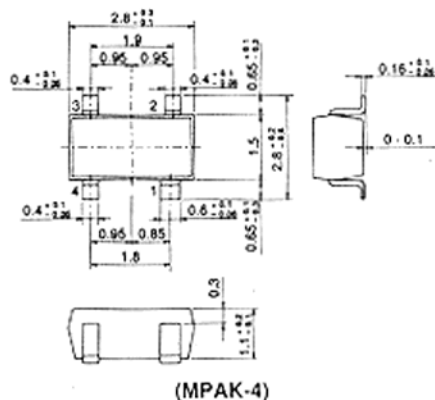


## 3SK162

SILICON N-CHANNEL DUAL GATE MOS FET  
VHF TV TUNER RF AMPLIFIER

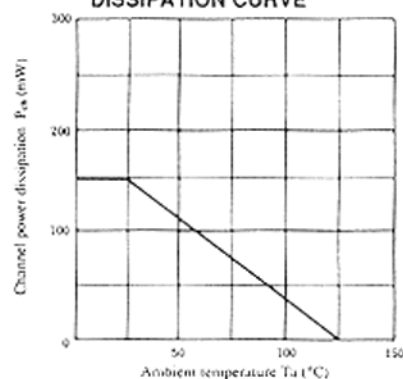


1. Source
  2. Gate 1
  3. Gate 2
  4. Drain
- (Dimensions in mm)

### ■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

Item	Symbol	3SK162	Unit
Drain to source voltage	$V_{DS}$	12	V
Gate 1 to source voltage	$V_{G1S}$	$\pm 8$	V
Gate 2 to source voltage	$V_{G2S}$	$\pm 8$	V
Drain current	$I_D$	35	mA
Channel power dissipation	$P_{ch}$	150	mW
Channel temperature	$T_{ch}$	125	°C
Storage temperature	$T_{stg}$	-55 to +125	°C

### MAXIMUM CHANNEL POWER DISSIPATION CURVE

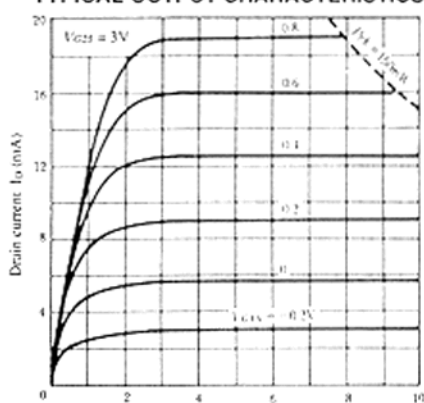


### ■ ELECTRICAL CHARACTERISTICS (Ta=25°C)

Item	Symbol	Test Condition	min.	typ.	max.	Unit
Drain to source breakdown voltage	$V_{(BR)DSX}$	$I_D = 200\mu A, V_{G1S} = V_{G2S} = -5V$	12	—	—	V
Gate 1 to source breakdown voltage	$V_{(BR)G1SS}$	$I_{G1} = \pm 10\mu A, V_{G2S} = V_{DS} = 0$	$\pm 8$	—	—	V
Gate 2 to source breakdown voltage	$V_{(BR)G2SS}$	$I_{G2} = \pm 10\mu A, V_{G1S} = V_{DS} = 0$	$\pm 8$	—	—	V
Gate 1 cutoff current	$I_{G1SS}$	$V_{G1S} = \pm 5V, V_{G2S} = V_{DS} = 0$	—	—	$\pm 50$	nA
Gate 2 cutoff current	$I_{G2SS}$	$V_{G2S} = \pm 5V, V_{G1S} = V_{DS} = 0$	—	—	$\pm 50$	nA
Gate 1 to source cutoff voltage	$V_{G1S(off)}$	$V_{DS} = 6V, V_{G2S} = 3V, I_D = 100\mu A$	—	—	-1.7	V
Gate 2 to source cutoff voltage	$V_{G2S(off)}$	$V_{DS} = 6V, V_{G1S} = 3V, I_D = 100\mu A$	—	—	-1.4	V
Drain current	$I_{DSS}$	$V_{DS} = 4V, V_{G1S} = 0, V_{G2S} = 3V$	0	—	12	mA
Forward transfer admittance	$ y_{fs} $	$V_{DS} = 6V, V_{G2S} = 3V, I_D = 10mA, f = 1kHz$	14	—	—	mS
Input capacitance	$C_{iss}$	$V_{DS} = 6V, V_{G2S} = 3V, I_D = 10mA, f = 1MHz$	—	4.7	—	pF
Output capacitance	$C_{oss}$		—	2.8	—	pF
Reverse transfer capacitance	$C_{rss}$		—	0.03	—	pF
Power gain	PG	$V_{DS} = 4V, V_{G2S} = 3V, I_D = 10mA, f = 200MHz$	18	23	—	dB
Noise figure	NF		—	2.2	3.0	dB

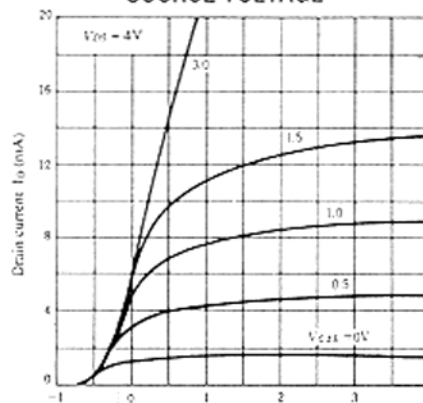
\* Marking is [IT-].

### TYPICAL OUTPUT CHARACTERISTICS



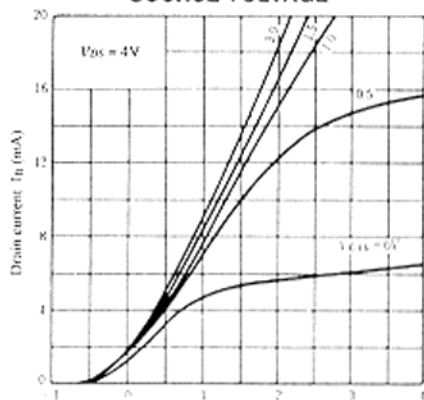
Drain to source voltage  $V_{DS}$  (V)

### DRAIN CURRENT VS. GATE 1 TO SOURCE VOLTAGE



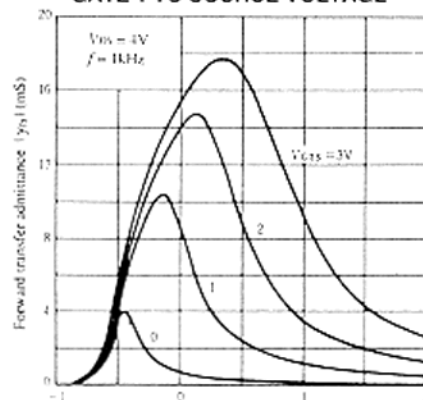
Gate 1 to source voltage  $V_{GS1}$  (V)

### DRAIN CURRENT VS. GATE 2 TO SOURCE VOLTAGE



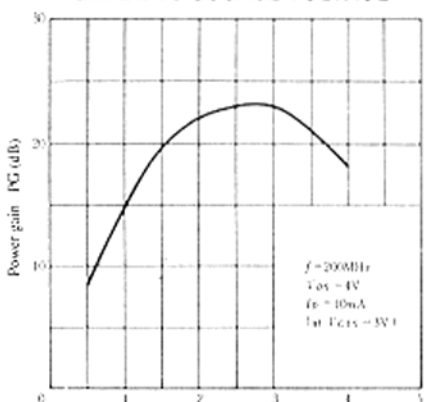
Gate 2 to source voltage  $V_{GS2}$  (V)

### FORWARD TRANSFER ADMITTANCE VS. GATE 1 TO SOURCE VOLTAGE



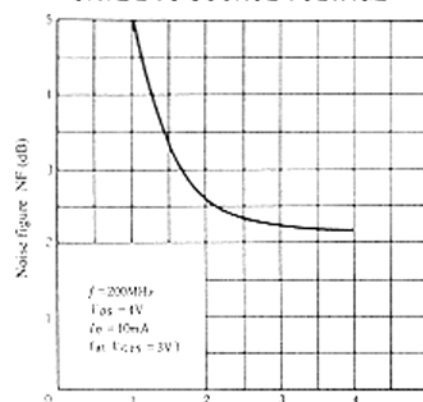
Gate 1 to source voltage  $V_{GS1}$  (V)

### POWER GAIN VS. GATE 2 TO SOURCE VOLTAGE



Gate 2 to source voltage  $V_{GS2}$  (V)

### NOISE FIGURE VS. GATE 2 TO SOURCE VOLTAGE



Gate 2 to source voltage  $V_{GS2}$  (V)

## 3SK162

