

**NEC**

**MOS FIELD EFFECT TRANSISTOR**  
**3SK134B**

**RF AMP. FOR UHF TV TUNER**  
**N-CHANNEL SILICON DUAL GATE MOS FIELD-EFFECT TRANSISTOR**  
**4 PINS MINI MOLD**

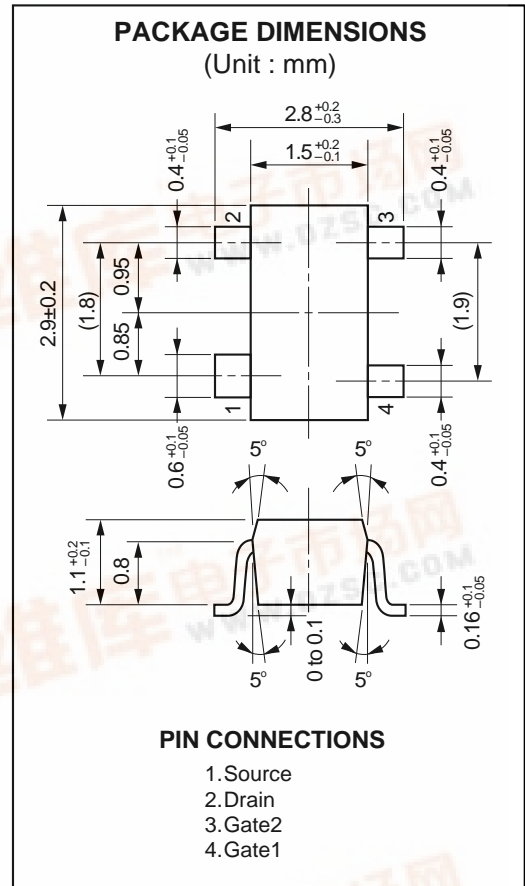
**FEATURES**

- High Power Gain :  $G_{ps} = 23.0$  dB TYP. (@ = 900 MHz)
- Low Noise Figure :  $NF = 2.4$  dB TYP. (@ = 900 MHz)
- Suitable for use as RF amplifier in UHF TV tuner.
- Automatically Mounting : Embossed Type Taping
- Surface Mount Package : 4 Pins Mini Mold (EIAJ: SC-61)

**ABSOLUTE MAXIMUM RATINGS (T<sub>A</sub> = 25 °C)**

Drain to Source Voltage	V <sub>DSX</sub>	18	V
Gate1 to Source Voltage	V <sub>G1S</sub>	±8 (±10)*1	V
Gate2 to Source Voltage	V <sub>G2S</sub>	±8 (±10)*1	V
Gate1 to Drain Voltage	V <sub>G1D</sub>	18	V
Gate2 to Drain Voltage	V <sub>G2D</sub>	18	V
Drain Current	I <sub>D</sub>	25	mA
Total Power Dissipation	P <sub>D</sub>	200	mW
Channel Temperature	T <sub>ch</sub>	125	°C
Storage Temperature	T <sub>stg</sub>	-55 to +125	°C

\*1 : R<sub>L</sub> ≥ 10 kΩ



**PRECAUTION:**

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



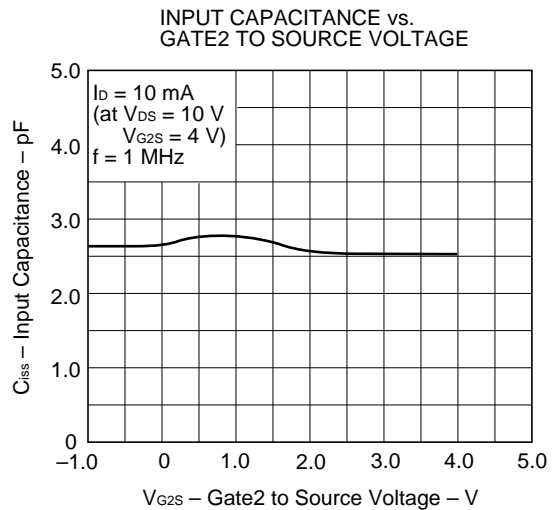
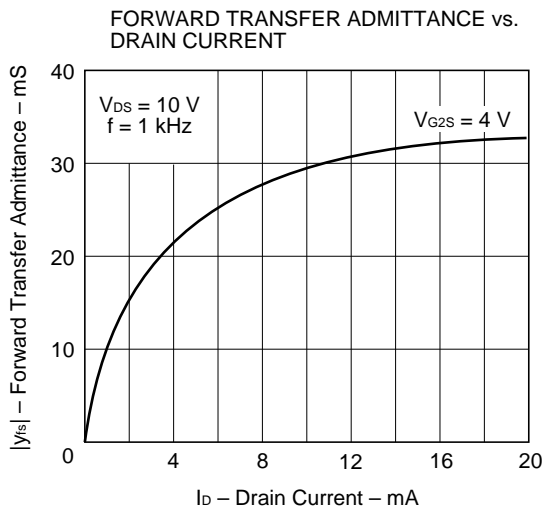
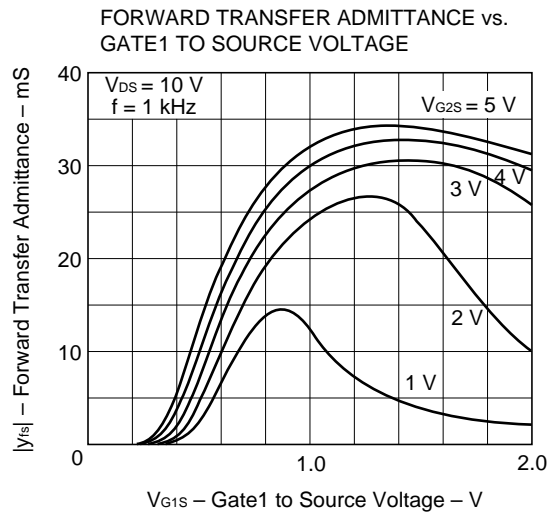
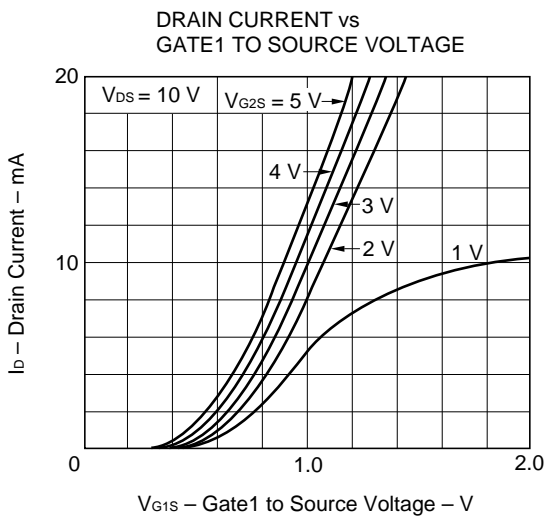
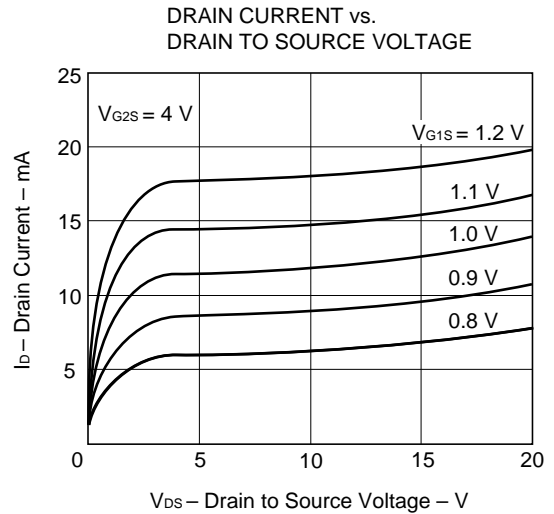
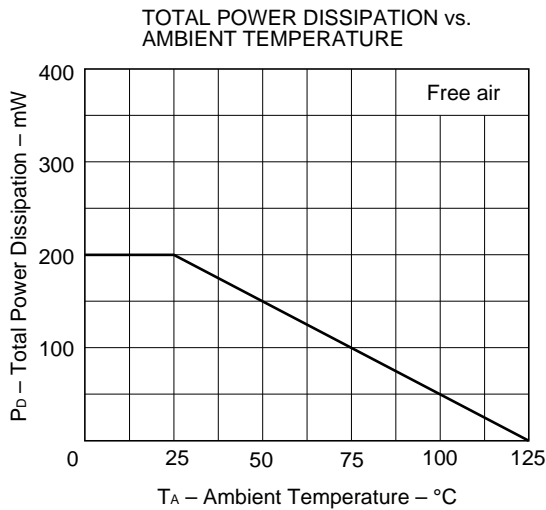
**ELECTRICAL CHARACTERISTICS (T<sub>A</sub> = 25 °C)**

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Drain to Source Breakdown Voltage	BV <sub>DSX</sub>	18			V	V <sub>G1S</sub> = V <sub>G2S</sub> = -2 V, I <sub>D</sub> = 10 μA
Drain Current	I <sub>DSX</sub>	0.4		8.0	mA	V <sub>DS</sub> = 10 V, V <sub>G2S</sub> = 4 V, V <sub>G1S</sub> = 0.5 V
Gate1 to Source Cutoff Voltage	V <sub>G1S(off)</sub>			-2.0	V	V <sub>DS</sub> = 10 V, V <sub>G2S</sub> = 4 V, I <sub>D</sub> = 10 μA
Gate2 to Source Cutoff Voltage	V <sub>G2SS(off)</sub>			-0.7	V	V <sub>DS</sub> = 10 V, V <sub>G1S</sub> = 4 V, I <sub>D</sub> = 10 μA
Gate1 Reverse Current	I <sub>G1SS</sub>			±20	nA	V <sub>DS</sub> = V <sub>G2S</sub> = 0, V <sub>G1S</sub> = ±8 V
Gate2 Reverse Current	I <sub>G2SS</sub>			±20	nA	V <sub>DS</sub> = V <sub>G1S</sub> = 0, V <sub>G2S</sub> = ±8 V
Forward Transfer Admittance	y <sub>fs</sub>	25.0	29.0	35.0	mS	V <sub>DS</sub> = 10 V, V <sub>G2S</sub> = 4 V, I <sub>D</sub> = 10 mA f = 1 kHz
Input Capacitance	C <sub>iss</sub>	1.5	2.5	3.5	pF	V <sub>DS</sub> = 10 V, V <sub>G2S</sub> = 4 V, I <sub>D</sub> = 10 mA f = 1 MHz
Output Capacitance	C <sub>oss</sub>	0.6	1.1	1.6	pF	
Reverse Transfer Capacitance	C <sub>rss</sub>		0.02	0.03	pF	
Power Gain	G <sub>ps</sub>	20.0	23.0		dB	V <sub>DS</sub> = 10 V, V <sub>G2S</sub> = 4 V, I <sub>D</sub> = 10 mA
Noise Figure	NF		2.4	3.5	dB	f = 900 MHz

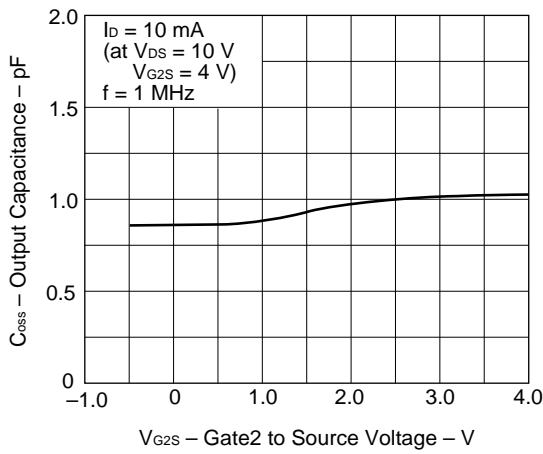
**I<sub>DSX</sub> Classification**

Rank	U55/UEE	U56/UEF
Marking	U55	U56
I <sub>DSX</sub> (mA)	0.4 to 5.0	3.0 to 8.0

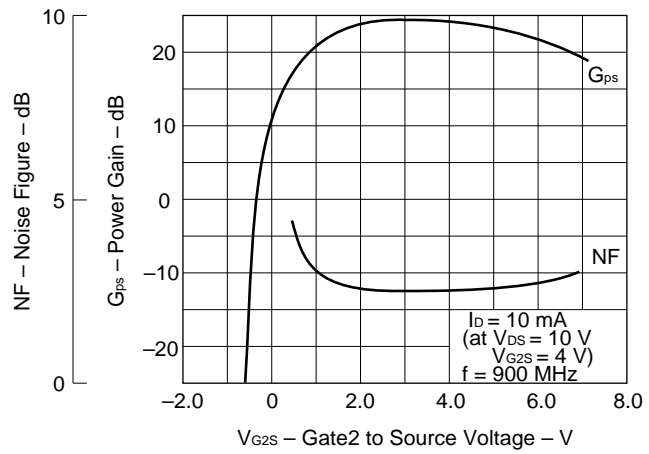
TYPICAL CHARACTERISTICS (T<sub>A</sub> = 25 °C)



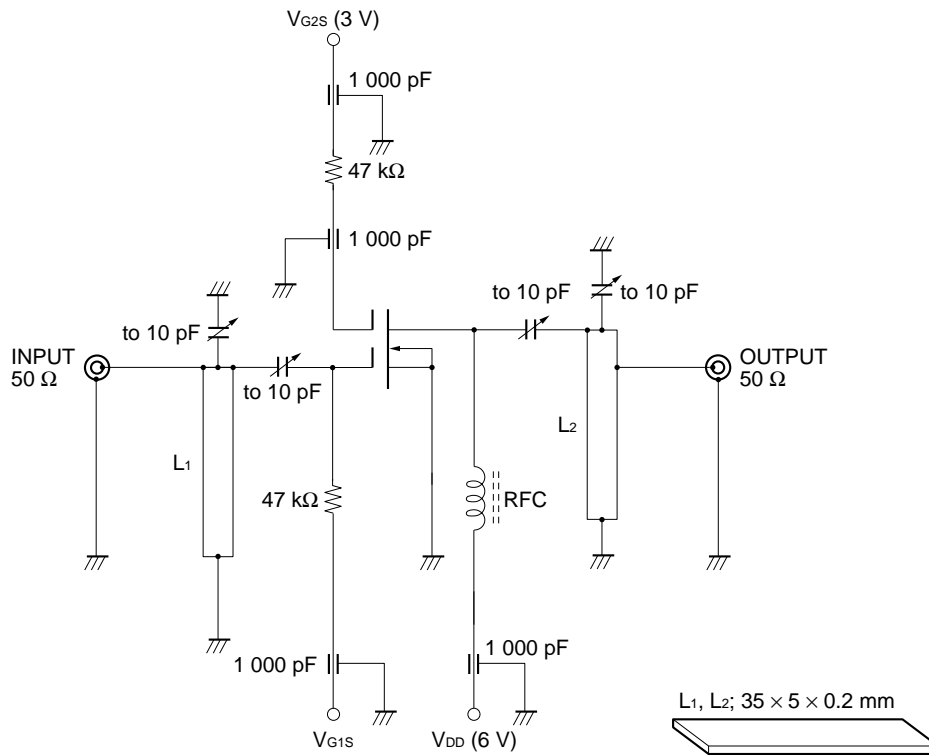
OUTPUT CAPACITANCE vs. GATE2 TO SOURCE VOLTAGE



POWER GAIN AND NOISE FIGURE vs. GATE2 TO SOURCE VOLTAGE



900 MHz  $G_{ps}$  AND NF TEST CIRCUIT



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Anti-radioactive design is not implemented in this product.