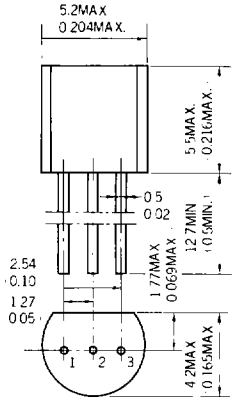
N-CHANNEL JUNCTION FIELD-EFFECT TRANSISTOR

2SK104

DESCRIPTION The 2SK104 is designed for use in analog-switch, variable-resistor, RF amplifier and AF amplifier.

PACKAGE DIMENSIONS
in millimeters (inches)



1. GATE
2. SOURCE
3. DRAIN

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

ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)

Maximum Temperature

- 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

- Gate-Drain Voltage V_{GDO} . . . . . -30 V
- Gate-Source Voltage V_{GSO} . . . . . -30 V
- Drain-Source Voltage V_{DSX}* . . . . . 30 V
- Drain Current I_D . . . . . 20 mA
- Gate Current I_G . . . . . 10 mA

*V_{GS} = -5.0V

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

SYMBOL	CHARACTERISTIC	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
I_{GSS}	Gate Cutoff Current			-1.0	nA	V_{GS}=-30V, V_{DS}=0
I_{DSS}	Zero-Gate Voltage Drain Current	0.5	2.5	12	mA	V_{DS}=5.0V, V_{GS}=0
$V_{GS(off)}$	Gate to Source Cutoff Voltage	-0.25	-1.1	-4.5	V	V_{DS}=5.0V, I_D=10μA
$\|Y_{fs}\|_1$	Forward Transfer Admittance	1.5	2.1		m℧	V_{DS}=5.0V, I_D=0.5mA, f=1.0kHz
$\|Y_{fs}\|_2$	Forward Transfer Admittance	1.5	4.1		m℧	V_{DS}=5.0V, V_{GS}=0, f=1.0kHz
Ciss	Input Capacitance		4.1	6.0	pF	V_{DS}=10V, V_{GS}=0, f=1.0MHz
Crss	Feedback Capacitance		0.9	1.3	pF	V_{DS}=10V, V_{GS}=0, f=1.0MHz

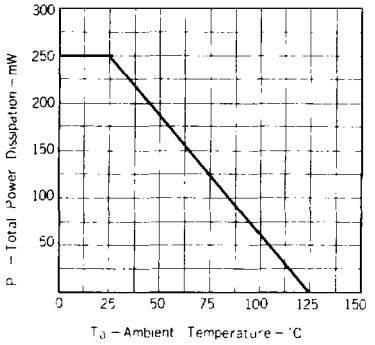
Classification of I_{DSS}

Rank	E	F	H	J
I_{DSS}(mA)	0.5 – 1.5	1.0 – 3.0	2.0 – 6.0	4.0 – 12

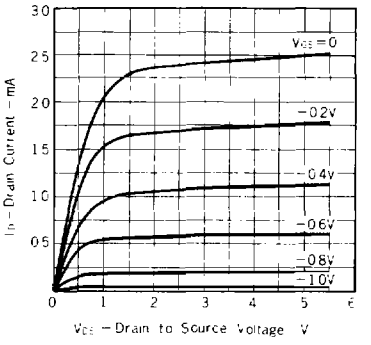
I_{DSS} Test Conditions: V_{DS}=5.0V, V_{GS}=0

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

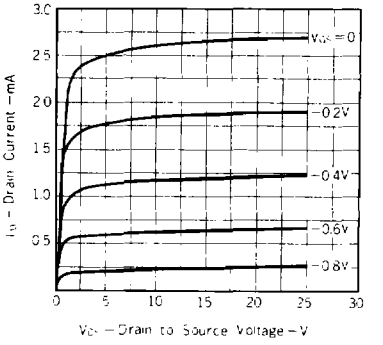
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



DRAIN CURRENT vs. DRAIN TO SOURCE VOLTAGE



DRAIN CURRENT vs. DRAIN TO SOURCE VOLTAGE



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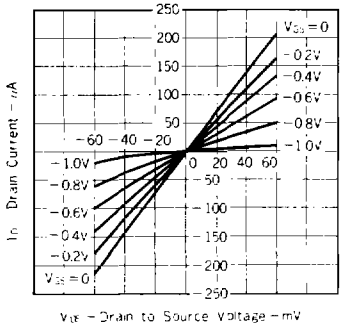
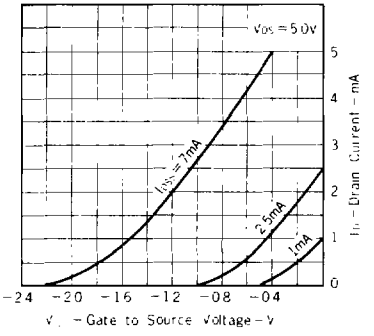
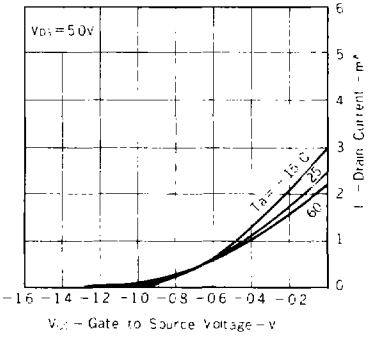
DRAIN CURRENT vs. DRAIN TO SOURCE VOLTAGE



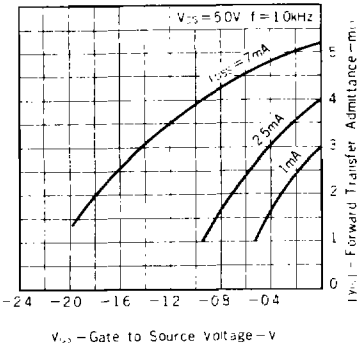
DRAIN CURRENT vs. GATE TO SOURCE VOLTAGE



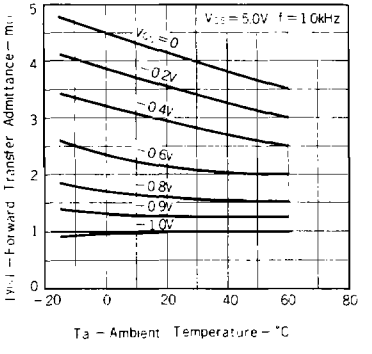
DRAIN CURRENT vs. GATE TO SOURCE VOLTAGE



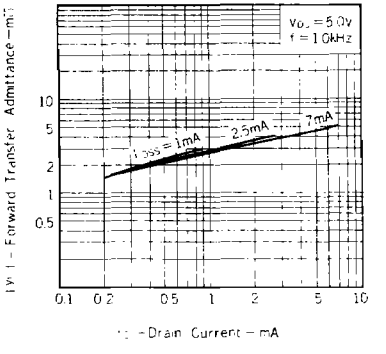
FORWARD TRANSFER ADMITTANCE vs. GATE TO SOURCE VOLTAGE



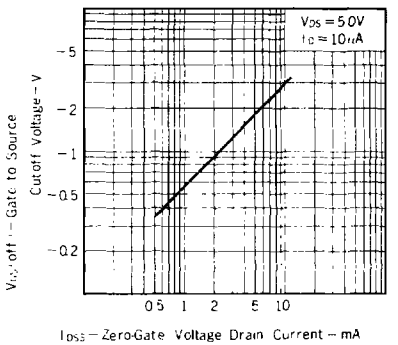
FORWARD TRANSFER ADMITTANCE vs. AMBIENT TEMPERATURE



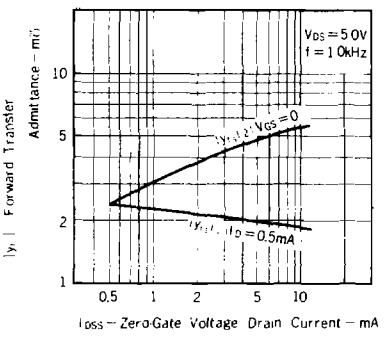
FORWARD TRANSFER ADMITTANCE vs. DRAIN CURRENT



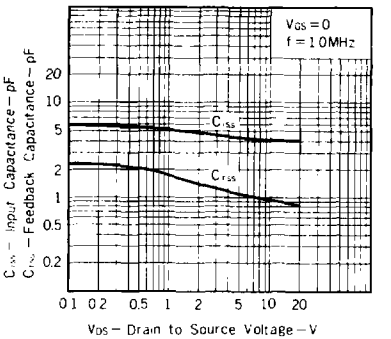
GATE TO SOURCE CUTOFF VOLTAGE
vs. ZERO-GATE VOLTAGE DRAIN CURRENT



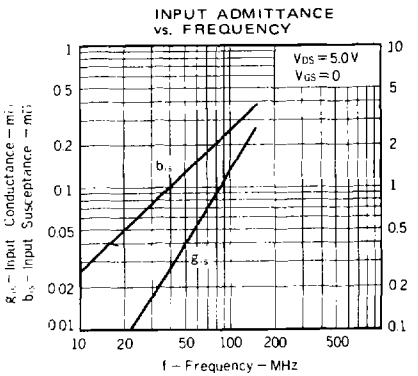
FORWARD TRANSFER ADMITTANCE
vs. ZERO-GATE VOLTAGE DRAIN CURRENT



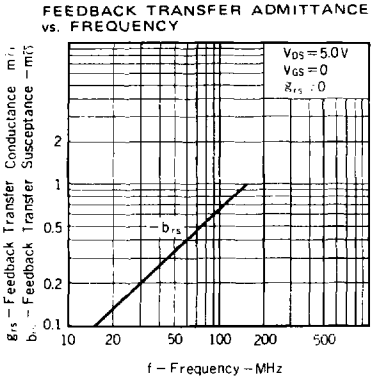
INPUT AND FEEDBACK CAPACITANCE
vs. DRAIN TO SOURCE VOLTAGE



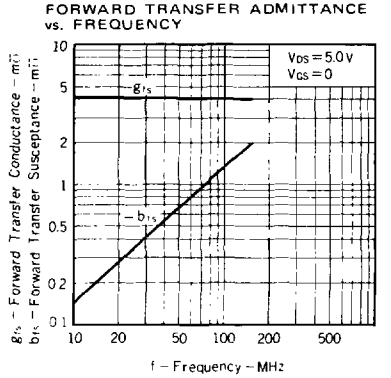
INPUT ADMITTANCE
vs. FREQUENCY



FEEDBACK TRANSFER ADMITTANCE
vs. FREQUENCY



FORWARD TRANSFER ADMITTANCE
vs. FREQUENCY



OUTPUT ADMITTANCE
vs. FREQUENCY