NEC
ELECTRON DEVICE

N-CHANNEL JUNCTION FIELD-EFFECT TRANSISTOR

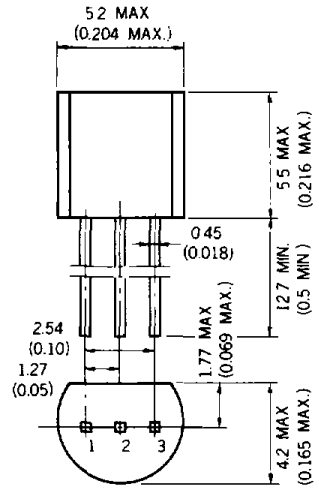
2SK195

DESCRIPTION The 2SK195 is designed for use in FM tuner of a potable radio receiver.

FEATURES

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

PACKAGE DIMENSIONS
in millimeters (inches)



1. GATE
2. SOURCE
3. DRAIN

EIAJ : SC-43
JEDEC : TO-92
IEC : PA33

ABSOLUTE MAXIMUM RATINGS

Maximum Temperatures

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

Junction Temperature . . . . . +125 °C Maximum

Maximum Power Dissipation (Ta = 25 °C)

Total Power Dissipation . . . . . 250 mW

Maximum Voltages and Currents (Ta = 25 °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

ELECTRICAL CHARACTERISTICS (Ta = 25 °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			mS	V_{DS}=5.0 V, I_D=0.5 mA, 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 Ω 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 Ω 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 μA

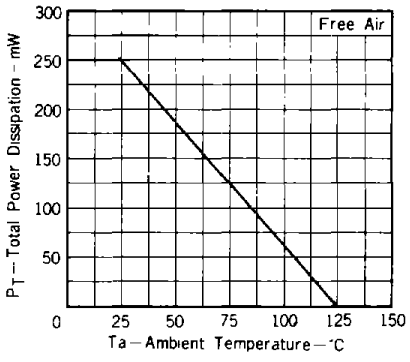
Classification of I_{DSS}

Rank	E	F	H	J
I_{DSS}(mA)	0.5 − 1.5	1.0 − 3.0	2.0 − 6.0	4.0 − 8.0

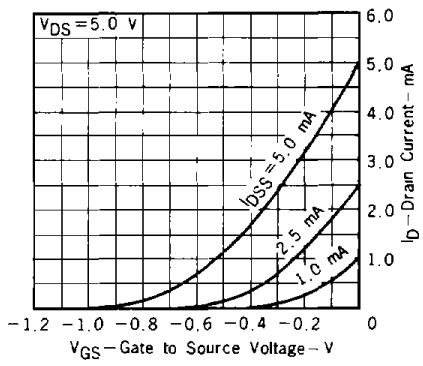
I_{DSS} Test Conditions: V_{DS} = 5.0 V, V_{GS} = 0

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

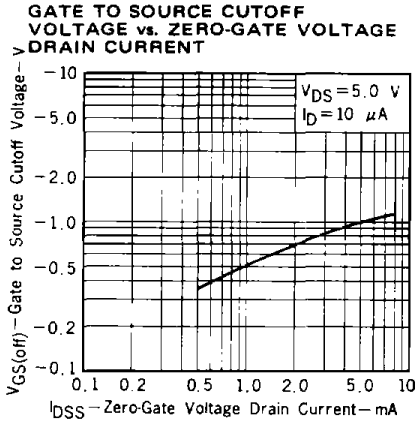
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



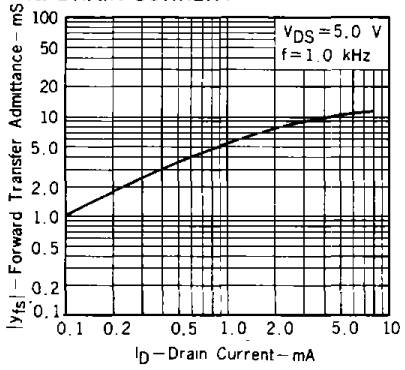
DRAIN CURRENT vs. GATE TO SOURCE VOLTAGE



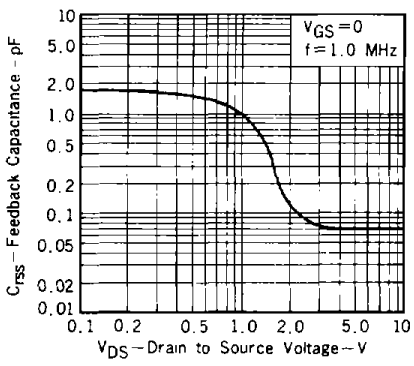
GATE TO SOURCE CUTOFF VOLTAGE vs. ZERO-GATE VOLTAGE DRAIN CURRENT



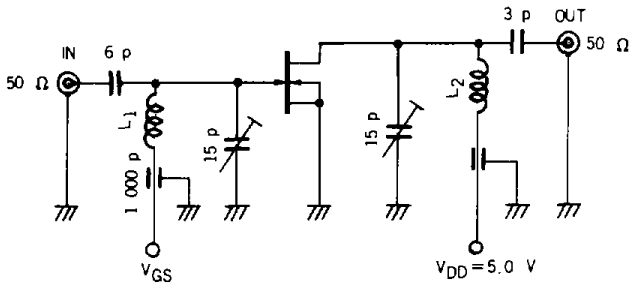
FORWARD TRANSFER ADMITTANCE vs. DRAIN CURRENT



FEEDBACK CAPACITANCE vs. DRAIN TO SOURCE VOLTAGE



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



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