

TOSHIBA FIELD EFFECT TRANSISTOR SILICON N CHANNEL DUAL GATE MOS TYPE

3SK258

TV TUNER, VHF RF AMPLIFIER APPLICATIONS

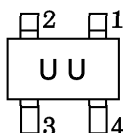
FM TUNER APPLICATIONS

- Superior Cross Modulation Performance.
- Low Reverse Transfer Capacitance : $C_{rss}=0.015\text{pF}$ (Typ.)
- Low Noise Figure : $NF=1.1\text{dB}$ (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}	± 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

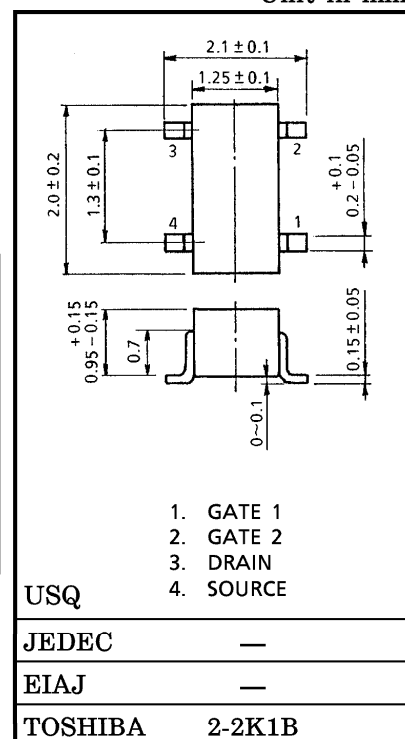
ELECTICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate 1 Leakage Current	I_{G1SS}	$V_{DS}=0, V_{G1S}=\pm 6\text{V}, V_{G2S}=0$	—	—	± 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	$V(BR)_{DSX}$	$V_{G1S}=-1\text{V}, V_{G2S}=-1\text{V}$ $I_D=100\mu\text{A}$	13.5	—	—	V
Drain Current	I_{DSS}	$V_{DS}=6\text{V}, V_{G1S}=0,$ $V_{G2S}=4.5\text{V}$	0	—	0.1	mA
Gate 1-Source Cut-off Voltage	$V_{G1S(OFF)}$	$V_{DS}=6\text{V}, V_{G2S}=4.5\text{V},$ $I_D=100\mu\text{A}$	0	—	1.0	V
Gate 2-Source Cut-off Voltage	$V_{G2S(OFF)}$	$V_{DS}=6\text{V}, V_{G1S}=4\text{V},$ $I_D=100\mu\text{A}$	0.5	1.0	1.5	V
Forward Transfer Admittance	$ Y_{fs} $	$V_{DS}=6\text{V}, V_{G2S}=4.5\text{V}$ $I_D=10\text{mA}, f=1\text{kHz}$	—	13	—	mS
Input Capacitance	C_{iss}	$V_{DS}=6\text{V}, V_{G2S}=4.5\text{V}$ $I_D=10\text{mA}, f=1\text{MHz}$	2.1	2.7	3.3	pF
Reverse Transfer Capacitance	C_{rss}		—	0.015	0.03	
Power Gain	G_{ps}	$V_{DS}=6\text{V}, V_{G2S}=4.5\text{V}$	23	27	—	dB
Noise Figure	NF	$I_D=10\text{mA}, f=800\text{MHz}$ (Fig.1)	—	1.1	2.2	

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Unit in mm



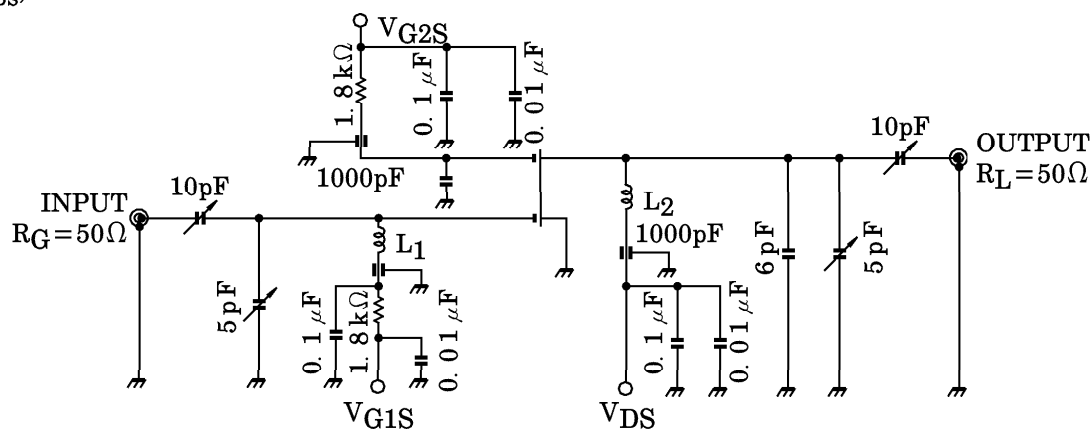
USQ

JEDEC

EIAJ

TOSHIBA 2-2K1B

Weight : 0.006g

Fig.1 G_{ps} , NF Test Circuit

L_1 : 1mm ϕ Ag Plated Copper Wire, 2 Turns, 8mm ID
 L_2 : 1mm ϕ Ag Plated Copper Wire, 2.5 Turns, 8mm ID

