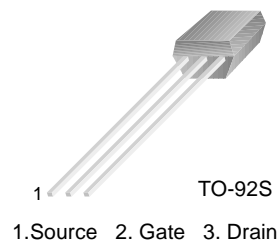


## KSK596

### Capacitor Microphone Applications

- Especially Suited for use in Audio, Telephone Capacitor Microphones
- Excellent Voltage Characteristic
- Excellent Transient Characteristic



### Si N-channel Junction FET

#### Absolute Maximum Ratings $T_a=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Ratings	Units
$V_{GDO}$	Gate-Drain Voltage	-20	V
$I_G$	Gate Current	10	mA
$I_D$	Drain Current	1	mA
$P_D$	Power Dissipation	100	mW
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{STG}$	Storage Temperature	-55 ~ 150	$^\circ\text{C}$

#### Electrical Characteristics $T_a=25^\circ\text{C}$ unless otherwise noted

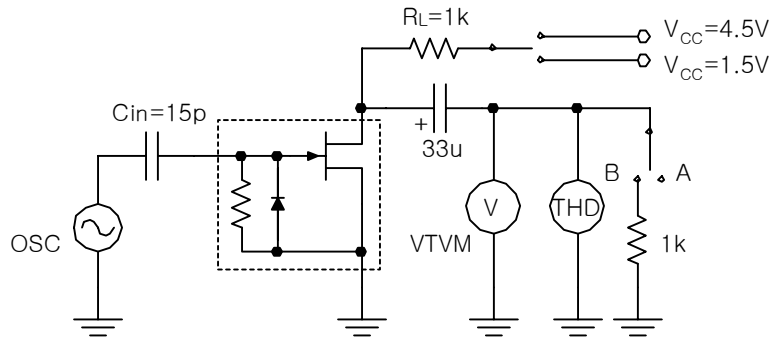
Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
$BV_{GDO}$	Gate-Drain Breakdown Voltage	$I_G = -100\mu\text{A}$	-20			V
$V_{GS(off)}$	Gate-Source Cut-off Voltage	$V_{DS}=5\text{V}, I_D=1\mu\text{A}$		-0.6	-1.5	V
$I_{DSS}$	Drain Current	$V_{DS}=5\text{V}, V_{GS}=0$	100		800	$\mu\text{A}$
$ Y_{FS} $	Forward Transfer Admittance	$V_{DS}=5\text{V}, V_{GS}=0, f=1\text{MHz}$	0.4	1.2		ms
$C_{ISS}$	Input Capacitance	$V_{DS}=5\text{V}, V_{GS}=0, f=1\text{MHz}$		3.5		pF
$C_{RSS}$	Output Capacitance	$V_{DS}=5\text{V}, V_{GS}=0, f=1\text{MHz}$		0.65		pF

### $I_{DSS}$ Classification

Classification	A	B	C	D	E
$I_{DSS}(\mu\text{A})$	100 ~ 170	150 ~ 240	210 ~ 350	320 ~ 480	440 ~ 800

**Specified Test Circuit**  $T_a=25^{\circ}\text{C}$  unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
$G_V$	Voltage Gain	$V_{IN}=10\text{mV}$ , $f=1\text{KHz}$		-3		dB
$\Delta G_V$	Reduced Voltage Characteristic	$V_{IN}=10\text{mV}$ , $f=1\text{KHz}$ $V_{CC}=4.5\text{V} \rightarrow 1.5\text{V}$		-1.2	-3.5	dB
$\Delta G_V F$	Frequency Characteristic	$f=1\text{KHz}$ to $110\text{Hz}$			-1	dB
$Z_{IN}$	Input Resistance	$f=1\text{KHz}$	25			$\text{M}\Omega$
$Z_O$	Output Resistance	$f=1\text{KHz}$			700	$\Omega$
THD	Total Harmonic Distortion	$V_{IN}=30\text{mV}$ , $f=1\text{KHz}$		1		%
$V_{NO}$	Output Noise Voltage	$V_{IN}=0$ , A CURVE			-110	dB



# Typical Characteristics

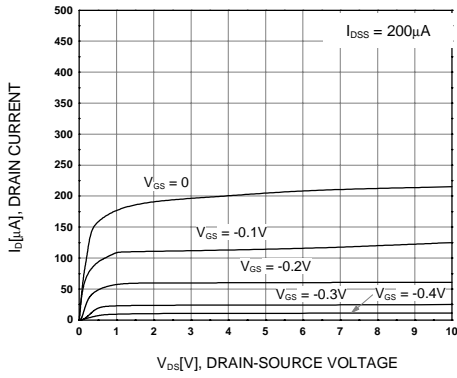


Figure 1.  $I_D$ - $V_{DS}$

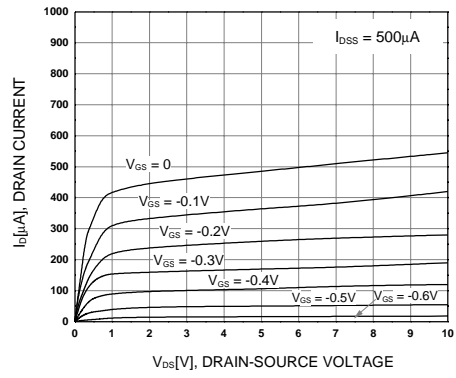


Figure 2.  $I_D$ - $V_{DS}$

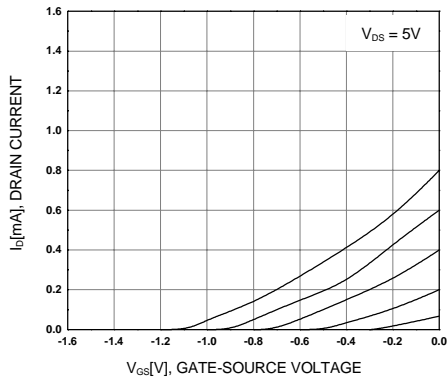


Figure 3.  $I_D$ - $V_{GS}$

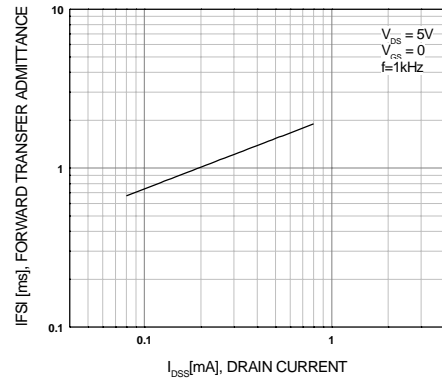


Figure 4.  $|y_{FS}|$ - $I_{DSS}$

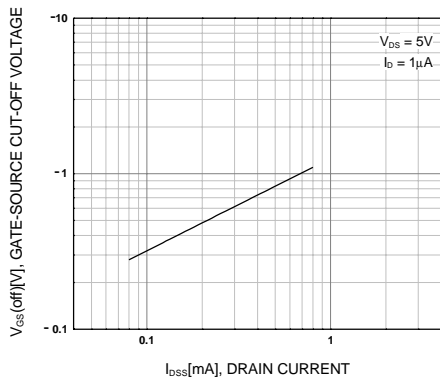


Figure 5.  $V_{GS(off)}$ - $I_{DSS}$

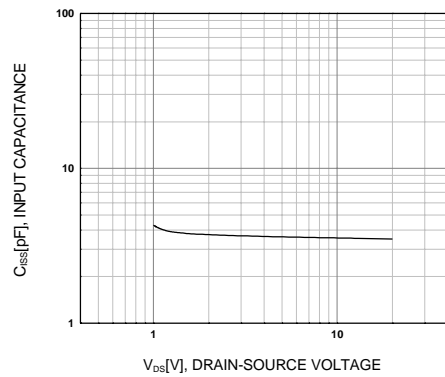


Figure 6.  $C_{iss}$ - $V_{DS}$

# Typical Characteristics (Continued)

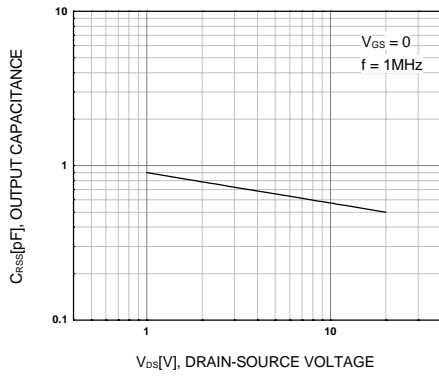


Figure 7.  $C_{RSS}$ - $V_{DS}$

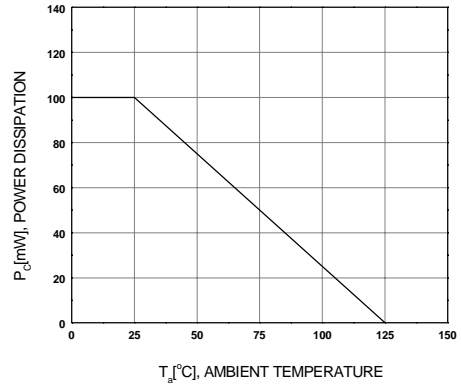


Figure 8.  $P_D$ - $T_A$

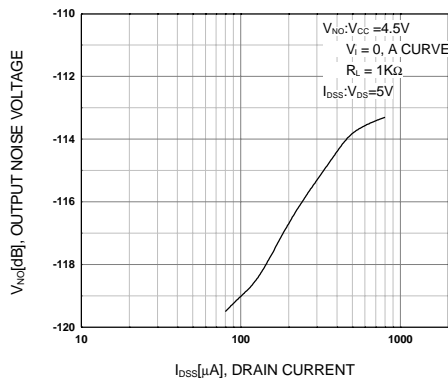


Figure 9.  $V_{NO}$ - $I_{DSS}$

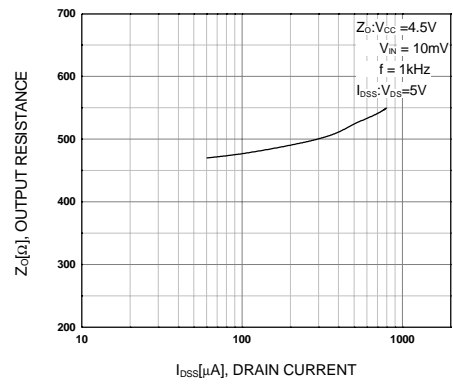


Figure 10.  $Z_O$ - $I_{DSS}$

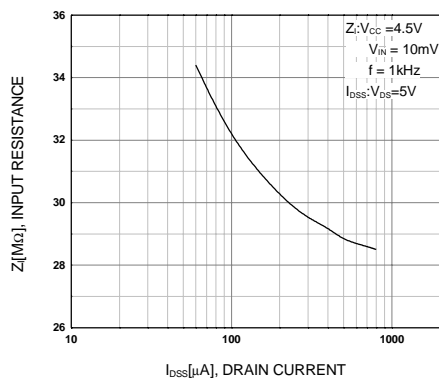


Figure 11.  $Z_I$ - $I_{DSS}$

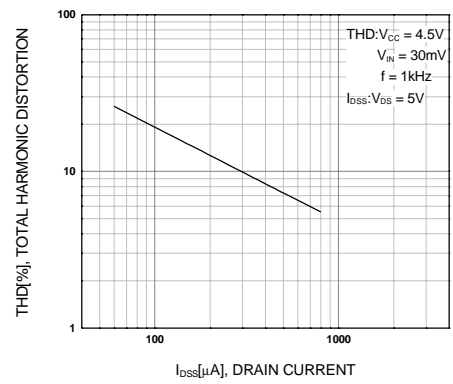


Figure 12.  $\text{THD}$ - $I_{DSS}$

Typical Characteristics (Continued)

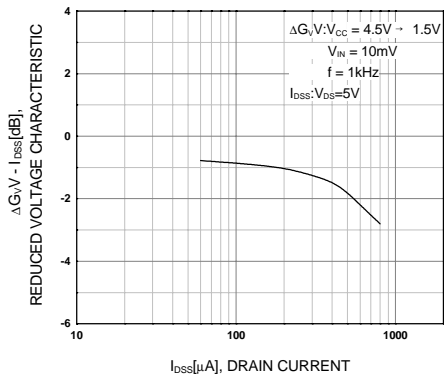


Figure 13.  $\Delta G_V - I_{DSS}$

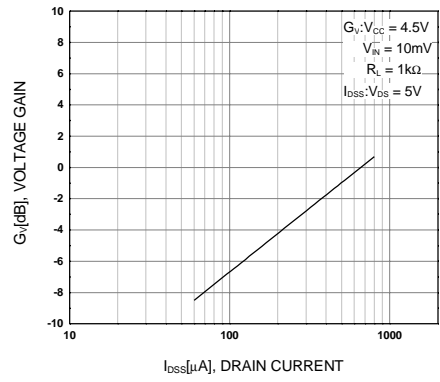


Figure 14.  $G_V - I_{DSS}$

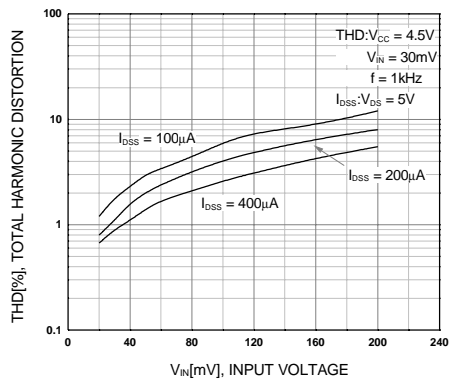
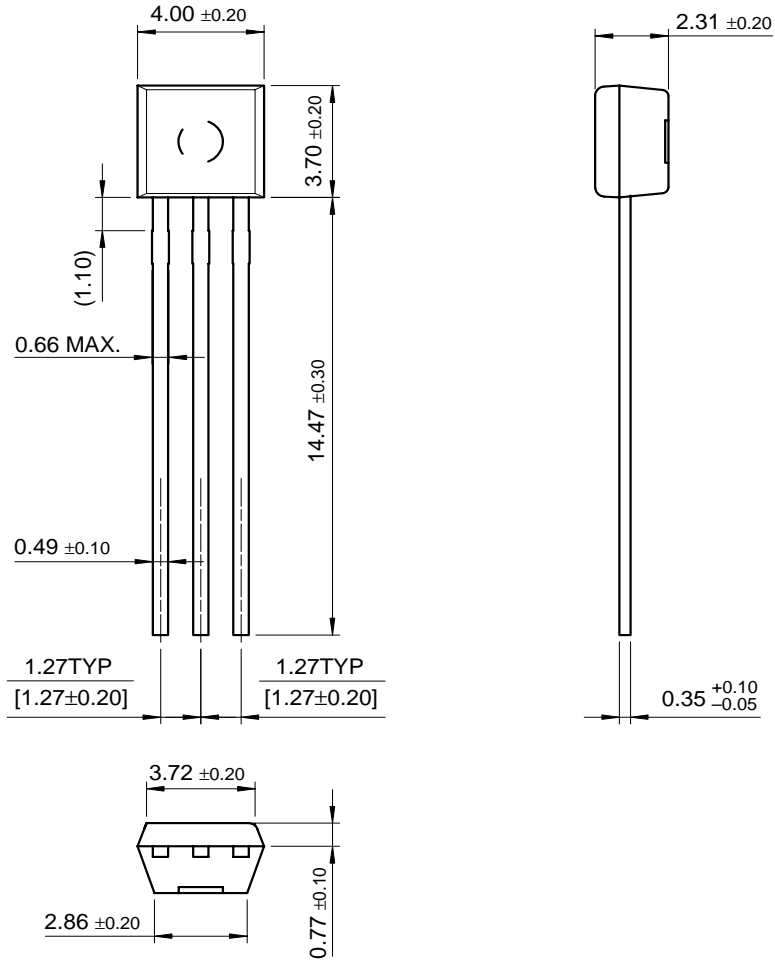


Figure 15.  $THD - V_{IN}$

# Package Dimensions

## TO-92S



Dimensions in Millimeters

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