

TOSHIBA FIELD EFFECT TRANSISTOR SILICON N CHANNEL MOS TYPE

2SK302

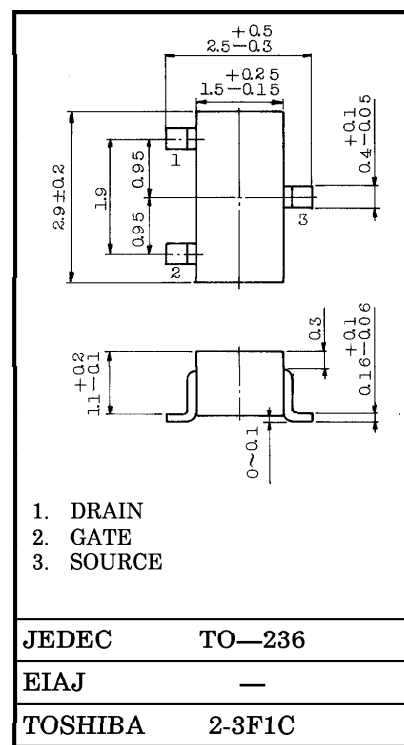
FM TUNER, VHF RF AMPLIFIER APPLICATIONS.

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 : 5~15V

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

CHARACTERISTIC	SYMBOL	RATING	UNIT
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	± 5	V
Drain Current	I_D	30	mA
Drain Power Dissipation	P_D	150	mW
Channel Temperature	T_{ch}	125	$^\circ\text{C}$
Storage Temperature	T_{stg}	$-55\sim 125$	$^\circ\text{C}$



Weight : 0.012g

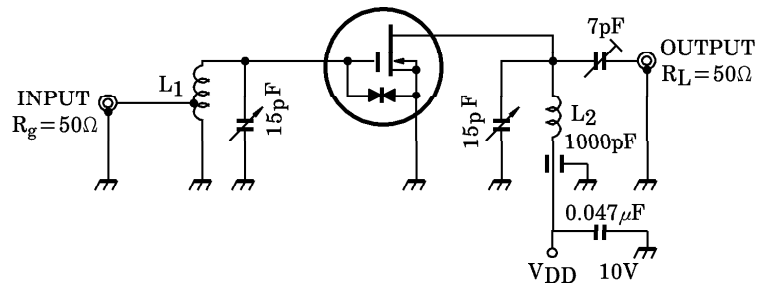
ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

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

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

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Fig. 1 G_{ps} , NF TEST CIRCUIT

L_1 : 1.0mm ϕ SILVER PLATED COPPER WIRE 4.0T, 8mm ϕ ID
TAP AT 1.0T FROM COLD END

L_2 : 1.0mm ϕ SILVER PLATED COPPER WIRE 3.0T, 8mm ϕ ID,
10mm LENGTH

