

# N-CHANNEL JUNCTION FIELD-EFFECT TRANSISTOR

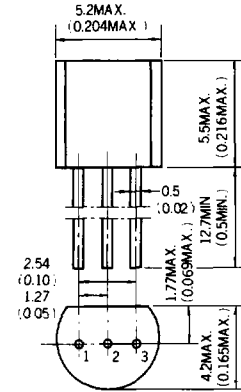
## 2SK105

**DESCRIPTION** The 2SK105 is designed for use in analog-switch, variable-resistor and AF amplifier.

**PACKAGE DIMENSIONS**  
in millimeters (inches)

**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 <sub>GDO</sub> ..... -50 V
Gate-Source Voltage	V <sub>GSO</sub> ..... -50 V
Drain-Source Voltage	V <sub>DSX</sub> * ..... 50 V
Drain Current	I <sub>D</sub> ..... 20 mA
Gate Current	I <sub>G</sub> ..... 10 mA
	*V <sub>GS</sub> = -5.0V



- |           |               |
|-----------|---------------|
| 1. DRAIN  | EIAJ : SC-43  |
| 2. GATE   | JEDEC : TO-92 |
| 3. SOURCE | IEC : PA33    |



**ELECTRICAL CHARACTERISTICS (Ta = 25°C)**

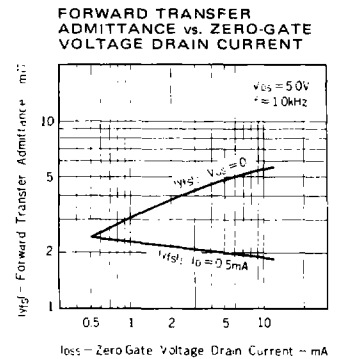
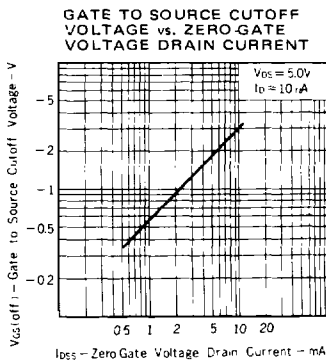
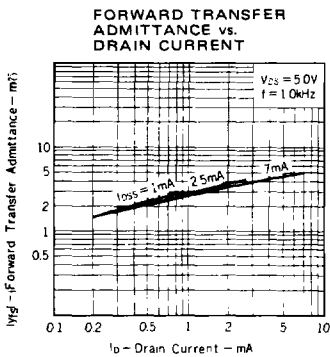
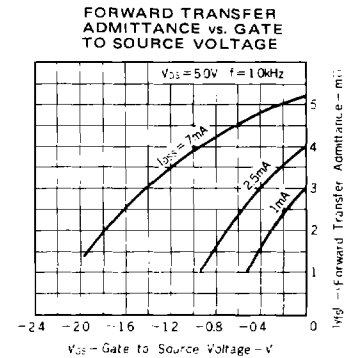
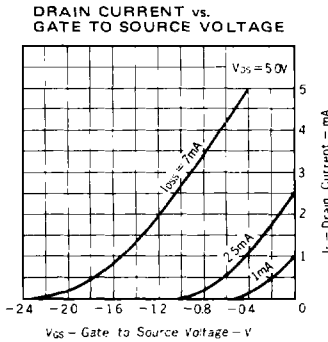
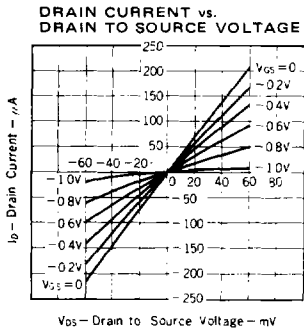
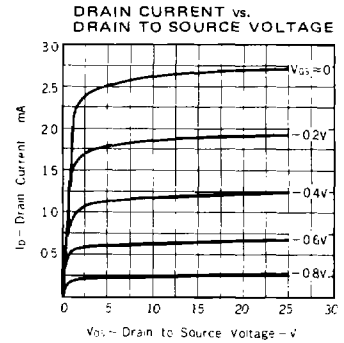
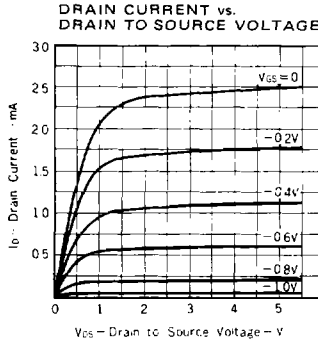
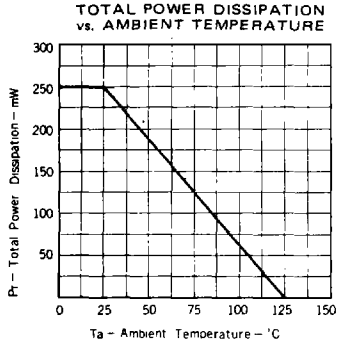
SYMBOL	CHARACTERISTIC	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
I <sub>GSS</sub>	Gate Cutoff Current			-1.0	nA	V <sub>GS</sub> = -30V, V <sub>DS</sub> = 0
I <sub>DSS</sub>	Zero-Gate Voltage Drain Current	0.5	2.5	12	mA	V <sub>DS</sub> = 5.0V, V <sub>GS</sub> = 0
V <sub>GS(off)</sub>	Gate to Source Cutoff Voltage	-0.25	-1.1	-4.5	V	V <sub>DS</sub> = 5.0V, I <sub>D</sub> = 10μA
Y <sub>fs</sub>   <sub>1</sub>	Forward Transfer Admittance	1.5	2.1		mΩ	V <sub>DS</sub> = 5.0V, I <sub>D</sub> = 0.5mA, f = 1.0kHz
Y <sub>fs</sub>   <sub>2</sub>	Forward Transfer Admittance	1.5	4.1		mΩ	V <sub>DS</sub> = 5.0V, V <sub>GS</sub> = 0, f = 1.0kHz
C <sub>iss</sub>	Input Capacitance		4.1	6.0	pF	V <sub>DS</sub> = 10V, V <sub>GS</sub> = 0, f = 1.0MHz
C <sub>rss</sub>	Feedback Capacitance		0.9	1.3	pF	V <sub>DS</sub> = 10V, V <sub>GS</sub> = 0, f = 1.0MHz

**Classification of I<sub>DSS</sub>**

Rank	E	F	H	J
I <sub>DSS</sub> (mA)	0.5 - 1.5	1.0 - 3.0	2.0 - 6.0	4.0 - 12

I<sub>DSS</sub> Test Conditions : V<sub>DS</sub> = 5.0V, V<sub>GS</sub> = 0

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



**INPUT AND FEEDBACK CAPACITANCE  
vs. DRAIN TO SOURCE VOLTAGE**

