

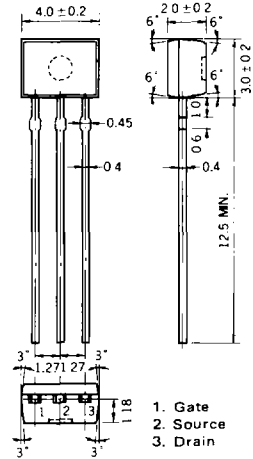
DESCRIPTION The 2SK193 is designed for use in FM tuner of a portable radio receiver.

- FEATURES**
- High $|y_{fs}|_1$: 3.5 mS TYP.
 $|y_{fs}|_1$ ($V_{DS} = 5.0$ V, $I_D = 0.5$ mA, $f = 1.0$ kHz)
 - Low C_{rss} : 0.07 pF TYP.
 C_{rss} ($V_{DS} = 5.0$ V, $V_{GS} = 0$)

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

- Maximum Temperatures
- Storage Temperature -55 to $+125^\circ\text{C}$
 - Junction Temperature $+125^\circ\text{C}$ Maximum
- Maximum Power Dissipation ($T_a = 25^\circ\text{C}$)
- Total Power Dissipation 250 mW
- Maximum Voltages and Currents ($T_a = 25^\circ\text{C}$)
- V_{GDO} Gate to Drain Voltage -20 V
 - V_{GSO} Gate to Source Voltage -1.0 V
 - V_{DSX}^* Drain to Source Voltage 20 V
 - I_D Drain Current 10 mA
 - I_G Gate Current 10 mA
- * $V_{GS} = -2.5$ V

PACKAGE DIMENSIONS
in millimeters



ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

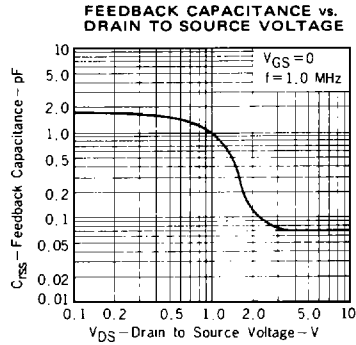
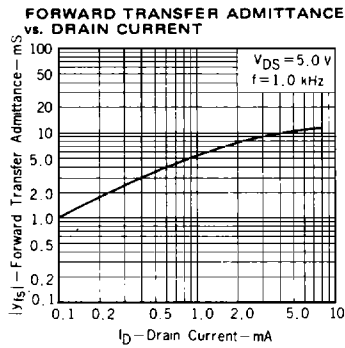
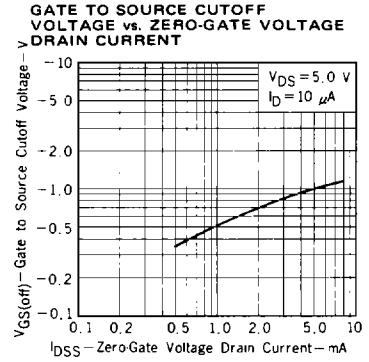
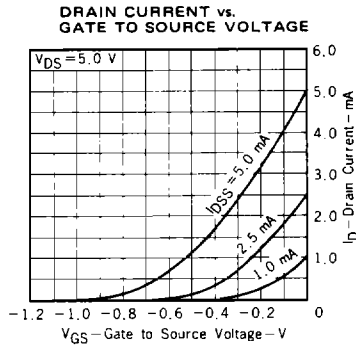
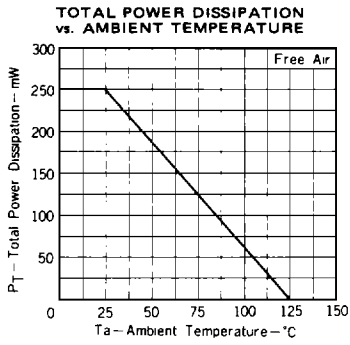
SYMBOL	CHARACTERISTIC	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
I_{DSS}	Zero-Gate Voltage Drain Current	0.5	2.5	8.0	mA	$V_{DS} = 5.0$ V, $V_{GS} = 0$
$ y_{fs} _1$	Forward Transfer Admittance	2.3	3.5		mS	$V_{DS} = 5.0$ V, $I_D = 0.5$ mA, $f = 1.0$ kHz
$ y_{fs} _2$	Forward Transfer Admittance	2.3	8.5		mS	$V_{DS} = 5.0$ V, $V_{GS} = 0$, $f = 1.0$ kHz
C_{iss}	Input Capacitance		5.0	6.5	pF	$V_{DS} = 5.0$ V, $V_{GS} = 0$, $f = 1.0$ MHz
C_{rss}	Feedback Capacitance		0.07	0.25	pF	$V_{DS} = 5.0$ V, $V_{GS} = 0$, $f = 1.0$ MHz
C_{oss}	Output Capacitance		4.5	6.0	pF	$V_{DS} = 5.0$ V, $V_{GS} = 0$, $f = 1.0$ MHz
G_{ps}	Power Gain	13	21		dB	$V_{DS} = 5.0$ V, $V_{GS} = 0$, Z_{in} , $Z_{out} = 50 \Omega$, $f = 100$ MHz, See test circuit
NF	Noise Figure		3.0	6.0	dB	$V_{DS} = 5.0$ V, $V_{GS} = 0$, Z_{in} , $Z_{out} = 50 \Omega$, $f = 100$ MHz, See test circuit
I_{GSS}	Gate Cutoff Current			-100	nA	$V_{GS} = -0.5$ V, $V_{DS} = 0$
$V_{GS(off)}$	Gate to Source Cutoff Voltage			-2.5	V	$V_{DS} = 5.0$ V, $I_D = 10 \mu\text{A}$

Classification of I_{DSS}

Rank	U	E	F	P	K	L	M
$I_{DSS}(\text{mA})$	0.5 - 1.0	0.75 - 1.5	1.0 - 2.0	1.5 - 3.0	2.0 - 4.0	3.0 - 6.0	4.0 - 8.0

I_{DSS} Test Conditions: $V_{DS} = 5.0$ V, $V_{GS} = 0$

TYPICAL CHARACTERISTICS (Ta = 25 °C unless otherwise noted)



NOISE FIGURE and POWER GAIN TEST CIRCUIT (f = 100 MHz)

