

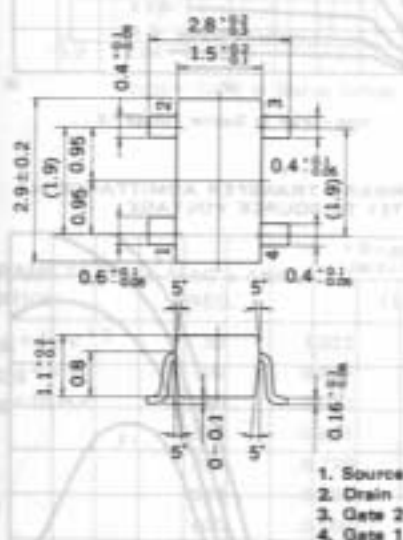
## MOS FIELD EFFECT TRANSISTOR

3SK132A

## RF AMP. FOR UHF TV TUNER

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

## 4PIN MINI MOLD

PACKAGE DIMENSIONS  
in millimeters

## FEATURES

- Suitable for use as RF amplifier in UHF TV tuner.  
(RF Amp. for half wave length resonator :  $\lambda/2$ )
- Low  $C_{rss}$  : 0.02 pF TYP.
- High  $G_{ps}$  : 22.0 dB TYP.
- Low NF : 2.8 dB TYP.

ABSOLUTE MAXIMUM RATINGS ( $T_a = 25^\circ\text{C}$ )

|                         |             |             |                  |
|-------------------------|-------------|-------------|------------------|
| Drain to Source Voltage | $V_{DSX}$   | 20          | V                |
| Gate1 to Source Voltage | $V_{G1S}^*$ | $\pm 10$    | V                |
| Gate2 to Source Voltage | $V_{G2S}^*$ | $\pm 10$    | V                |
| Drain Current           | $I_D$       | 25          | mA               |
| Total Power Dissipation | $P_T$       | 200         | mW               |
| Channel Temperature     | $T_{ch}$    | 150         | $^\circ\text{C}$ |
| Storage Temperature     | $T_{stg}$   | -55 to +150 | $^\circ\text{C}$ |

\*  $R_L \leq 10\text{ k}\Omega$ ELECTRICAL CHARACTERISTICS ( $T_a = 25^\circ\text{C}$ )

| CHARACTERISTIC                    | SYMBOL         | MIN. | TYP. | MAX.     | UNIT | TEST CONDITIONS                                                                  |
|-----------------------------------|----------------|------|------|----------|------|----------------------------------------------------------------------------------|
| Drain to Source Breakdown Voltage | $BV_{DSX}$     | 20   | 24   |          | V    | $V_{G1S}=V_{G2S}=-2\text{ V}, I_D=10\text{ }\mu\text{A}$                         |
| Drain Current                     | $I_{DSS}$      | 0.5  |      | 8        | mA   | $V_{DS}=10\text{ V}, V_{G2S}=4\text{ V}, V_{G1S}=0$                              |
| Gate1 to Source Cutoff Voltage    | $V_{G1S(off)}$ |      |      | -2.0     | V    | $V_{DS}=10\text{ V}, V_{G2S}=4\text{ V}, I_D=10\text{ }\mu\text{A}$              |
| Gate2 to Source Cutoff Voltage    | $V_{G2S(off)}$ |      |      | -0.7     | V    | $V_{DS}=10\text{ V}, V_{G1S}=4\text{ V}, I_D=10\text{ }\mu\text{A}$              |
| Gate1 Reverse Current             | $I_{G1SS}$     |      |      | $\pm 20$ | nA   | $V_{DS}=0, V_{G1S}=\pm 8\text{ V}, V_{G2S}=0$                                    |
| Gate2 Reverse Current             | $I_{G2SS}$     |      |      | $\pm 20$ | nA   | $V_{DS}=0, V_{G2S}=\pm 8\text{ V}, V_{G1S}=0$                                    |
| Forward Transfer Admittance       | $ Y_{fs} $     | 18   | 22   |          | mS   | $V_{DS}=5\text{ V}, V_{G2S}=4\text{ V}, I_D=10\text{ mA}$<br>$f=1.0\text{ kHz}$  |
| Input Capacitance                 | $C_{iss}$      | 1.5  | 2.5  | 3.5      | pF   | $V_{DS}=10\text{ V}, V_{G2S}=4\text{ V}, I_D=10\text{ mA}$<br>$f=1\text{ MHz}$   |
| Output Capacitance                | $C_{oss}$      | 0.5  | 1.1  | 1.5      | pF   |                                                                                  |
| Reverse Transfer Capacitance      | $C_{rss}$      |      | 0.02 | 0.03     | pF   | $V_{DS}=10\text{ V}, V_{G2S}=4\text{ V}, I_D=10\text{ mA}$<br>$f=900\text{ MHz}$ |
| Power Gain                        | $G_{ps}$       | 20.0 | 22.0 | 22       | dB   |                                                                                  |
| Noise Figure                      | NF             |      | 2.8  | 4.5      | dB   |                                                                                  |

 $I_{DSS}$  Classification

| Marking   | U35      | U36    |
|-----------|----------|--------|
| $I_{DSS}$ | 0.5 to 5 | 3 to 8 |