

TOSHIBA FIELD EFFECT TRANSISTOR SILICON N CHANNEL DUAL GATE MOS TYPE

3SK249

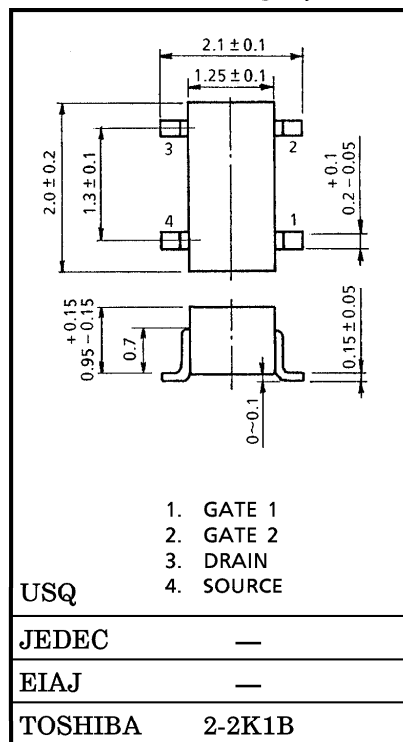
TV TUNER, UHF RF AMPLIFIER APPLICATIONS

Unit in mm

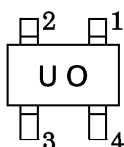
- Superior Cross Modulation Performance.
- Low Reverse Transfer Capacitance : $C_{RSS}=20\text{fF}$ (Typ.)
- Low Noise Figure. : $NF=1.5\text{dB}$ (Typ.)

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

CHARACTERISTIC	SYMBOL	RATING	UNIT
Drain-Source Voltage	V_{DS}	12.5	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 ($T_a = 25^\circ\text{C}$)

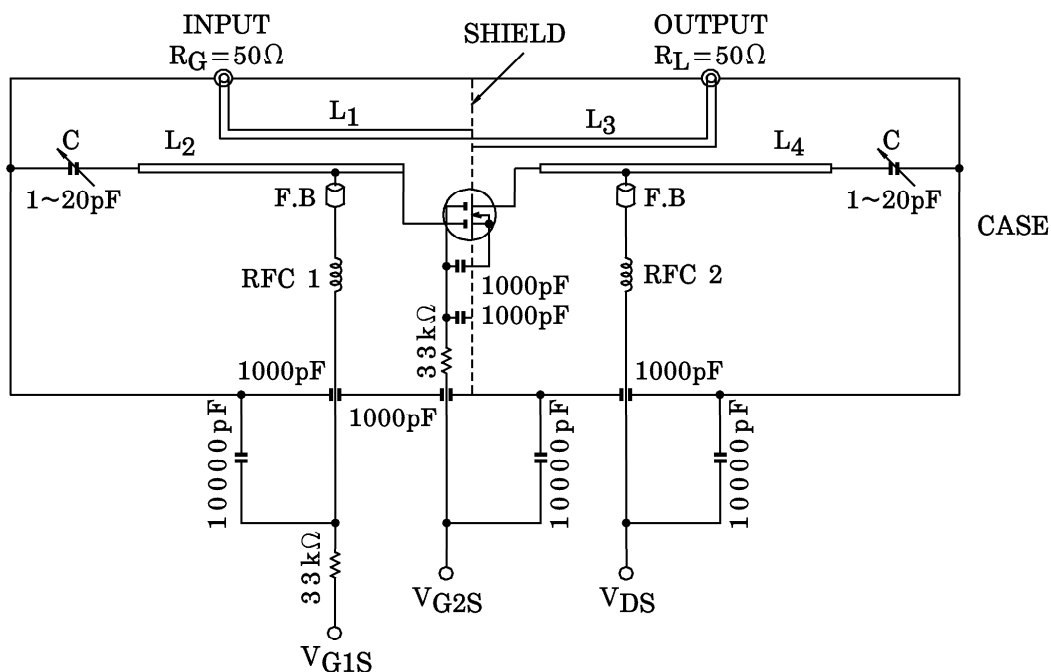
Weight : 0.006g

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	$V(\text{BR})_{DSX}$	$V_{G1S}=-0.5\text{V}, V_{G2S}=-0.5\text{V}$ $I_D=100\mu\text{A}$	12.5	—	—	V
Drain Current	I_{DSS}	$V_{DS}=6\text{V}, V_{G2S}=4.5\text{V},$ $V_{G1S}=0\text{V}$	0	—	0.1	mA
Gate 1-Source Cut-off Voltage	$V_{G1S}(\text{OFF})$	$V_{DS}=6\text{V}, V_{G2S}=4.5\text{V},$ $I_D=100\mu\text{A}$	0.4	0.9	1.4	V
Gate 2-Source Cut-off Voltage	$V_{G2S}(\text{OFF})$	$V_{DS}=6\text{V}, V_{G1S}=4.0\text{V},$ $I_D=100\mu\text{A}$	0.5	1.0	1.5	V
Forward Transfer Admittance	$ Y_{fs} $	$V_{DS}=6\text{V}, V_{G2S}=4.5\text{V},$ $I_D=10\text{mA}, f=1\text{kHz}$	17	21	—	mS
Input Capacitance	C_{iss}	$V_{DS}=6\text{V}, V_{G2S}=4.5\text{V},$ $I_D=10\text{mA}, f=1\text{MHz}$	0.9	1.5	2.1	pF
Reverse Transfer Capacitance	C_{rss}		—	20	40	fF
Power Gain	G_{ps}	$V_{DS}=6\text{V}, V_{G2S}=4.5\text{V},$ $I_D=10\text{mA}, f=800\text{MHz}$	18	20	—	dB
Noise Figure	NF	—	1.5	2.5		

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Fig.1 G_{ps}, 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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