

TOSHIBA FIELD EFFECT TRANSISTOR SILICON N CHANNEL DUAL GATE MOS TYPE

3SK259

TV TUNER, UHF RF AMPLIFIER APPLICATIONS

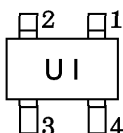
TV TUNER VHF WIDE BAND RF AMPLIFIER APPLICATIONS

- Superior Cross Modulation Performance.
- Low Reverse Transfer Capacitance : $C_{rss} = 0.025\text{pF}$ (Typ.)
- Low Noise Figure : $NF = 2.6\text{dB}$ (Typ.)

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

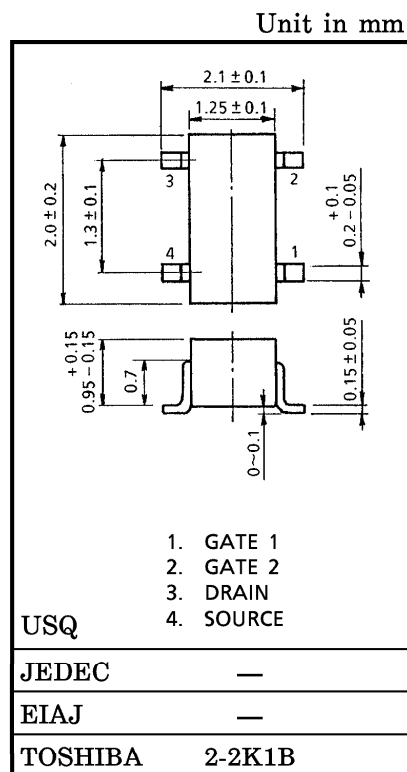
CHARACTERISTIC	SYMBOL	RATING	UNIT
Drain-Source Voltage	V_{DS}	13.5	V
Gate 1-Source Voltage	V_{G1S}	± 8	V
Gate 2-Source Voltage	V_{G2S}	± 8	V
Drain Current	I_D	30	mA
Drain Power Dissipation	P_D	100	mW
Chanel Temperature	T_{ch}	125	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	$-55 \sim 125$	$^\circ\text{C}$

Marking



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

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate 1 Leakage Current	I_{G1SS}	$V_{DS} = 0, V_{G1S} = \pm 6\text{V}, V_{G2S} = 0$	—	—	± 50	nA
Gate 2 Leakage Current	I_{G2SS}	$V_{DS} = 0, V_{G1S} = 0, V_{G2S} = \pm 6\text{V}$	—	—	± 50	nA
Drain-Source Voltage	$V(\text{BR})_{DSX}$	$V_{G1S} = -4\text{V}, V_{G2S} = -4\text{V}$ $I_D = 100\mu\text{A}$	13.5	—	—	V
Drain Current	I_{DSS}	$V_{DS} = 6\text{V}, V_{G1S} = 0, V_{G2S} = 3\text{V}$	0	—	2	mA
Gate 1-Source Cut-off Voltage	$V_{G1S}(\text{OFF})$	$V_{DS} = 6\text{V}, V_{G2S} = 3\text{V},$ $I_D = 100\mu\text{A}$	-1.5	—	1	V
Gate 2-Source Cut-off Voltage	$V_{G2S}(\text{OFF})$	$V_{DS} = 6\text{V}, V_{G1S} = 3\text{V},$ $I_D = 100\mu\text{A}$	-1.0	—	1	V
Forward Transfer Admittance	$ Y_{fs} $	$V_{DS} = 6\text{V}, V_{G2S} = 3\text{V}, I_D = 10\text{mA}$ $f = 1\text{kHz}$	—	21	—	mS
Input Capacitance	C_{iss}	$V_{DS} = 6\text{V}, V_{G2S} = 3\text{V}, I_D = 10\text{mA}$ $f = 1\text{MHz}$	1.9	2.7	3.5	pF
Reverse Transfer Capacitance	C_{rss}		—	0.025	0.04	
Power Gain	G_{ps}	$V_{DS} = 6\text{V}, V_{G2S} = 3\text{V}$	15	19	—	dB
Noise Figure	NF	$I_D = 10\text{mA}, f = 800\text{MHz}$ (Fig.1)	—	2.6	4.0	

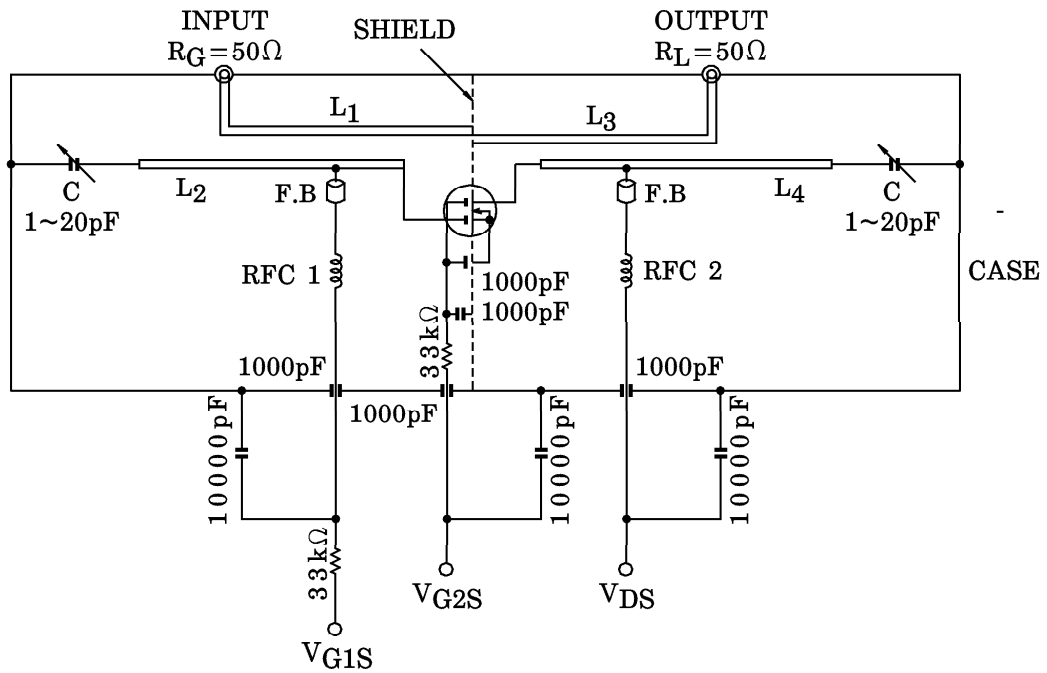


Weight : 0.006g

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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

