

# MOS FIELD EFFECT TRANSISTOR

## 3SK122

**DESCRIPTION** The 3SK122 is designed for use in RF Amplifier and MIXER for VHF TV Tuner.

**FEATURES**

- Suitable for Use as RF Amplifier & Mixer in VHF TV Tuner.
- High  $G_{PS}$  : 25 dB TYP. } at  $V_{DS} = 10$  V,  $V_{G2} = 5.0$  V,
- Low NF : 1.2 dB TYP. }  $I_D = 10$  mA,  $f = 200$  MHz
- High  $G_{PS}$  : 22 dB TYP. } at  $V_{DS} = 5$  V,  $V_{G2} = 3$  V,
- Low NF : 1.3 dB TYP. }  $I_D = 10$  mA,  $f = 200$  MHz

**ABSOLUTE MAXIMUM RATINGS**

Maximum Temperatures

Storage Temperature ..... -55 to +125 °C

Channel Temperature ..... +125 °C Maximum

Maximum Power Dissipation ( $T_a = 25$  °C)

Total Power Dissipation ..... 200 mW

Maximum Voltages and Currents ( $T_a = 25$  °C)

$V_{DSX}$  Drain to Source Voltage ..... 20 V

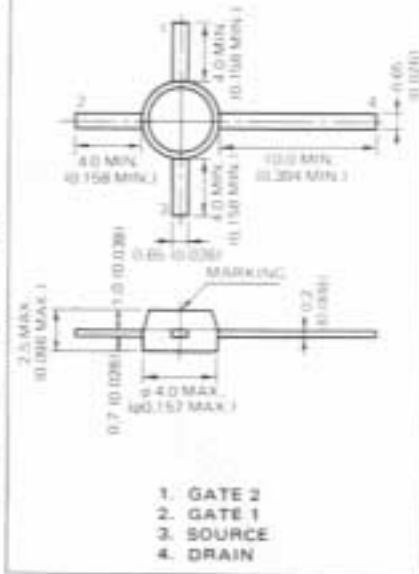
$V_{G1S}$  Gate 1 to Source Voltage ..... ±8 V

$V_{G2S}$  Gate 2 to Source Voltage ..... ±8 V

$I_D$  Drain Current ..... 25 mA

**PACKAGE DIMENSIONS**

in millimeters (inches)



**ELECTRICAL CHARACTERISTICS ( $T_a = 25$  °C)**

SYMBOL	CHARACTERISTIC	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
$BV_{DSX}$	Drain to Source Breakdown Voltage	20			V	$V_{G1S} = -2$ V, $V_{G2S} = -2$ V, $I_D = 10$ $\mu$ A
$I_{DSS}$	Zero-Gate Voltage Drain Current	7.0		25	mA	$V_{DS} = 6.0$ V, $V_{G1S} = 0$ , $V_{G2S} = 3.0$ V
$V_{G1S(off)}$	Gate 1 to Source Cutoff Voltage			-2.0	V	$V_{DS} = 8.0$ V, $V_{G2S} = 0$ , $I_D = 5.0$ $\mu$ A
$V_{G2S(off)}$	Gate 2 to Source Cutoff Voltage			-1.5	V	$V_{DS} = 8.0$ V, $V_{G1S} = 0$ , $I_D = 5.0$ $\mu$ A
$I_{G1SS}$	Gate 1 Reverse Current			±20	$\mu$ A	$V_{DS} = 0$ , $V_{G1S} = 8$ V, $V_{G2S} = 0$
$I_{G2SS}$	Gate 2 Reverse Current			±20	$\mu$ A	$V_{DS} = 0$ , $V_{G1S} = 0$ , $V_{G2S} = \pm 8$ V
$Y_{f1}$	Forward Transfer Admittance	22	28		mS	$V_{DS} = 6.0$ V, $I_D = 10$ mA, $V_{G2S} = 3.0$ V, $f = 1$ kHz
$C_{iss}$	Input Capacitance	4.0	5.0	6.5	pF	$V_{DS} = 6.0$ V, $I_D = 10$ mA,
$C_{oss}$	Output Capacitance	2.2	2.9	3.7	pF	$V_{G2S} = 3.0$ V, $f = 1$ MHz
$C_{rss}$	Reverse Transfer Capacitance		0.05	0.08	pF	
$G_{PS}$	Power Gain	20	25		dB	$V_{DS} = 10$ V, $I_D = 10$ mA,
NF	Noise Figure		1.2	2.5	dB	$f = 200$ MHz, $V_{G2} = 5.0$ V, See Test Circuit

$I_{DSS}$  Classification M : 7.0 - 13 mA L : 11 - 19 mA K : 17 - 25 mA