

# 2SK596S

**JFET**  
**20V, 150 to 350 $\mu$ A, 1.0mS, N-Channel**



**ON Semiconductor®**

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## Features

- Low output noise voltage :  $V_{NO} = -110$ dB max ( $V_{CC} = 4.5$ V,  $R_L = 1k\Omega$ ,  $C_{in} = 15pF$ ,  $V_{IN} = 0$ V, A curve)
- Especially suited for use in condenser microphone for audio equipments and telephones
- Excellent transient characteristic
- Adoption of FBET process

## Specifications

### Absolute Maximum Ratings at $T_a = 25^\circ\text{C}$

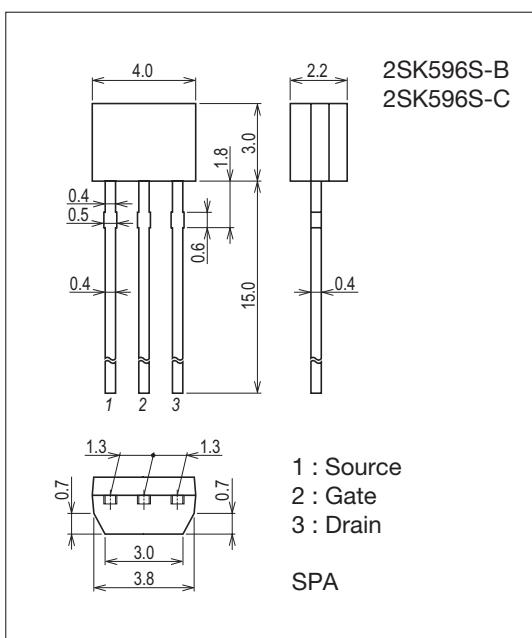
Parameter	Symbol	Conditions	Ratings	Unit
Gate-to-Drain Voltage	$V_{GDO}$		-20	V
Gate Current	$I_G$		10	$\text{mA}$
Drain Current	$I_D$		1	$\text{mA}$
Allowable Power Dissipation	$P_D$		100	$\text{mW}$
Junction Temperature	$T_j$		150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$		-55 to +150	$^\circ\text{C}$

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

## Package Dimensions

unit : mm (typ)

7524-005



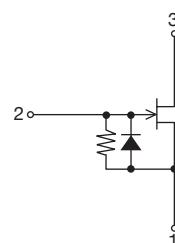
## Product & Package Information

- Package : SPA
- JEITA, JEDEC : SC-72
- Minimum Packing Quantity : 500 pcs./bag

## Marking



## Electrical Connection



## ORDERING INFORMATION

See detailed ordering and shipping information on page 2 of this data sheet.

Electrical Characteristics at  $T_a=25^\circ\text{C}$ 

Parameter	Symbol	Conditions	Ratings			Unit	
			Rank	min	typ		
Gate-to-Drain Breakdown Voltage	$V_{(\text{BR})\text{GDO}}$	$I_G=-100\mu\text{A}$		-20		V	
Cutoff Voltage	$V_{\text{GS}(\text{off})}$	$V_{\text{DS}}=5\text{V}$ , $I_D=1\mu\text{A}$			-0.5	-1.0	V
Drain Current	$I_{\text{DSS}}^*$	$V_{\text{DS}}=5\text{V}$ , $V_{\text{GS}}=0\text{V}$	B	150		240	$\mu\text{A}$
			C	210		350	
Forward Transfer Admittance	$ y_{\text{fs}} $	$V_{\text{DS}}=5\text{V}$ , $V_{\text{GS}}=0\text{V}$ , $f=1\text{kHz}$		0.4	1.0		mS
Input Capacitance	$C_{\text{iss}}$	$V_{\text{DS}}=5\text{V}$ , $V_{\text{GS}}=0\text{V}$ , $f=1\text{MHz}$			4.1		pF
Reverse Transfer Capacitance	$C_{\text{rss}}$	$V_{\text{DS}}=5\text{V}$ , $V_{\text{GS}}=0\text{V}$ , $f=1\text{MHz}$			0.88		pF
[ $T_a=25^\circ\text{C}$ , $V_{\text{CC}}=4.5\text{V}$ , $R_L=1\text{k}\Omega$ , $C_{\text{in}}=15\text{pF}$ , See specified Test Circuit.]							
Voltage Gain	$G_V$	$V_{\text{IN}}=10\text{mV}$ , $f=1\text{kHz}$			-3.0		dB
Reduced Voltage Characteristic	$\Delta G_{VV}$	$V_{\text{IN}}=10\text{mV}$ , $f=1\text{kHz}$ , $V_{\text{CC}}=4.5\text{V} \rightarrow 1.5\text{V}$			-1.0	-3.5	dB
Frequency Characteristic	$\Delta G_{\text{f}}$	$f=1\text{kHz} \rightarrow 110\text{Hz}$				-1.0	dB
Total Harmonic Distortion	THD	$V_{\text{IN}}=30\text{mV}$ , $f=1\text{kHz}$			1.2		%
Output Noise Voltage	$V_{\text{NO}}$	$V_{\text{IN}}=0\text{V}$ , A curve				-110	dB

\* : The 2SK596S is classified by  $I_{\text{DSS}}$  as follows : (unit :  $\mu\text{A}$ )

Rank	B	C
$I_{\text{DSS}}$	150 to 240	210 to 350

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

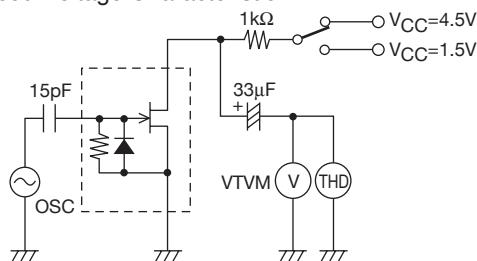
## Test Circuit

Voltage Gain

Frequency Characteristic

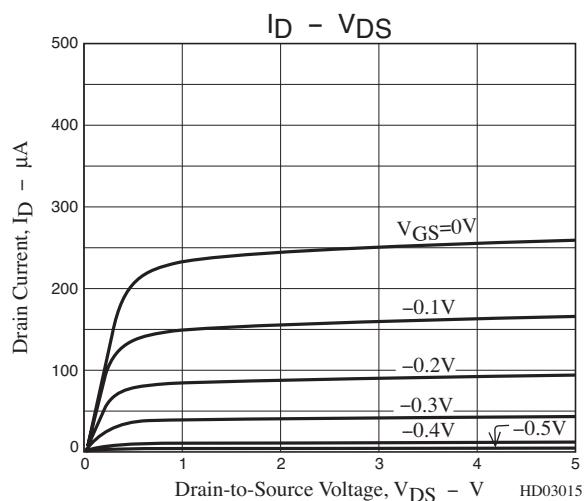
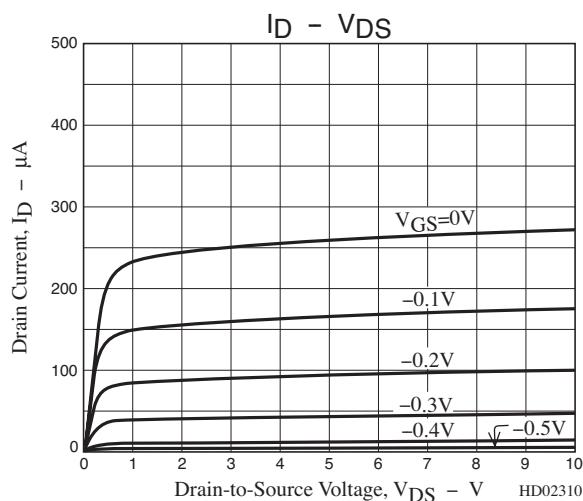
Harmonic Distortion

Reduced Voltage Characteristic

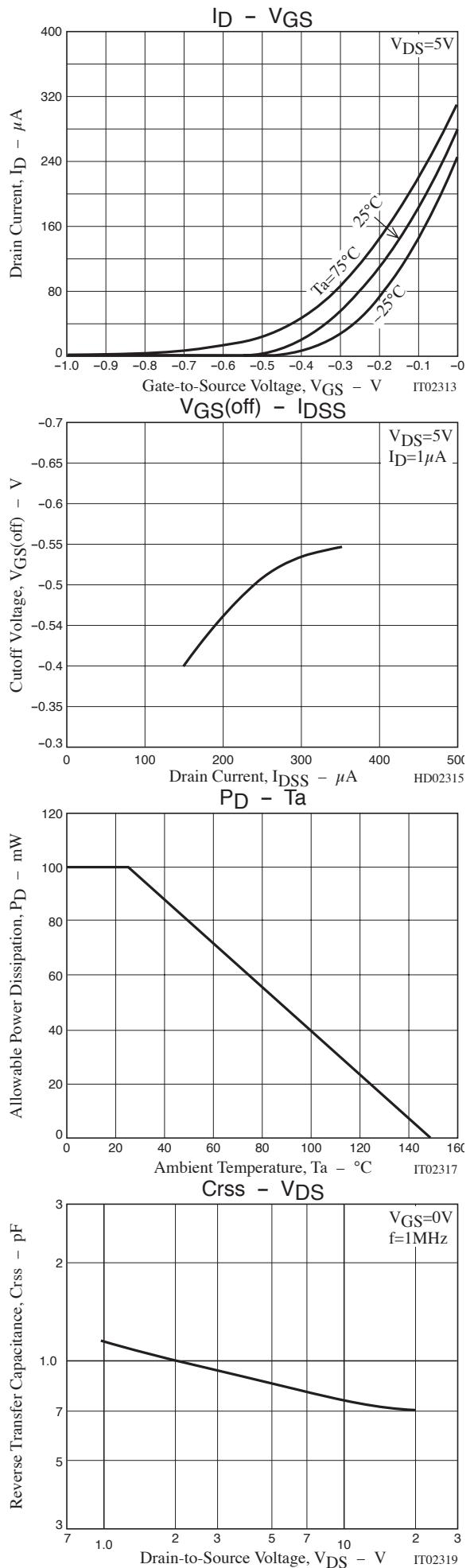
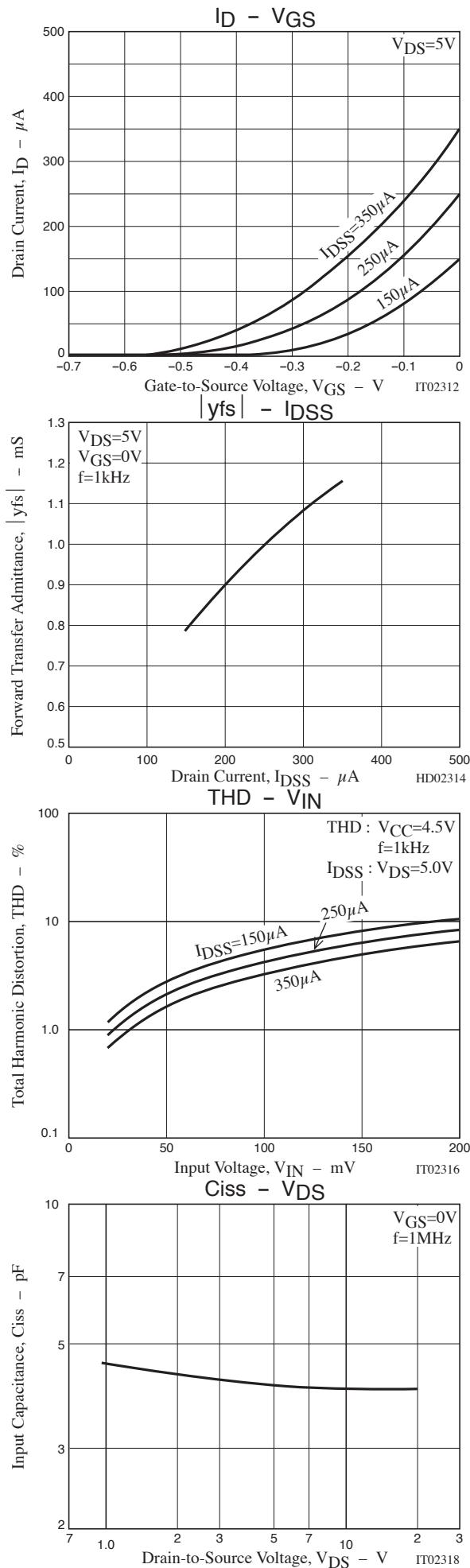


## ORDERING INFORMATION

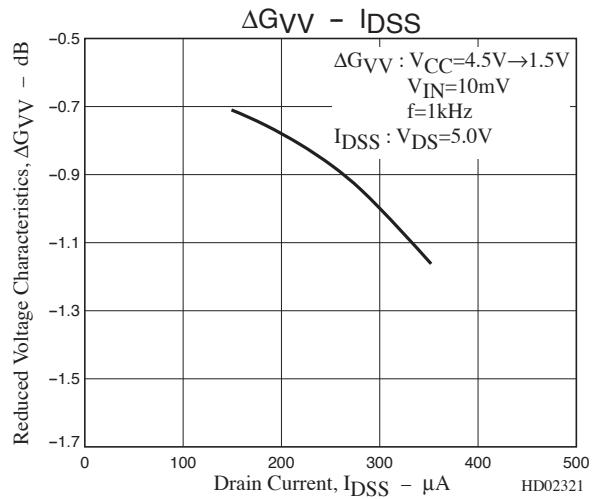
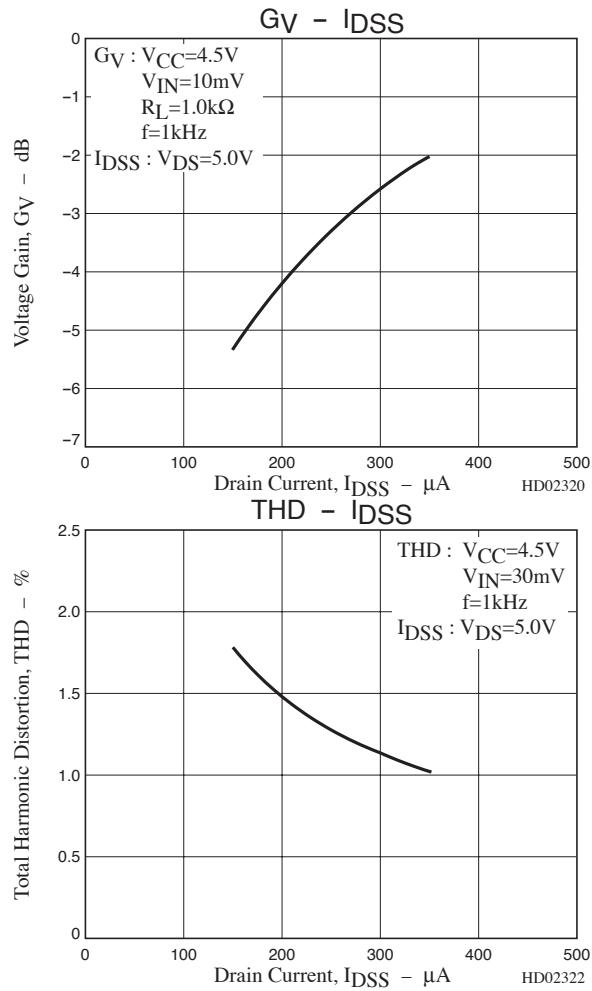
Device	Package	Shipping	memo
2SK596S-B	SPA	500pcs./bag	
2SK596S-C	SPA	500pcs./bag	Pb-Free



# 2SK596S

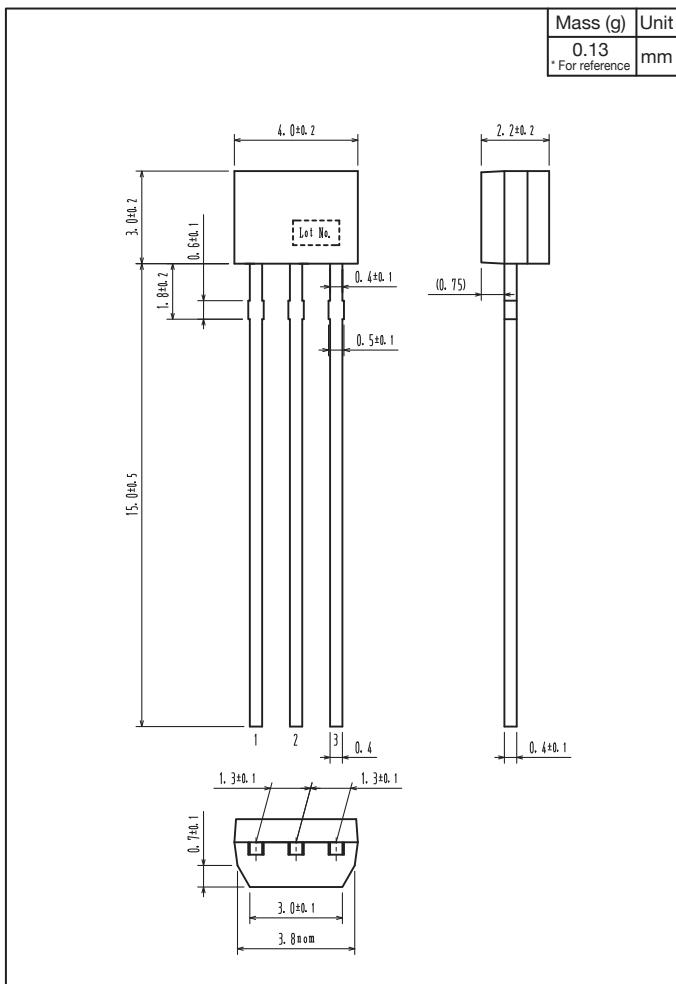


# 2SK596S



**Outline Drawing**

2SK596S-B, 2SK596S-C



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