

# MOS FIELD EFFECT TRANSISTOR

## 3SK134B

### RF AMP. FOR UHF TV TUNER

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

#### 4 PINS MINI MOLD

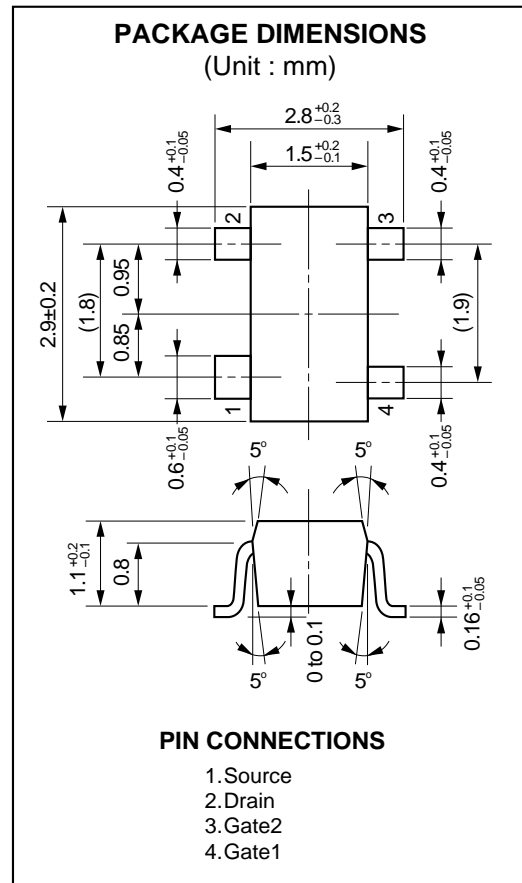
**FEATURES**

- 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 ( $T_A = 25$  °C)**

Drain to Source Voltage	$V_{DSX}$	18	V
Gate1 to Source Voltage	$V_{G1S}$	$\pm 8$ ( $\pm 10$ )*1	V
Gate2 to Source Voltage	$V_{G2S}$	$\pm 8$ ( $\pm 10$ )*1	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	°C
Storage Temperature	$T_{stg}$	-55 to +125	°C

\*1 :  $R_L \geq 10$  k $\Omega$

**PRECAUTION:**

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

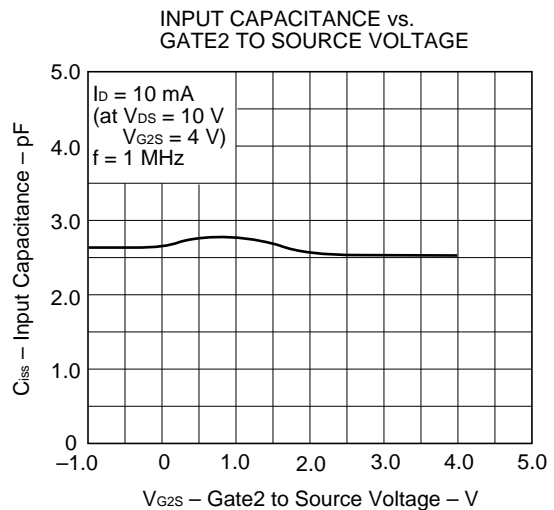
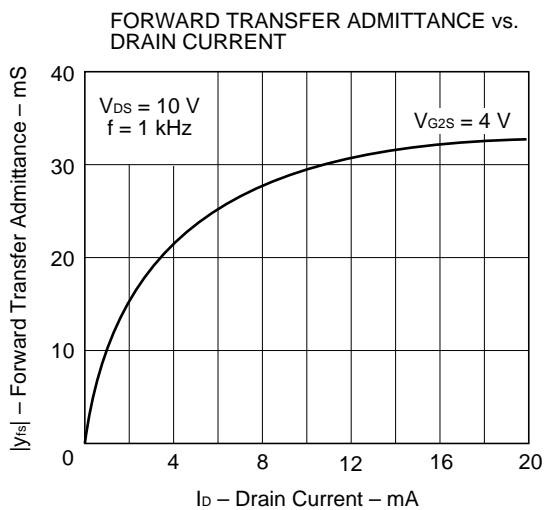
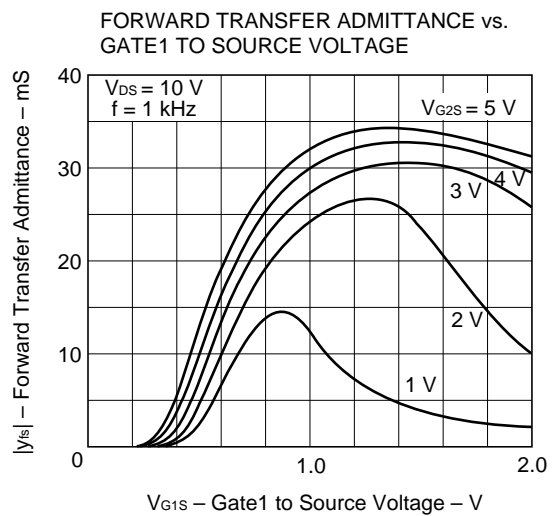
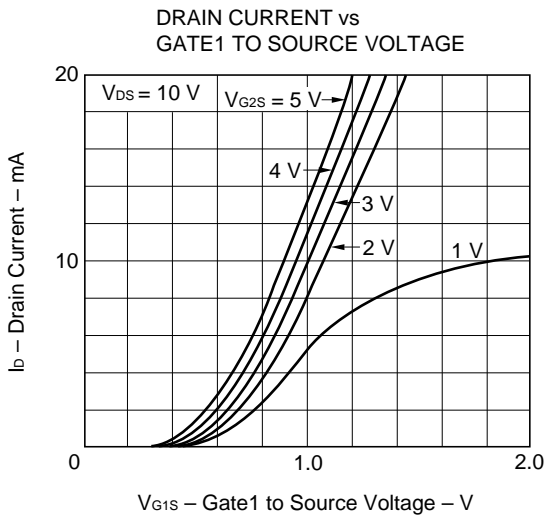
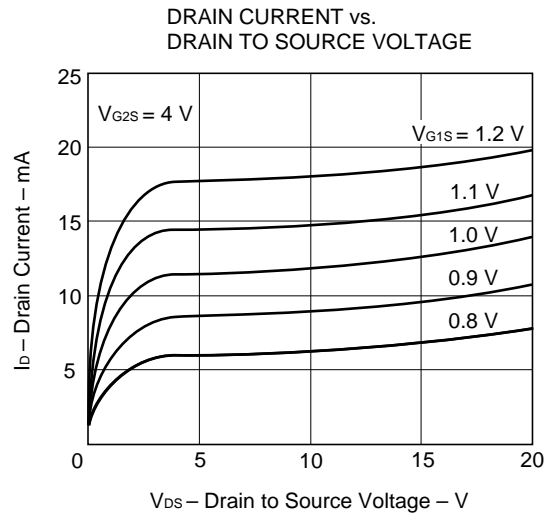
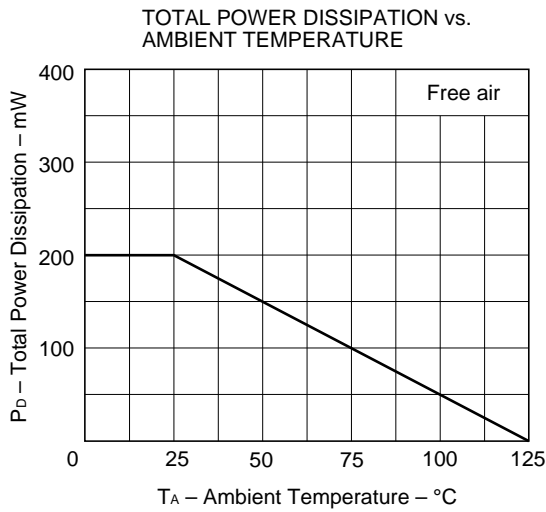
**ELECTRICAL CHARACTERISTICS (T<sub>A</sub> = 25 °C)**

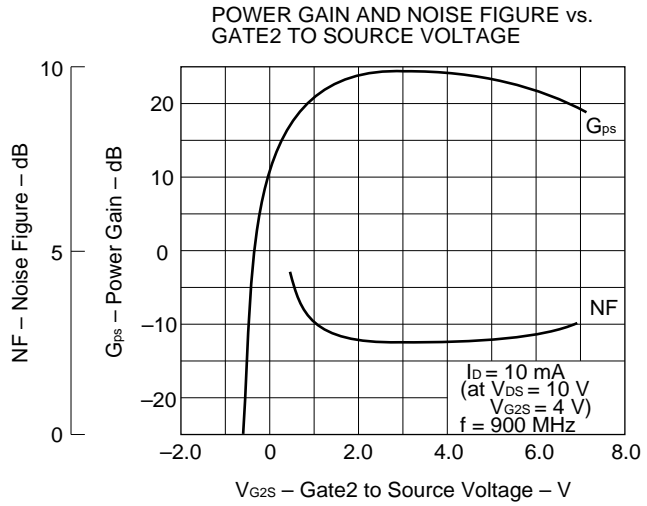
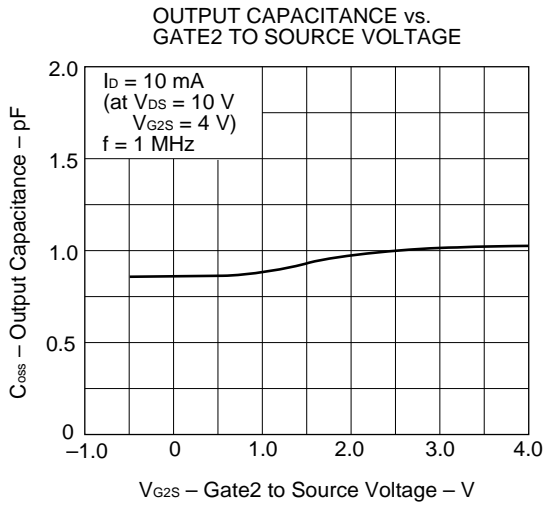
CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Drain to Source Breakdown Voltage	BV <sub>DSX</sub>	18			V	V <sub>G1S</sub> = V <sub>G2S</sub> = -2 V, I <sub>D</sub> = 10 μA
Drain Current	I <sub>DSX</sub>	0.4		8.0	mA	V <sub>DS</sub> = 10 V, V <sub>G2S</sub> = 4 V, V <sub>G1S</sub> = 0.5 V
Gate1 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>G2S(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**

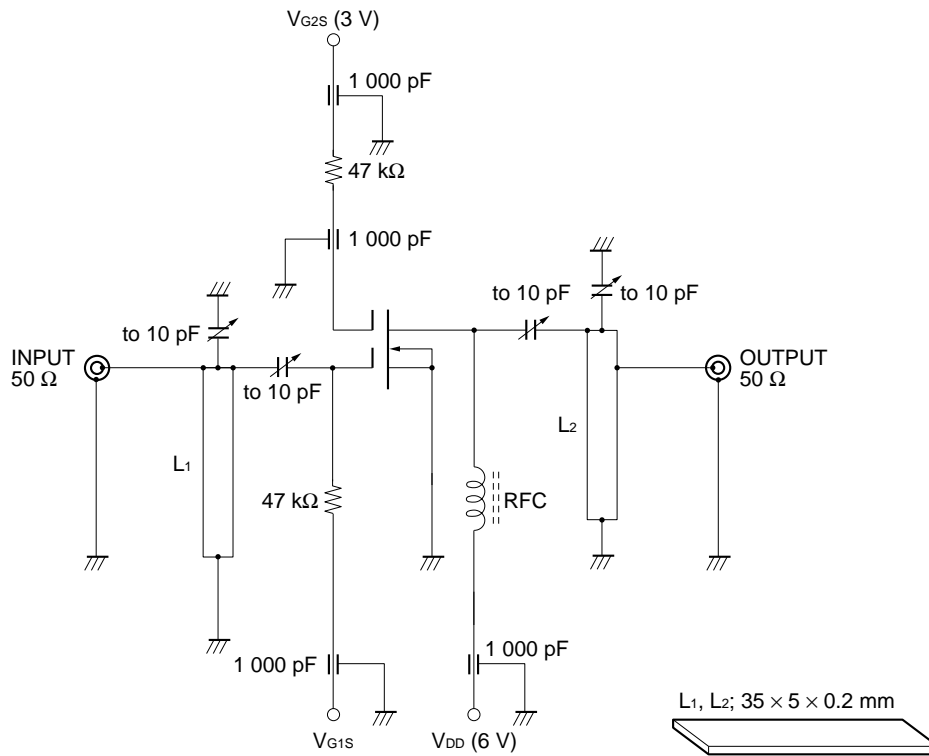
Rank	U55/UEE	U56/UEF
Marking	U55	U56
I <sub>DSX</sub> (mA)	0.4 to 5.0	3.0 to 8.0

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





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



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Anti-radioactive design is not implemented in this product.