

NEC
ELECTRON DEVICE

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 Gps : 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 Gps : 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

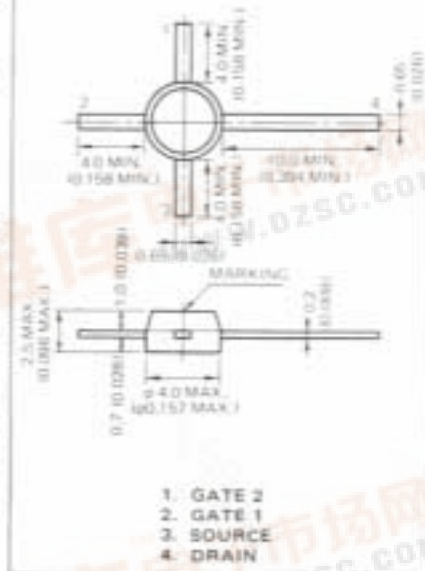
V_{G1S} Gate 1 to Source Voltage ± 8 V

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, $I_D = 10$ μ 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, $V_{G2S} = 0$, $I_D = 5.0$ μ A
$V_{G2S(off)}$	Gate 2 to Source Cutoff Voltage			-1.5	V	$V_{DS} = 8.0$ V, $V_{G1S} = 0$, $I_D = 5.0$ μ A
I_{G1SS}	Gate 1 Reverse Current			± 20	μ A	$V_{DS} = 0$, $V_{G1S} = 8$ V, $V_{G2S} = 0$
I_{G2SS}	Gate 2 Reverse Current			± 20	μ A	$V_{DS} = 0$, $V_{G1S} = 0$, $V_{G2S} = \pm 8$ V
$ Y_{fs} $	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_{rfs}	Reverse Transfer Capacitance		0.05	0.08	pF	
Gps	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

Assignment: M : 7.0 - 13 mA L : 11 - 19 mA K : 17 - 25 mA