

TOSHIBA FIELD EFFECT TRANSISTOR SILICON N CHANNEL DUAL GATE MOS TYPE

# 3SK153

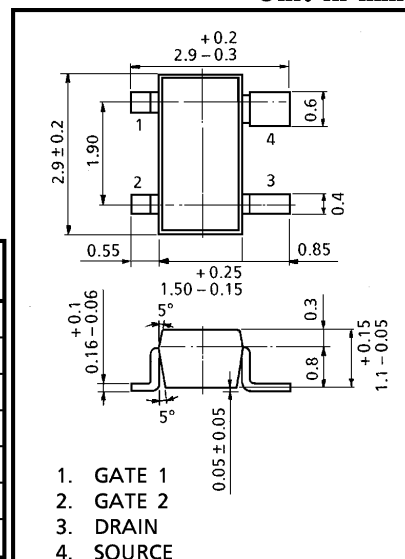
TV TUNER, UHF RF AMPLIFIER APPLICATIONS  
TV TUNER VHF WIDE BAND RF AMPLIFIER APPLICATIONS

Unit in mm

- 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	$V_{G1S}$	$\pm 8$	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	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	$-55 \sim 125$	$^\circ\text{C}$

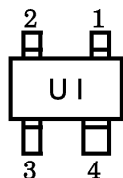


1. GATE 1
2. GATE 2
3. DRAIN
4. SOURCE

SMQ	
JEDEC	—
EIAJ	—
TOSHIBA	2-3J1A

Weight : 0.013g

Marking



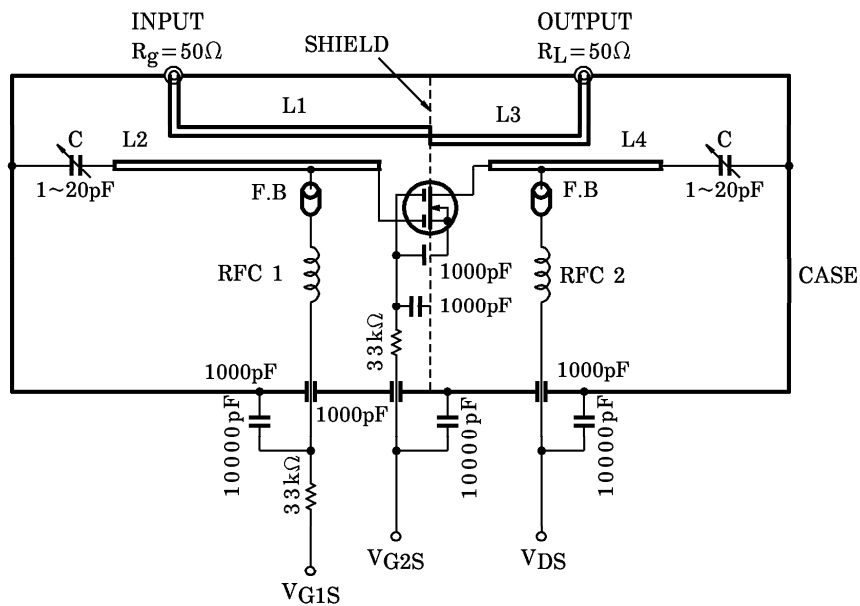
ELECTRICAL CHARACTERISTICS ( $T_a = 25^\circ\text{C}$ )

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate 1 Leakage Current	$I_{G1SS}$	$V_{DS} = 0, V_{G1S} = \pm 6\text{V}, V_{G2S} = 0$	—	—	$\pm 50$	nA
Gate 2 Leakage Current	$I_{G2SS}$	$V_{DS} = 0, V_{G1S} = 0, V_{G2S} = \pm 6\text{V}$	—	—	$\pm 50$	nA
Drain-Source Voltage	$V$ (BR) DSX	$V_{G1S} = -4\text{V}, V_{G2S} = -4\text{V}, I_D = 100\mu\text{A}$	13.5	—	—	V
Drain Current	$I_{DSS}$ (Note)	$V_{DS} = 6\text{V}, V_{G1S} = 0, V_{G2S} = 3\text{V}$	0	—	2	mA
Gate 1-Source Cut-off Voltage	$V_{G1S}$ (OFF)	$V_{DS} = 6\text{V}, V_{G2S} = 3\text{V}, I_D = 100\mu\text{A}$	-1.5	—	1	V
Gate 2-Source Cut-off Voltage	$V_{G2S}$ (OFF)	$V_{DS} = 6\text{V}, V_{G1S} = 3\text{V}, I_D = 100\mu\text{A}$	-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	$C_{iss}$	$V_{DS} = 6\text{V}, V_{G2S} = 3\text{V}, I_D = 10\text{mA}, f = 1\text{MHz}$	1.8	2.7	3.6	pF
Reverse Transfer Capacitance	$C_{rss}$		—	0.025	0.05	pF
Power Gain	$G_{ps}$	$V_{DS} = 6\text{V}, V_{G2S} = 3\text{V}, I_D = 10\text{mA}, f = 800\text{MHz}$ (Fig.1)	14	18.5	—	dB
Noise Figure	NF		—	2.6	4.0	dB

Note :  $I_{DSS}$  Classification 0 : 0~2mA

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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

