10 \text{ V}, V_{GS} = 0$ (Note)	1.5	—	14	mA
Gate-Source Cut-off Voltage	$V_{GS}(\text{OFF})$	$V_{DS} = 10 \text{ V}, I_D = 100 \mu\text{A}$	—	—	-2.5	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS} = 10 \text{ V}, V_{GS} = 0, f = 1 \text{ kHz}$	—	10	—	mS
Input Capacitance	$C_{iss}$	$V_{DS} = 10 \text{ V}, V_{GS} = 0,$ $f = 1 \text{ MHz}$	—	3.0	—	pF
Reverse Transfer Capacitance	$C_{rss}$		—	0.035	0.050	pF
Power Gain	$G_{ps}$	$V_{DS} = 10 \text{ V}, V_{GS} = 0,$	—	28	—	dB
Noise Figure	NF	$f = 100 \text{ MHz}$ (Fig.1)	—	1.7	3.0	dB

(Note) :  $I_{DSS}$  Classification O : 1.5~3.5, Y : 3.0~7.0, GR : 6.0~14.0

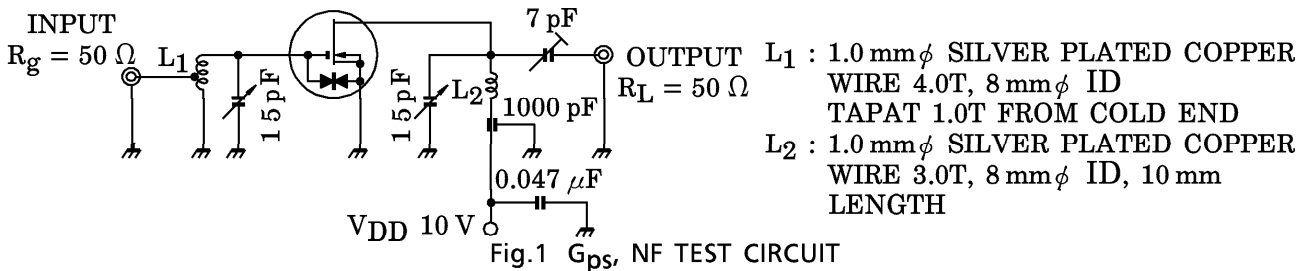
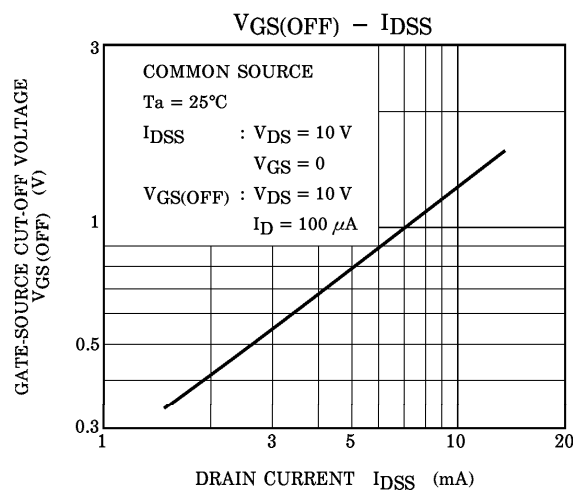
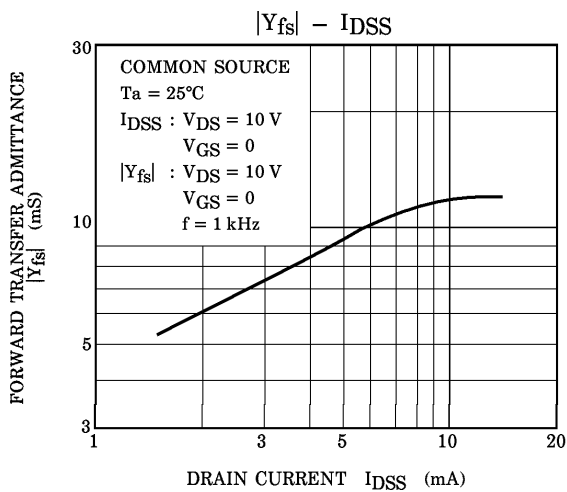
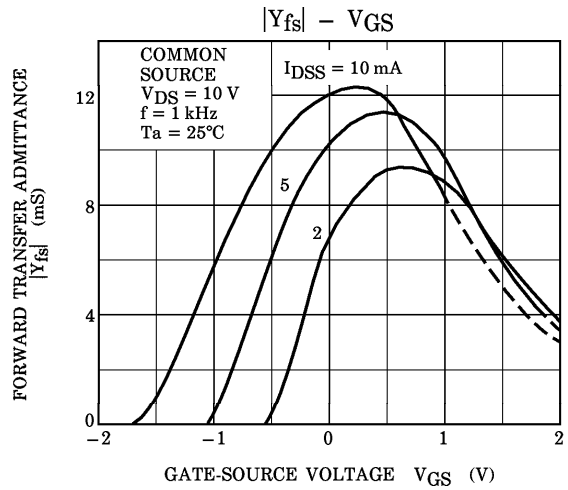
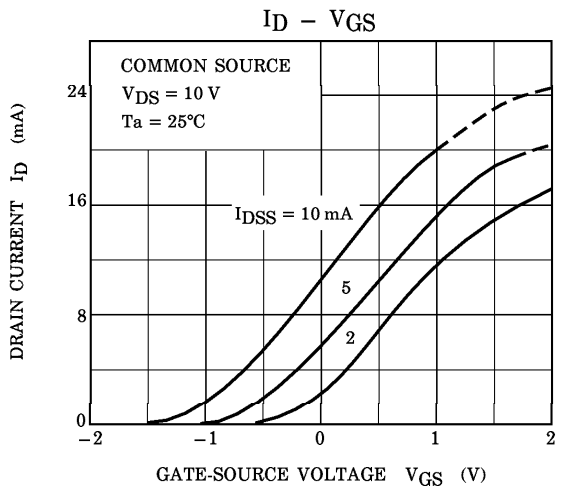
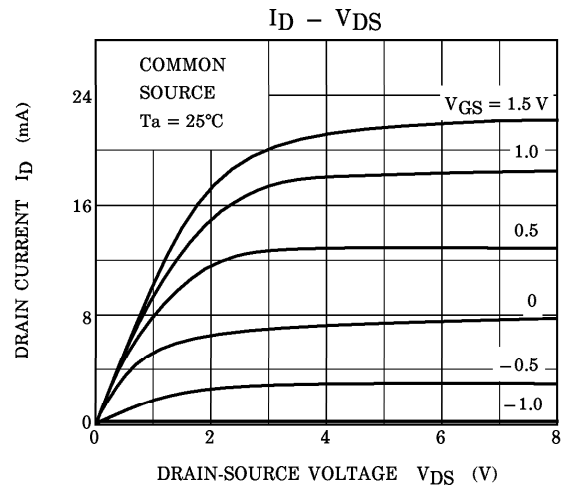
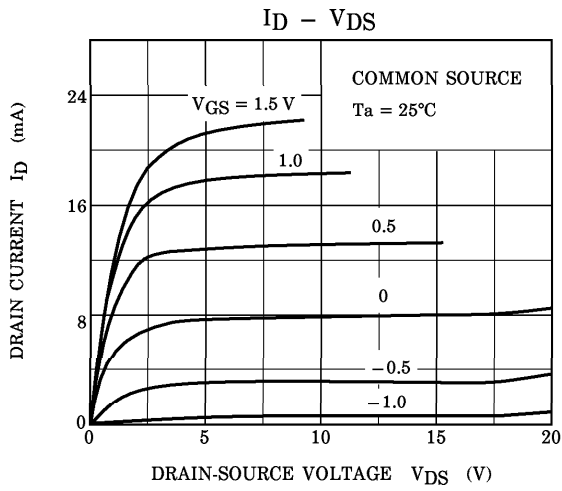


Fig.1  $G_{ps}$ , NF TEST CIRCUIT

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