

MOS FIELD EFFECT TRANSISTOR

3SK231

RF AMP. FOR UHF TV TUNER

N-CHANNEL SILICON DUAL-GATE MOS FIELD-EFFECT TRANSISTOR

4 PINS MINI MOLD

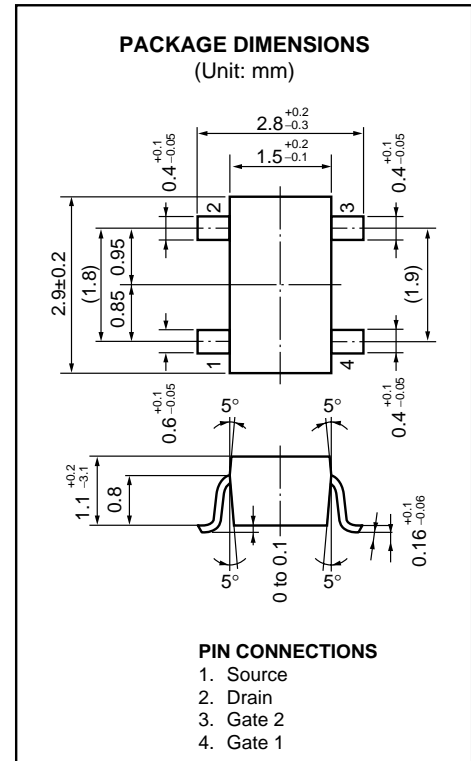
FEATURES

- Low Noise Figure $NF = 2.0 \text{ dB TYP. (@ = 900 MHz)}$
- High Power Gain $G_{ps} = 17.5 \text{ dB TYP. (@ = 900 MHz)}$
- Enhancement Typ.
- Suitable for use as RF amplifier in UHF TV tuner.
- Automatically Mounting : Embossed Type Taping
- Small Package : 4 Pins Mini Mold Package. (SC-61)

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

Drain to Source Voltage	V_{DSX}	18	V
Gate1 to Source Voltage	V_{G1S}	$\pm 8 (\pm 10)^*$	V
Gate2 to Source Voltage	V_{G2S}	$\pm 8 (\pm 10)^*$	V
Gate1 to Drain Voltage	V_{G1D}	18	V
Gate2 to Drain Voltage	V_{G2D}	18	V
Drain Current	I_D	25	mA
Total Power Dissipation	P_D	200	mW
Channel Temperature	T_{ch}	125	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55 to +125	$^\circ\text{C}$

* $R_L \geq 10 \text{ k}\Omega$



PRECAUTION: Avoid high static voltages or electric fields so that this device would not suffer from any damage due to those voltages or fields.

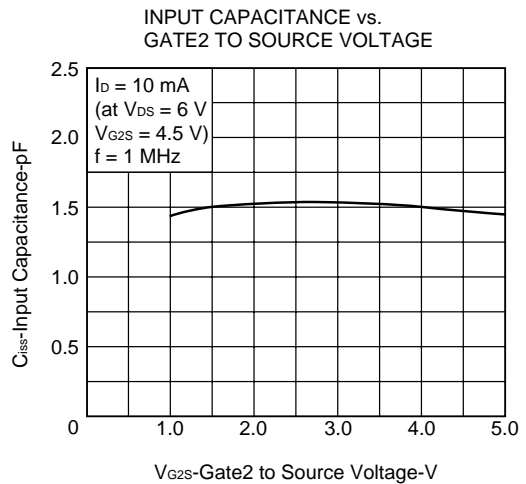
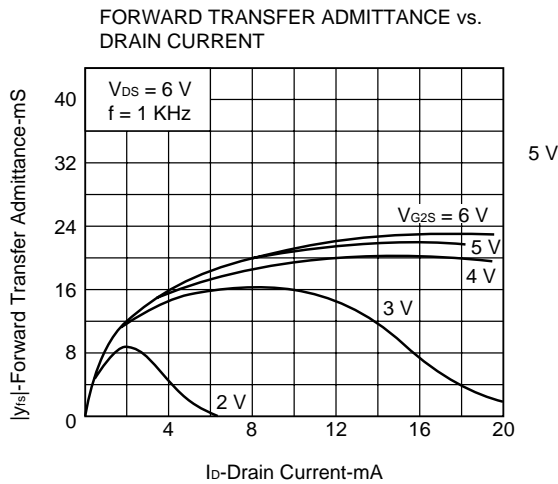
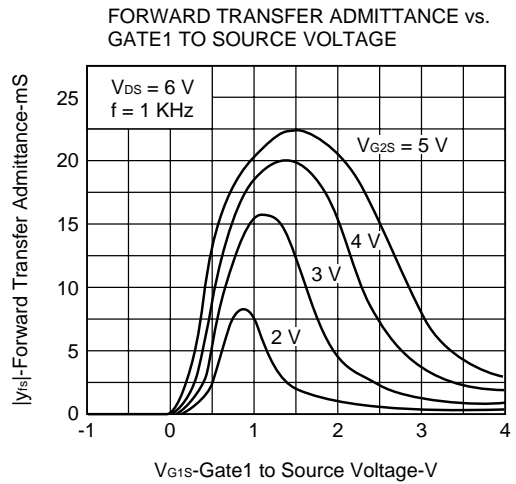
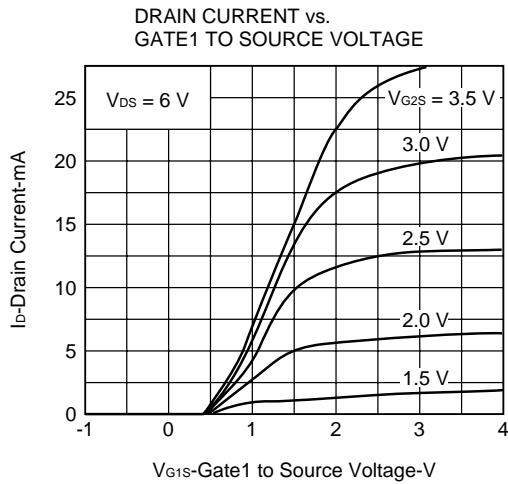
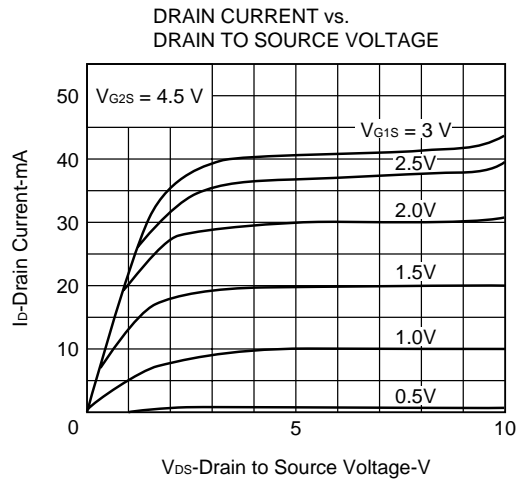
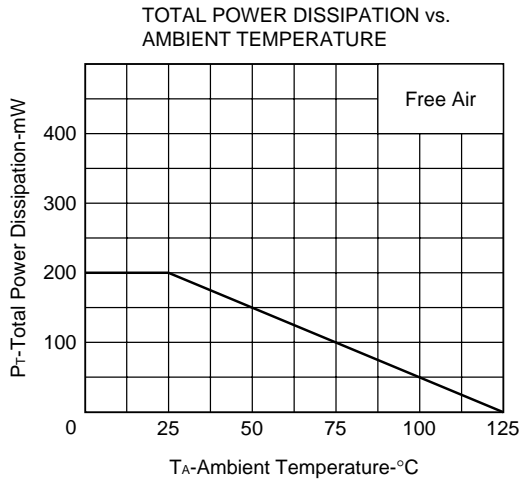
ELECTRICAL CHARACTERISTICS (T_A = 25 °C)

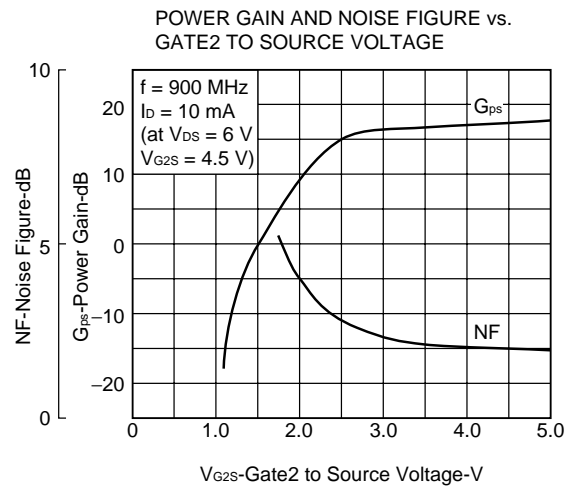
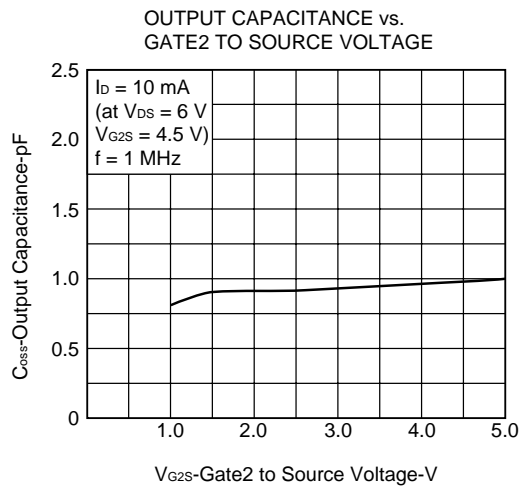
CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Drain to Source Breakdown Voltage	BV _{DSX}	18			V	V _{G1S} = V _{G2S} = -2 V, I _D = 10 μA
Drain Current	I _{DSX}	0.01		10.0	mA	V _{DS} = 6 V, V _{G2S} = 4.5 V, V _{G1S} = 0.75 V
Gate1 to Source Cutoff Voltage	V _{G1S(off)}	-1.0		+1.0	V	V _{DS} = 6 V, V _{G2S} = 3 V, I _D = 10 μA
Gate2 to Source Cutoff Voltage	V _{G2S(off)}	+0.6	+1.1	+1.6	V	V _{DS} = 6 V, V _{G1S} = 3 V, I _D = 10 μA
Gate1 Reverse Current	I _{G1SS}			±20	nA	V _{DS} = V _{G2S} = 0 V, V _{G1S} = ±8 V
Gate2 Reverse Current	I _{G2SS}			±20	nA	V _{DS} = V _{G1S} = 0 V, V _{G2S} = ±8 V
Forward Transfer Admittance	y _{fs}	15	19.5	24	mS	V _{DS} = 6 V, V _{G2S} = 4.5 V, I _D = 10 mA f = 1 kHz
Input Capacitance	C _{iss}	1.0	1.5	2.0	pF	V _{DS} = 6 V, V _{G2S} = 4.5 V, I _D = 10 mA f = 1 MHz
Output Capacitance	C _{oss}	0.7	1.0	1.3	pF	
Reverse Transfer Capacitance	C _{rss}		0.015	0.03	pF	
Power Gain	G _{ps}	14.0	17.5	21.0	dB	V _{DS} = 6 V, V _{G2S} = 4.5 V, I _D = 10 mA
Noise Figure	NF1		2.0	3.0	dB	f = 900 MHz

I_{DSX} Classification

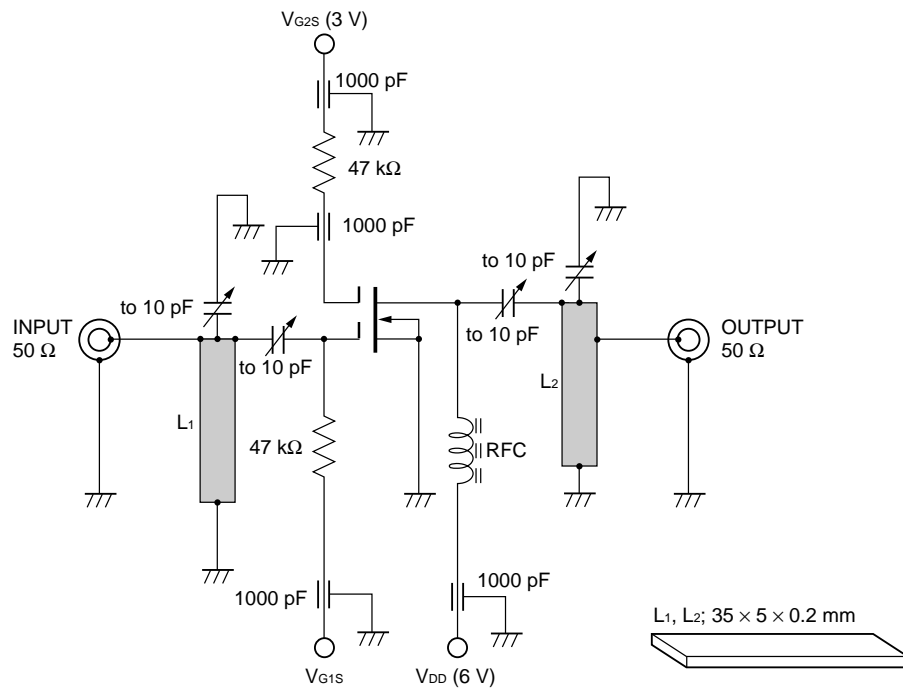
Rank	U1C	U1D
Marking	U1C	U1D
I _{DSX} (mA)	0.01 to 4.0	2.0 to 10.0

CHARACTERISTICS CURVE (TA = 25 °C)





Gps AND NF TEST CIRCUIT AT $f = 900 \text{ MHz}$



[MEMO]

[MEMO]

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Anti-radioactive design is not implemented in this product.