

# N-CHANNEL JUNCTION FIELD-EFFECT TRANSISTOR

## 2SK68

**DESCRIPTION** The 2SK68 is designed for use in driver stage of AF amplifier.

**FEATURES**

- High voltage, high  $|Y_{fs}|$  and wide dynamic range  
 $V_{GDO} > -50V, |Y_{fs}| (V_{DS} = 10V, V_{GS} = 0) : 12 \text{ m}\Omega \text{ TYP.}$
- Low leakage current  
 $I_{GSS} < -1.0\text{nA} (V_{GS} = -20V)$

**ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)**

Maximum Temperatures

Storage Temperature . . . . . -55 to +125°C  
 Junction Temperature . . . . . +125°C Maximum

Maximum Power Dissipation (Ta = 25°C)

Total Power Dissipation . . . . . 250 mW

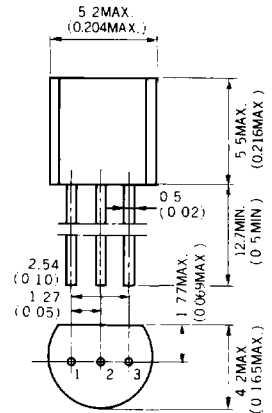
Maximum Voltages and Currents

$V_{GDO}$  Gate to Drain Voltage . . . . . -50 V  
 $V_{GSO}$  Gate to Source Voltage . . . . . -50 V  
 $V_{DSX}^*$  Drain to Source Voltage . . . . . 50 V  
 $I_D$  Drain Current . . . . . 20 mA  
 $I_G$  Gate Current . . . . . 10 mA

\*  $V_{GS} = -2.0 \text{ V}$

**PACKAGE DIMENSIONS**

in millimeters (inches)



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
$I_{DSS}$	Zero-Gate Voltage Drain Current	0.5	3.0	12	mA	$V_{DS}=10V, V_{GS}=0$
$ Y_{fs} _1$	Forward Transfer Admittance	4.0	5.2		$\text{m}\Omega$	$V_{DS}=10V, I_D=0.5\text{mA}, f=1.0\text{kHz}$
$ Y_{fs} _2$	Forward Transfer Admittance	4.0	12		$\text{m}\Omega$	$V_{DS}=10V, V_{GS}=0, f=1.0\text{kHz}$
$C_{ISS}$	Input Capacitance		13		pF	$V_{DS}=10V, V_{GS}=0, f=1.0\text{MHz}$
$C_{RSS}$	Feedback Capacitance		2.6		pF	$V_{DS}=10V, V_{GS}=0, f=1.0\text{MHz}$
$I_{GSS}$	Gate Cutoff Current			-1.0	nA	$V_{GS}=-20V, V_{DS}=0$
$V_{GS(off)}$	Gate to Source Cutoff Voltage	-0.13	-0.5	-1.5	V	$V_{DS}=10V, I_D=10\mu A$

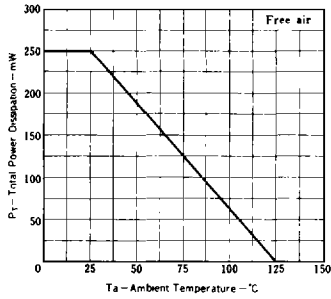
Classification of  $I_{DSS}$

Rank	K	L	M	N
$I_{DSS}(\text{mA})$	0.5 - 1.5	1.0 - 3.0	2.0 - 6.0	4.0 - 12

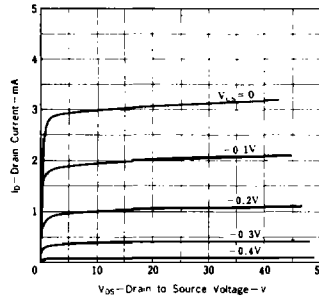
$I_{DSS}$  Test Conditions :  $V_{DS} = 10V, V_{GS} = 0$

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

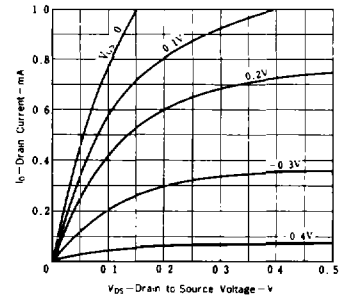
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



DRAIN CURRENT vs. DRAIN TO SOURCE VOLTAGE

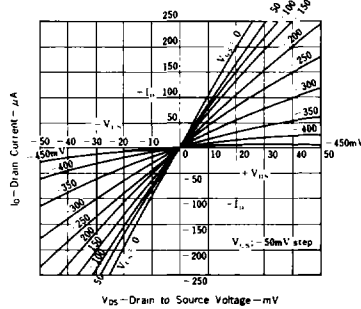


DRAIN CURRENT vs. DRAIN TO SOURCE VOLTAGE

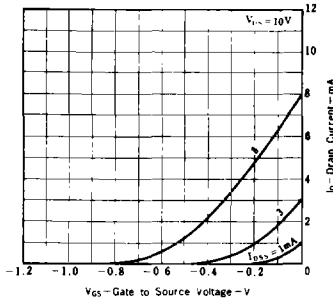


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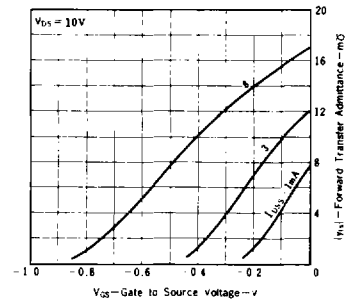
DRAIN CURRENT vs. DRAIN TO SOURCE VOLTAGE



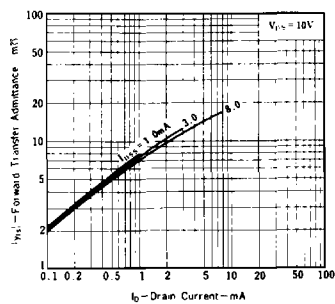
DRAIN CURRENT vs. GATE TO SOURCE VOLTAGE



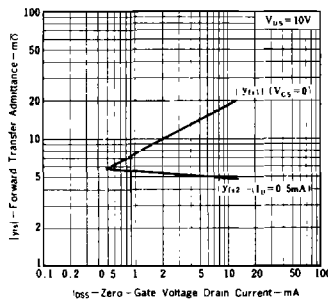
FORWARD TRANSFER ADMITTANCE vs. GATE TO SOURCE VOLTAGE



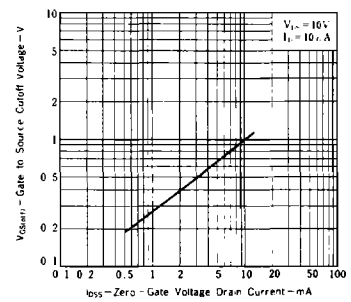
FORWARD TRANSFER ADMITTANCE vs. DRAIN CURRENT



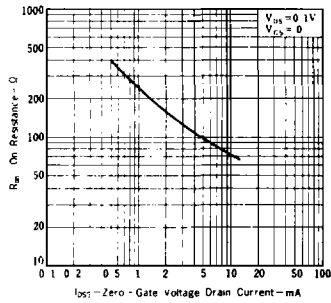
FORWARD TRANSFER ADMITTANCE vs. ZERO-GATE VOLTAGE DRAIN CURRENT



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



ON RESISTANCE  
vs. ZERO-GATE VOLTAGE DRAIN CURRENT



INPUT AND FEEDBACK CAPACITANCE  
vs. DRAIN TO SOURCE VOLTAGE

