

MOS FIELD EFFECT TRANSISTOR

3SK242

RF AMPLIFIER AND MIXER FOR VHF TV TUNER

N-CHANNEL Si DUAL GATE MOS FIELD-EFFECT TRANSISTOR

4 PINS SUPER MINI MOLD

FEATURES

- Low Noise Figure : $NF = 1.3$ dB TYP.
- High Power Gain : $G_{ps} = 24$ dB TYP. ($f = 200$ MHz)
- Suitable for use as RF amplifier in VHF TV tuner.
- Small Package : 4 Pins Super Mini Mold

ORDERING INFORMATION

PART NUMBER	QUANTITY	PACKING STYLE
3SK242-T1	3 Kpcs/Reel.	Embossed tape 8 mm wide. Pin3 (Gate2), Pin4 (Gate1) face to perforation side of the tape.
3SK242-T2	3 Kpcs/Reel.	Embossed tape 8 mm wide. Pin1 (Source), Pin2 (Drain) face to perforation side of the tape.

* Please contact with responsible NEC person, if you require evaluation sample. Unit sample quantity shall be 50 pcs.
(Part No.: 3SK242)

ABSOLUTE MAXIMUM RATINGS ($T_A = 25$ °C)

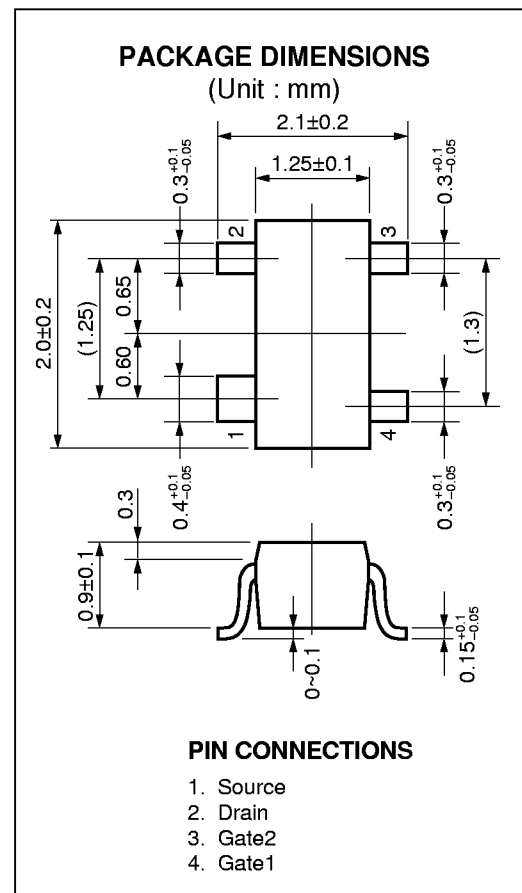
Drain to Source Voltage	V_{DSX}	20	V
Gate1 to Source Voltage	V_{G1S}	± 8	V
Gate2 to Source Voltage	V_{G2S}	± 8	V
Drain Current	I_D	25	mA
Total Power Dissipation	P_D	$130^{*1}/250^{*2}$	mW
Channel Temperature	T_{ch}	125	°C
Storage Temperature	T_{stg}	-55 to +125	°C

*1: Free air

*2: 15 mm × 15 mm × 1.2 mm board by epoxy glass

PRECAUTION

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



查看"3SK242"供应商 **ELECTRICAL CHARACTERISTICS (T_A = 25 °C)**

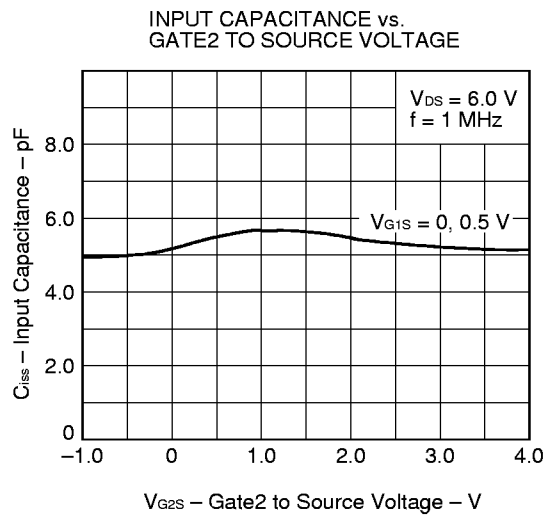
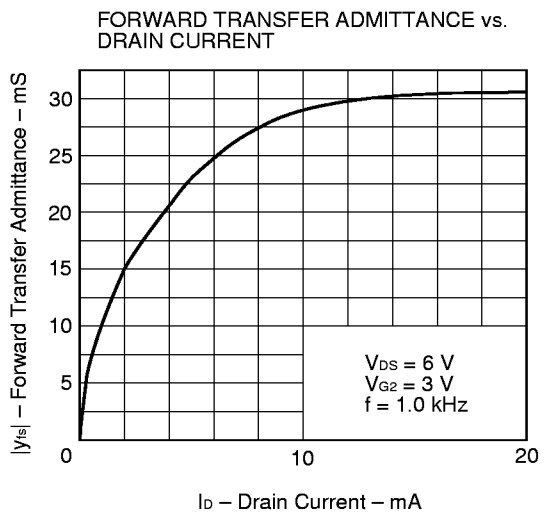
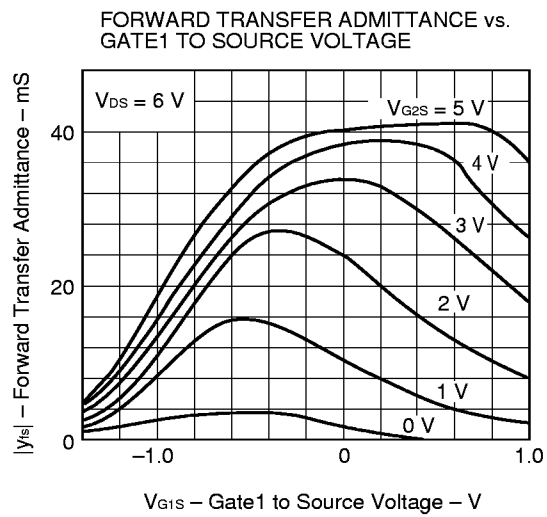
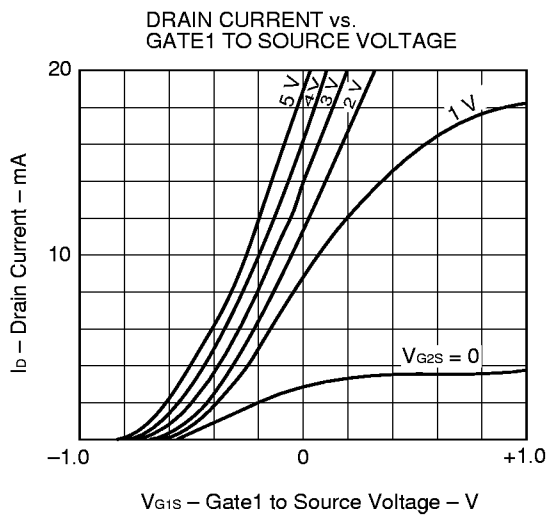
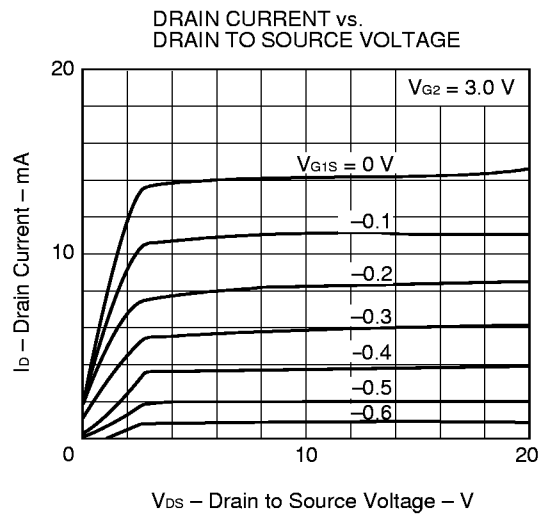
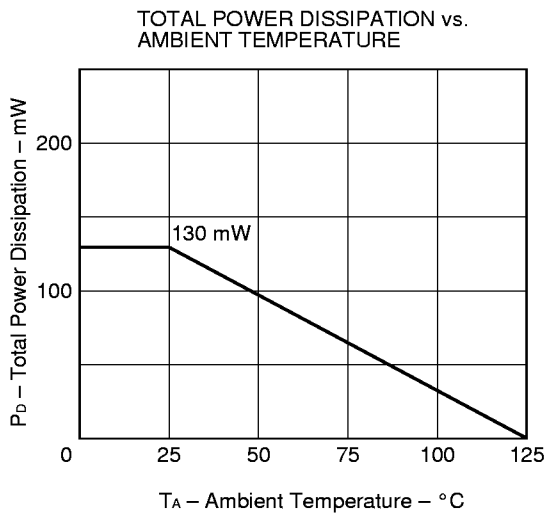
CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
Drain to Source Breakdown Voltage	BV _{DSX}	20			V	V _{G1S} = V _{G2S} = -2 V, I _D = 10 μA
Drain Current	I _{DSS}	7.0		25	mA	V _{DS} = 6 V, V _{G2S} = 3 V, V _{G1S} = 0
Gate1 to Source Cutoff Voltage	V _{G1S(off)}			-2.0	V	V _{DS} = 8 V, V _{G2S} = 0, I _D = 5 μA
Gate2 to Source Cutoff Voltage	V _{G2S(off)}			-1.5	V	V _{DS} = 8 V, V _{G1S} = 0, I _D = 5 μA
Gate1 Reverse Current	I _{G1SS}			±20	nA	V _{DS} = 0, V _{G2S} = 0, V _{G1S} = ±8 V
Gate2 Reverse Current	I _{G2SS}			±20	nA	V _{DS} = 0, V _{G1S} = 0, V _{G2S} = ±8 V
Forward Transfer Admittance	y _{fs}	22	28		mS	V _{DS} = 6 V, V _{G2S} = 3 V, I _D = 10 mA f = 1 kHz
Input Capacitance	C _{iss}	4.0	5.0	6.5	pF	V _{DS} = 6 V, V _{G2S} = 3 V, I _D = 10 mA f = 1 MHz
Output Capacitance	C _{oss}	2.2	2.9	3.7	pF	
Reverse Transfer Capacitance	C _{rss}		0.05	0.08	pF	
Power Gain	G _{ps}	21	24		dB	V _{DS} = 10 V, V _{G2S} = 5 V, I _D = 10 mA
Noise Figure	NF		1.3	2.5	dB	f = 200 MHz

I_{DSS} Classification

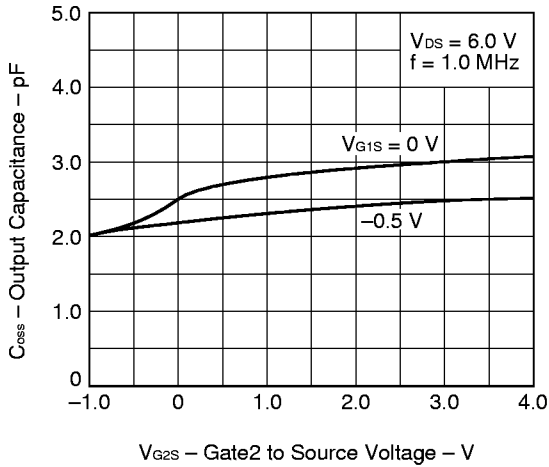
Rank	V11/VAA*	V12/VAB*	V13/VAC*
Marking	V11	V12	V13
I _{DSS} (mA)	7.0 to 13.0	11.0 to 19.0	17.0 to 25.0

* Old Specification / New Specification

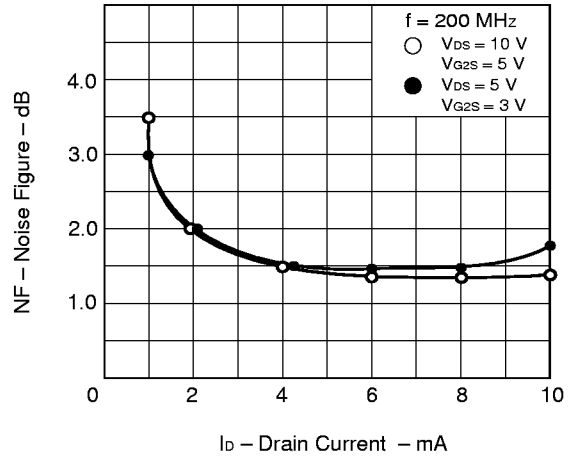
查询 [TYPICAL CHARACTERISTICS](#) (TA = 25 °C)



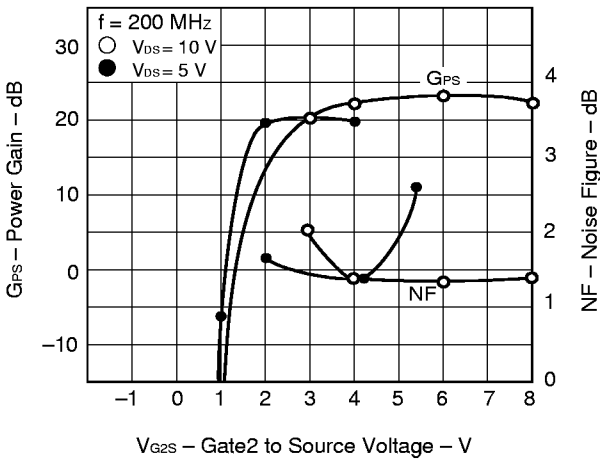
查询"3SK242" datasheet
 OUTPUT CAPACITANCE vs. GATE2 TO SOURCE VOLTAGE



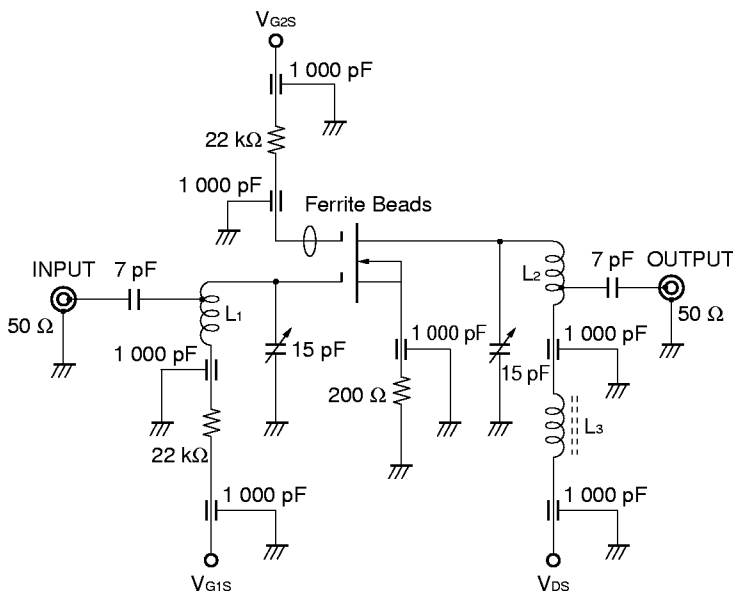
NOISE FIGURE vs. DRAIN CURRENT



NOISE FIGURE, POWER GAIN vs. GATE2 TO SOURCE VOLTAGE



Gps AND NF TEST CIRCUIT AT f = 200 MHz



TEST CONDITION

- $V_{DS} = 10 \text{ V}$, $V_{GS} = 5 \text{ V}$, $I_D = 10 \text{ mA}$
- $f = 200 \text{ MHz}$
- L_1 : $\phi 0.6 \text{ mm U.E.W. } 7 \text{ mm } 3T$
- L_2 : $\phi 0.6 \text{ mm U.E.W. } 7 \text{ mm } 3T$
- L_3 : RFC $2.2 \mu\text{H}$