

TOSHIBA FIELD EFFECT TRANSISTOR SILICON N CHANNEL DUAL GATE MOS TYPE

# 3SK126

TV TUNER, VHF RF AMPLIFIER APPLICATIONS

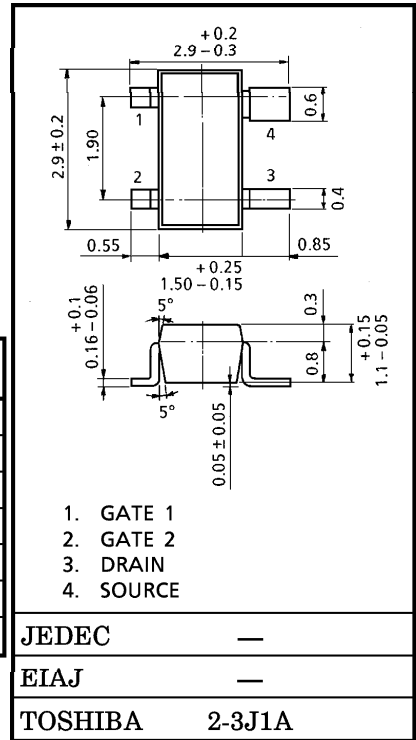
TV TUNER VHF MIXER APPLICATIONS

Unit in mm

- Superior Cross Modulation Performance.
- Low Reverse Transfer Capacitance :  $C_{RSS}=0.03\text{pF}$  (Typ.)
- Low Noise Figure :  $NF=1.4\text{dB}$  (Typ.)

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

CHARACTERISTIC	SYMBOL	RATING	UNIT
Drain-Source Voltage	$V_{DS}$	15	V
Gate 1-Source Voltage	$V_{G1S}$	$\pm 9$	V
Gate 2-Source Voltage	$V_{G2S}$	$\pm 9$	V
Drain Current	$I_D$	30	mA
Drain Power Dissipation	$P_D$	150	mW
Chanel Temperature	$T_{ch}$	125	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	$-55\sim 125$	$^\circ\text{C}$



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

Weight : 0.013g

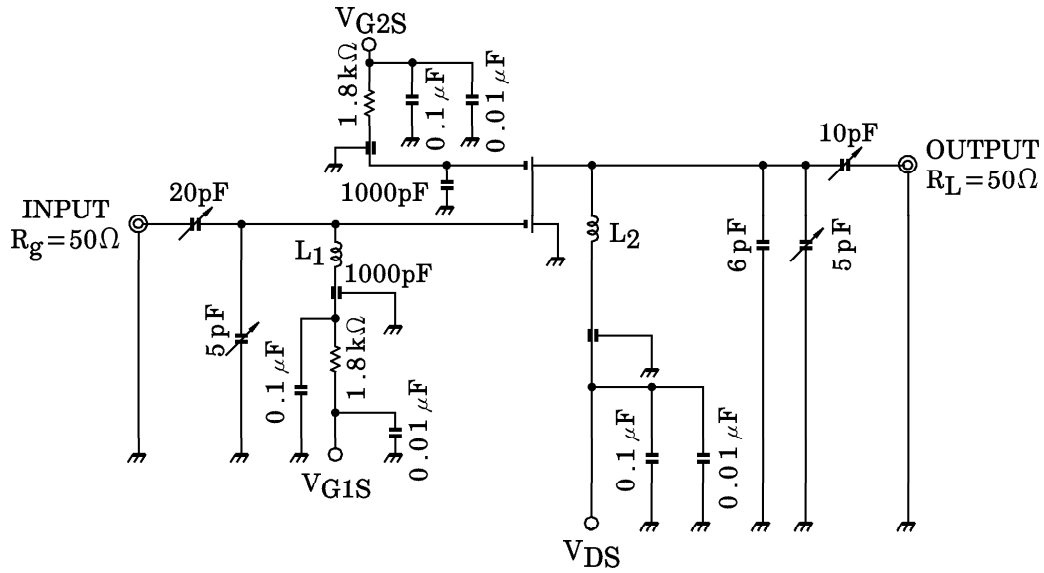
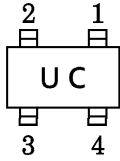
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate 1 Leakage Current	$I_{G1SS}$	$V_{DS}=0, V_{G1S}=\pm 7\text{V}, V_{G2S}=0$	—	—	$\pm 50$	nA
Gate 2 Leakage Current	$I_{G2SS}$	$V_{DS}=0, V_{G1S}=0, V_{G2S}=\pm 7\text{V}$	—	—	$\pm 50$	nA
Drain-Source Voltage	$V_{(BR)DSX}$	$V_{G1S}=-4\text{V}, V_{G2S}=-4\text{V}, I_D=100\mu\text{A}$	15	—	—	V
Drain Current	$I_{DSS}$ (Note)	$V_{DS}=6\text{V}, V_{G1S}=0, V_{G2S}=3\text{V}$	0	—	6	mA
Gate 1-Source Cut-off Voltage	$V_{G1S(OFF)}$	$V_{DS}=6\text{V}, V_{G2S}=3\text{V}, I_D=100\mu\text{A}$	-1	—	1	V
Gate 2-Source Cut-off Voltage	$V_{G2S(OFF)}$	$V_{DS}=6\text{V}, V_{G1S}=3\text{V}, I_D=100\mu\text{A}$	-0.5	—	1	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=6\text{V}, V_{G2S}=3\text{V}, I_D=10\text{mA}, f=1\text{kHz}$	13	20	—	mS
Input Capacitance	$C_{iss}$	$V_{DS}=6\text{V}, V_{G2S}=3\text{V}, I_D=10\text{mA}, f=1\text{MHz}$	—	4.25	5.5	pF
Reverse Transfer Capacitance	$C_{RSS}$	$V_{DS}=6\text{V}, V_{G2S}=3\text{V}, I_D=10\text{mA}, f=1\text{MHz}$	—	0.03	0.05	pF
Power Gain	$G_{ps}$	$V_{DS}=6\text{V}, V_{G2S}=3\text{V}, I_D=10\text{mA}, f=200\text{MHz}$	20	25	—	dB
Noise Figure	NF	$V_{DS}=6\text{V}, V_{G2S}=3\text{V}, I_D=10\text{mA}, f=200\text{MHz}$	—	1.4	2.8	dB

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

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Marking



L<sub>1</sub> : 1mmϕ Ag Plated Copper Wire, 2 Turns, 8mm I<sub>D</sub>  
 L<sub>2</sub> : 1mmϕ Ag Plated Copper Wire, 2.5 Turns, 8mm I<sub>D</sub>

Fig.1 200MHz G<sub>ps</sub>, NF TEST CIRCUIT

