



SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

N-channel Silicon Junction FET

2SK596S — Electret Condenser Microphone Applications

Features

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

Specifications

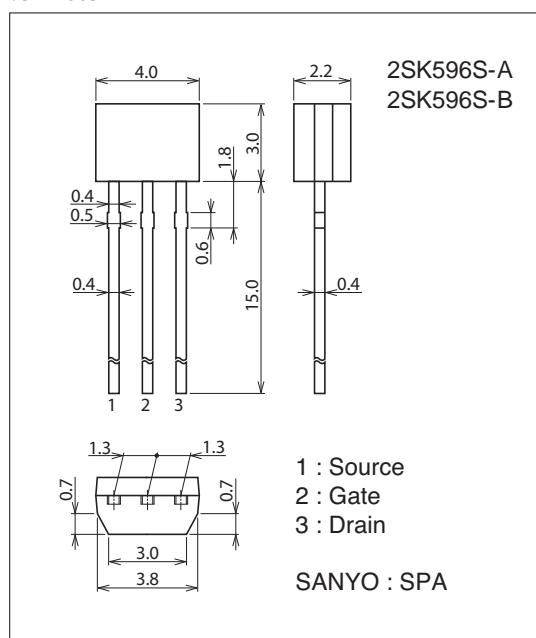
Absolute Maximum Ratings at $T_a = 25^\circ\text{C}$

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

Package Dimensions

unit : mm (typ)

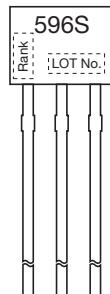
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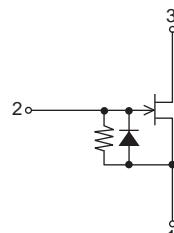
Product & Package Information

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

Marking



Electrical Connection



Electrical Characteristics at $T_a=25^\circ C$

Parameter	Symbol	Conditions	Ratings				Unit
			Rank	min	typ	max	
Gate-to-Drain Breakdown Voltage	$V(BR)GDO$	$I_G=-100\mu A$		-20			V
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=5V, I_D=1\mu A$			-0.4	-1.5	V
Drain Current	I_{DSS}^*	$V_{DS}=5V, V_{GS}=0V$	A	100		170	μA
			B	150		240	
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=5V, V_{GS}=0V, f=1kHz$		0.4	0.8		mS
Input Capacitance	C_{iss}	$V_{DS}=5V, V_{GS}=0V, f=1MHz$			4.1		pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS}=5V, V_{GS}=0V, f=1MHz$			0.88		pF
[$T_a=25^\circ C, V_{CC}=4.5V, R_L=1k\Omega, C_{in}=15pF$, See specified Test Circuit.]							
Voltage Gain	G_V	$V_{IN}=10mV, f=1kHz$	A		-5.0		dB
			B		-3.8		
Reduced Voltage Characteristic	ΔG_{VV}	$V_{IN}=10mV, f=1kHz, V_{CC}=4.5V \rightarrow 1.5V$	A		-0.84	-1.8	dB
			B		-0.90	-2.0	
Frequency Characteristic	ΔG_{vf}	$f=1kHz \rightarrow 110Hz$				-1.0	dB
Total Harmonic Distortion	THD	$V_{IN}=30mV, f=1kHz$	A		2.0		%
			B		1.6		
Output Noise Voltage	V_{NO}	$V_{IN}=0V, A$ curve				-110	dB

* : The 2SK596S is classified by I_{DSS} as follows : (unit : μA)

Rank	A	B
I_{DSS}	100 to 170	150 to 240

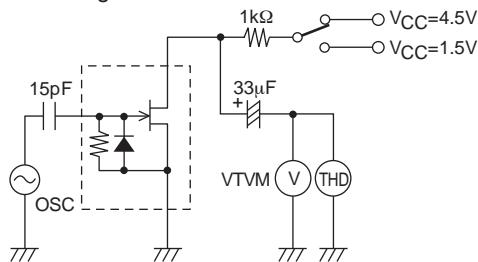
Test Circuit

Voltage Gain

Frequency Characteristic

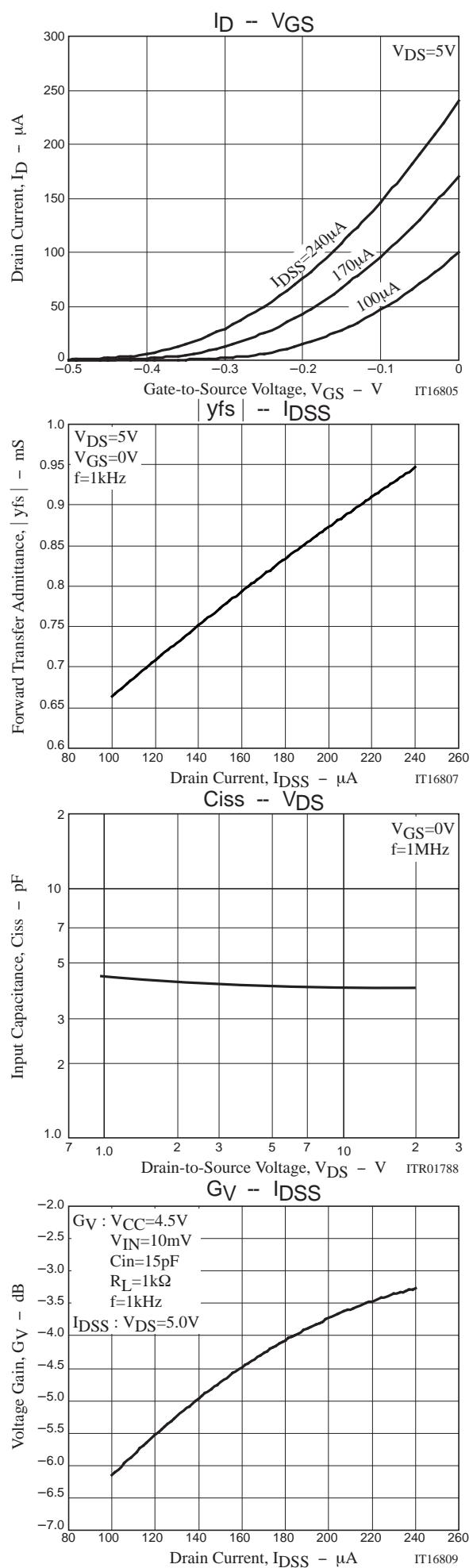
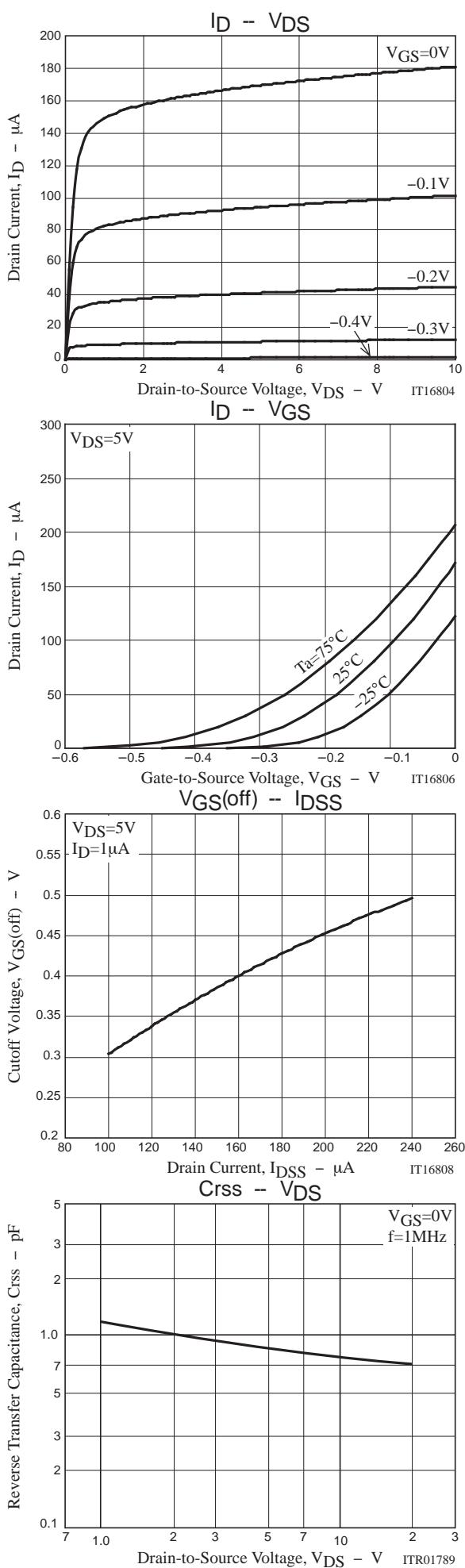
Harmonic Distortion

Reduced Voltage Characteristic

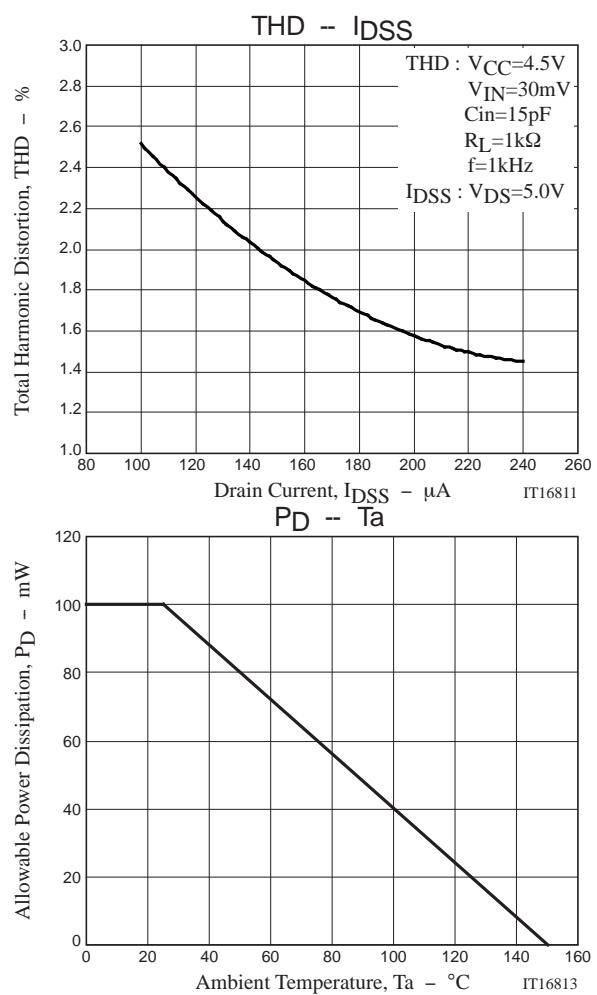
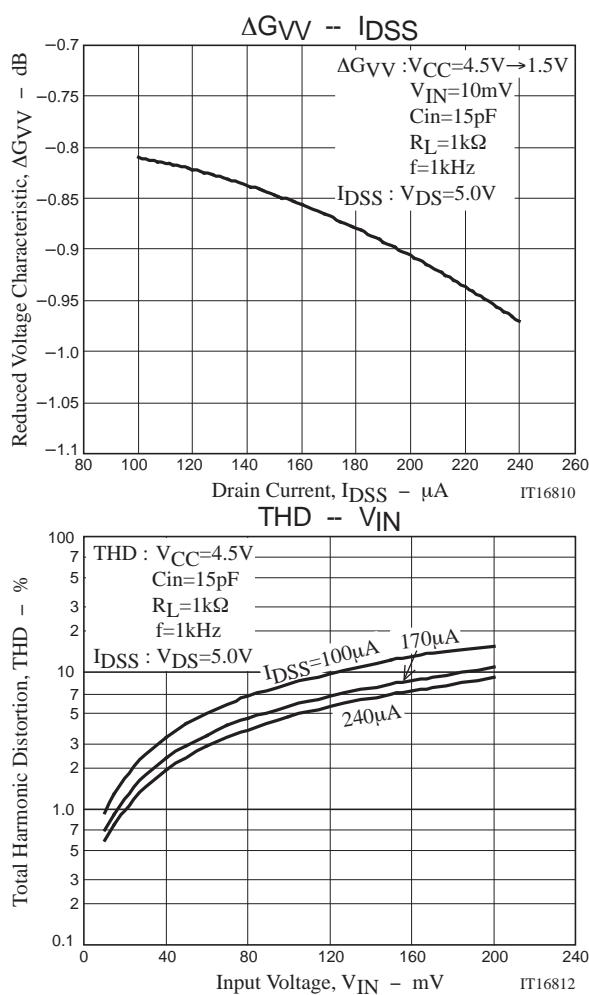
**Ordering Information**

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

2SK596S



2SK596S

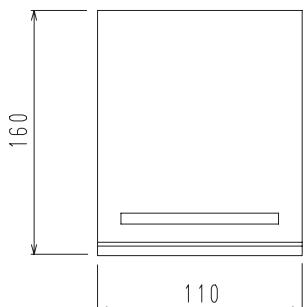
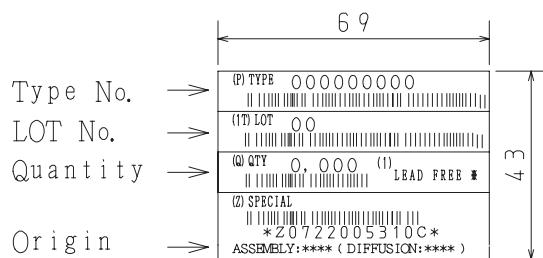


Bag Packing Specification

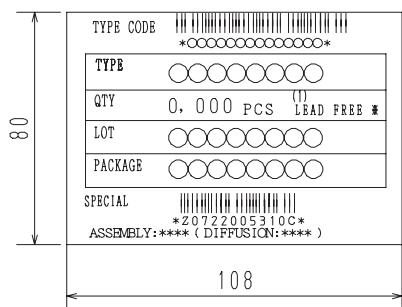
2SK596S-A, 2SK596S-B

1. Packing Format

Package Name	Maximum Number of devices contained (pcs)				
	Bag	Inner BOX		Outer BOX	
SPA	500	B-1	B-1/2	A-1	
		20,000	10,000	100,000	
Packing format (Dimensions:mm (external))					
Inner BOX		Outer BOX			
B-1		A-1	A-2		
445×225×55		445×225×55	470×250×300	470×250×190	

2. Bag dimensions
(unit:mm)3. Bag label, Inner box label
(unit:mm)4. Outer box label
(unit:mm)

It is a label at the time of factory shipments.
 The form of a label may change in physical distribution process.



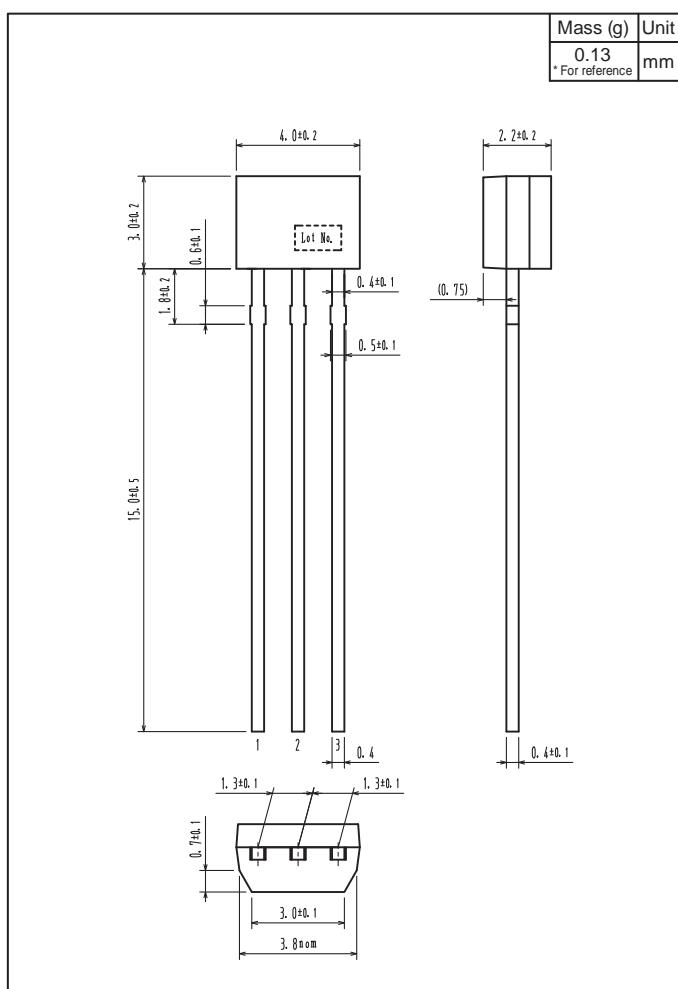
NOTE (1)

The LEAD FREE * description shows that the surface treatment of the terminal is lead free.

Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

Outline Drawing

2SK596S-A, 2SK596S-B



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