

TOSHIBA FIELD EFFECT TRANSISTOR SILICON N CHANNEL DUAL GATE MOS TYPE

# 3SK225

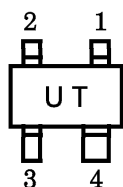
TV TUNER, VHF RF AMPLIFIER APPLICATIONS  
 FM TUNER APPLICATIONS  
 TV TUNER, UHF RF AMPLIFIER APPLICATIONS

- Superior Cross Modulation Performance.
- Low Noise Figure : NF=2.0dB (Typ.)

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Drain-Source Voltage	V <sub>DS</sub>	13.5	V
Gate 1-Source Voltage	V <sub>G1S</sub>	±8	V
Gate 2-Source Voltage	V <sub>G2S</sub>	±8	V
Drain Current	I <sub>D</sub>	30	mA
Drain Power Dissipation	P <sub>D</sub>	150	mW
Channel Temperature	T <sub>ch</sub>	125	°C
Storage Temperature Range	T <sub>stg</sub>	-55~125	°C

Marking



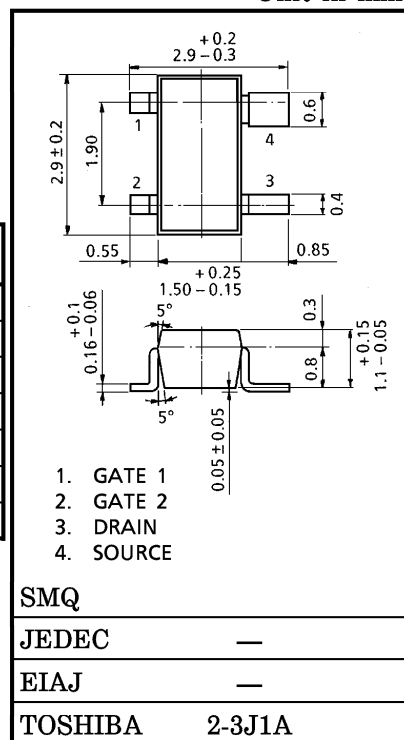
ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate 1 Leakage Current	I <sub>G1SS</sub>	V <sub>DS</sub> =0, V <sub>G1S</sub> =±6V, V <sub>G2S</sub> =0	—	—	±50	nA
Gate 2 Leakage Current	I <sub>G2SS</sub>	V <sub>DS</sub> =0, V <sub>G1S</sub> =0, V <sub>G2S</sub> =±6V	—	—	±50	nA
Drain-Source Voltage	V (BR) DSX	V <sub>G1S</sub> =-4V, V <sub>G2S</sub> =-4V, I <sub>D</sub> =100μA	13.5	—	—	V
Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =6V, V <sub>G1S</sub> =0, V <sub>G2S</sub> =4.5V	0	—	0.1	mA
Gate 1-Source Cut-off Voltage	V <sub>G1S</sub> (OFF)	V <sub>DS</sub> =6V, V <sub>G2S</sub> =4.5V, I <sub>D</sub> =100μA	0	—	1.0	V
Gate 2-Source Cut-off Voltage	V <sub>G2S</sub> (OFF)	V <sub>DS</sub> =6V, V <sub>G1S</sub> =4V, I <sub>D</sub> =100μA	0.5	1.0	1.5	V
Forward Transfer Admittance	Y <sub>fs</sub>	V <sub>DS</sub> =6V, V <sub>G2S</sub> =4.5V, I <sub>D</sub> =10mA, f=1kHz	—	21	—	mS
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =6V, V <sub>G2S</sub> =4.5V, I <sub>D</sub> =10mA, f=1MHz	—	3.4	4.4	pF
Reverse Transfer Capacitance	C <sub>rss</sub>		—	0.020	0.05	pF
Power Gain	G <sub>ps</sub>	V <sub>DS</sub> =6V, V <sub>G2S</sub> =4.5V, I <sub>D</sub> =10mA, f=500MHz (Fig.1)	19	22	—	dB
Noise Figure	NF		—	2.0	3.5	dB

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Unit in mm



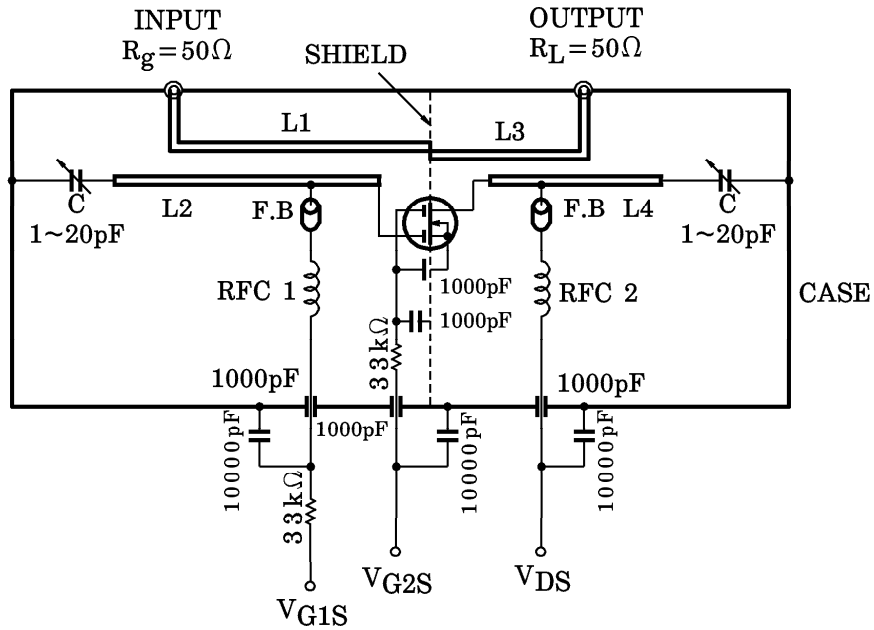
SMQ

JEDEC —

EIAJ —

TOSHIBA 2-3J1A

Weight : 0.013g



- 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

Fig.1 500MHz,  $G_{ps}$ , NF TEST CIRCUIT

