

TOSHIBA FIELD EFFECT TRANSISTOR SILICON N CHANNEL DUAL GATE MOS TYPE

# 3SK127

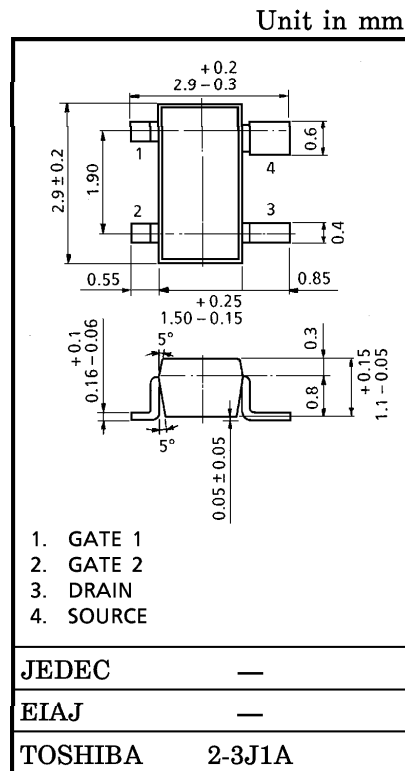
TV TUNER, UHF RF AMPLIFIER APPLICATIONS

TV TUNER, UHF MIXER APPLICATIONS

- Superior Cross Modulation Performance.
- Low Reverse Transfer Capacitance :  $C_{RSS} = 0.03\text{pF}$  (Max.)
- Low Noise Figure :  $NF = 3.2\text{dB}$  (Typ.)

**MAXIMUM RATINGS (Ta = 25°C)**

CHARACTERISTIC	SYMBOL	RATING	UNIT
Drain-Source Voltage	$V_{DS}$	15	V
Gate 1 - Source Voltage	$V_{G1S}$	$\pm 8$	V
Gate 2 - Source Voltage	$V_{G2S}$	$\pm 8$	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



Weight : 0.013g

**ELECTRICAL CHARACTERISTICS (Ta = 25°C)**

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate 1 Leakage Current	$I_{G1SS}$	$V_{DS} = 0V, V_{G1S} = \pm 6V, V_{G2S} = 0V$	—	—	$\pm 50$	nA
Gate 2 Leakage Current	$I_{G2SS}$	$V_{DS} = 0V, V_{G1S} = 0V, V_{G2S} = \pm 6V$	—	—	$\pm 50$	nA
Drain-Source Voltage	$V(BR)_{DSX}$	$V_{G1S} = -4V, V_{G2S} = -4V$ $I_D = 100\mu A$	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	$V_{G1S(OFF)}$	$V_{DS} = 6V, V_{G2S} = 3V, I_D = 100\mu A$	-1.5	—	1.0	V
Gate 2-Source Cut-off Voltage	$V_{G2S(OFF)}$	$V_{DS} = 6V, V_{G1S} = 3V, I_D = 100\mu A$	-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	$C_{iss}$	$V_{DS} = 6V, V_{G2S} = 3V, I_D = 10mA$	—	2.0	—	pF
Reverse Transfer Capacitance	$C_{rss}$	$f = 1MHz$	—	—	0.03	pF
Power Gain	$G_{ps}$	$V_{DS} = 6V, V_{G2S} = 3V, I_D = 10mA$	—	16	—	dB
Noise Figure	NF	$f = 800MHz$ (Fig.1)	—	3.2	—	dB

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

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Marking

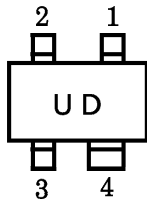
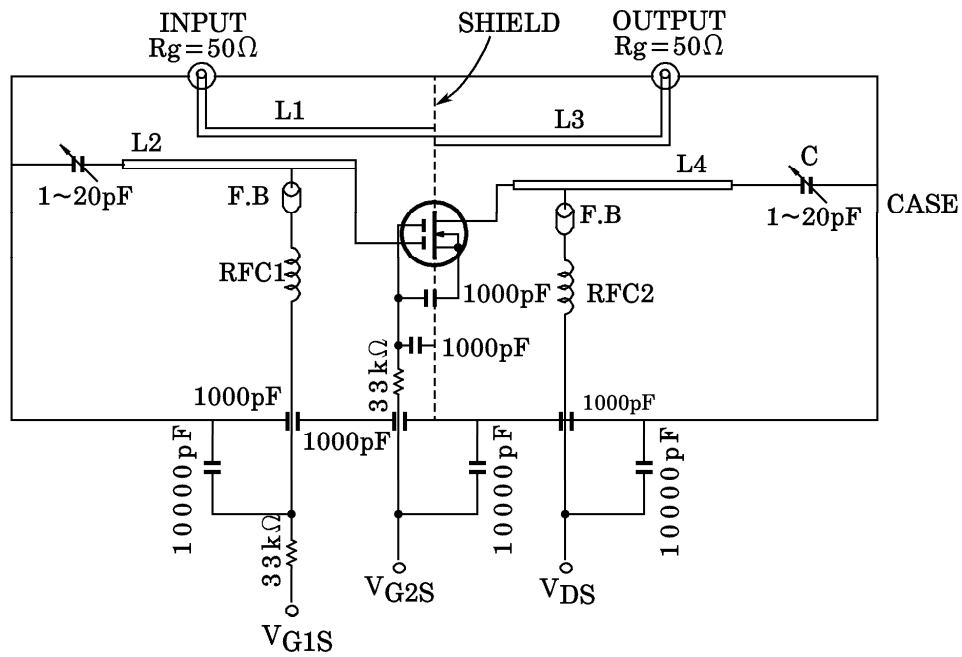


Fig. 1 800MHz Gps, NF TEST CIRCUIT



- L1~L4 :  $\phi$ 0.8mm SILVER PLATED COPPER WIRE
- C : AIR TRIMMER TTA25A200A (MURATA MFG, Co., Ltd.)
- RFC 1 :  $\phi$ 0.35mm COPPER WIRE 3mm ID, 7T
- RFC 2 :  $\phi$ 0.35mm COPPER WIRE 3mm ID, 10T

