

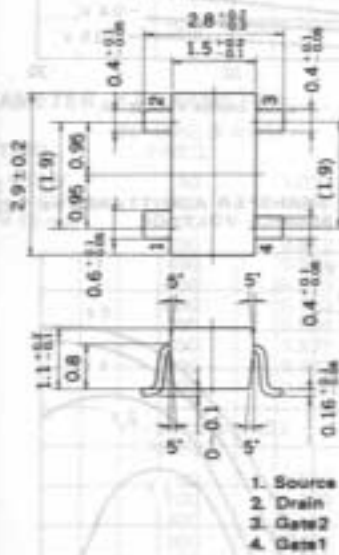
MOS FIELD EFFECT TRANSISTOR

3SK133A

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.
- Low C_{rss} : 0.02 pF TYP.
- High G_{ps} : 17.0 dB TYP.
- Low NF : 3.0 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}^*	± 10	V
Gate2 to Source Voltage	V_{G2S}^*	± 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}	-65 to +150	$^\circ\text{C}$

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

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Drain to Source Breakdown Voltage	BV_{DSX}	20			V	$V_{G1S} = V_{G2S} = -2\text{ V}$, $I_D = 10\ \mu\text{A}$
Drain Current	I_{DSS}	0.01		6	mA	$V_{DS} = 5\text{ V}$, $V_{G2S} = 4\text{ V}$, $V_{G1S} = 0$
Gate1 to Source Cutoff Voltage	$V_{G1S(off)}$			-2.0	V	$V_{DS} = 10\text{ V}$, $V_{G2S} = 4\text{ V}$, $I_D = 10\ \mu\text{A}$
Gate2 to Source Cutoff Voltage	$V_{G2S(off)}$			-0.7	V	$V_{DS} = 10\text{ V}$, $V_{G1S} = 4\text{ V}$, $I_D = 10\ \mu\text{A}$
Gate1 Reverse Current	I_{G1SS}			± 20	nA	$V_{DS} = 0$, $V_{G1S} = \pm 10\text{ V}$, $V_{G2S} = 0$
Gate2 Reverse Current	I_{G2SS}			± 20	nA	$V_{DS} = 0$, $V_{G2S} = \pm 10\text{ V}$, $V_{G1S} = 0$
Forward Transfer Admittance	$ Y_{fs} $	14	17		mS	$V_{DS} = 5\text{ V}$, $V_{G2S} = 4\text{ V}$, $I_D = 10\text{ mA}$ $f = 1\text{ kHz}$
Input Capacitance	C_{iss}	1.5	2.0	2.5	pF	$V_{DS} = 10\text{ V}$, $V_{G2S} = 4\text{ V}$, $I_D = 10\text{ mA}$ $f = 1\text{ MHz}$
Output Capacitance	C_{oss}	0.5	1.0	1.5	pF	
Reverse Transfer Capacitance	C_{rss}		0.02	0.03	pF	
Power Gain	G_{ps}^*	15.0	17.0		dB	$V_{DS} = 10\text{ V}$, $V_{G2S} = 4\text{ V}$, $I_D = 10\text{ mA}$ $f = 900\text{ MHz}$
Noise Figure	NF*		3.0	5.0	dB	

 I_{DSS} Classification

Marking	U45	U46
I_{DSS}	0.01 to 2	1 to 6