



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

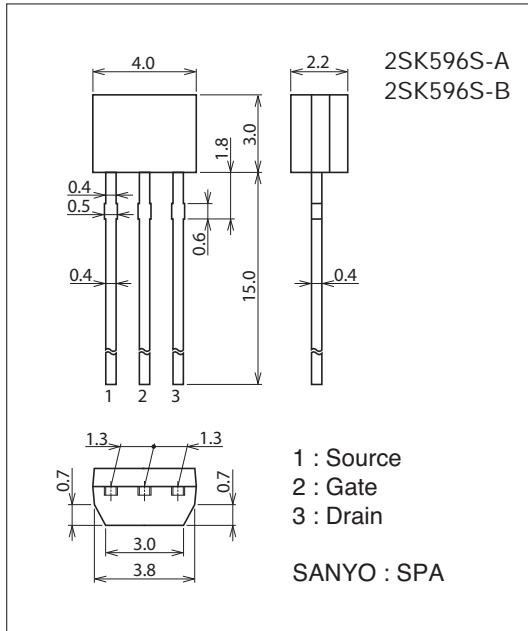
Absolute Maximum Ratings at $T_a = 25^\circ\text{C}$

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)

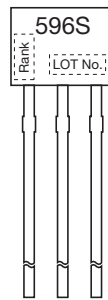
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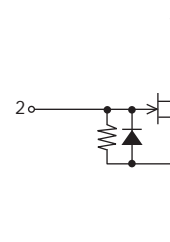
Product & Package Information

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

Marking



Electrical Connection



2SK596S

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit	
			Rank	min	typ		max
Gate-to-Drain Breakdown Voltage	V(BR)GDO	IG=-100μA		-20		V	
Cutoff Voltage	VGS(off)	VDS=5V, ID=1μA			-0.4	-1.5	V
Drain Current	IDSS*	VDS=5V, VGS=0V	A	100		170	μA
			B	150		240	
Forward Transfer Admittance	yfs	VDS=5V, VGS=0V, f=1kHz		0.4	0.8	mS	
Input Capacitance	Ciss	VDS=5V, VGS=0V, f=1MHz			4.1	pF	
Reverse Transfer Capacitance	Crss	VDS=5V, VGS=0V, f=1MHz			0.88	pF	
[Ta=25°C, VCC=4.5V, RL=1kΩ, Cin=15pF, See specified Test Circuit.]							
Voltage Gain	GV	VIN=10mV, f=1kHz	A		-5.0		dB
			B		-3.8		
Reduced Voltage Characteristic	ΔGVV	VIN=10mV, f=1kHz, VCC=4.5V → 1.5V	A		-0.84	-1.8	dB
			B		-0.90	-2.0	
Frequency Characteristic	ΔGvf	f=1kHz → 110Hz				-1.0	dB
Total Harmonic Distortion	THD	VIN=30mV, f=1kHz	A		2.0		%
			B		1.6		
Output Noise Voltage	VNO	VIN=0V, A curve				-110	dB

* : The 2SK596S is classified by IDSS as follows : (unit : μA)

Rank	A	B
IDSS	100 to 170	150 to 240

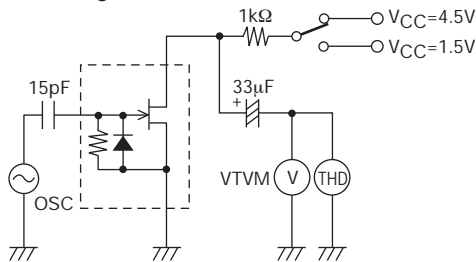
Test Circuit

Voltage Gain

Frequency Characteristic

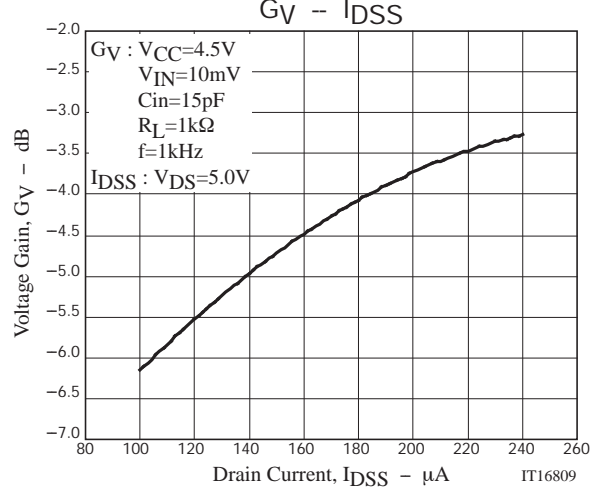
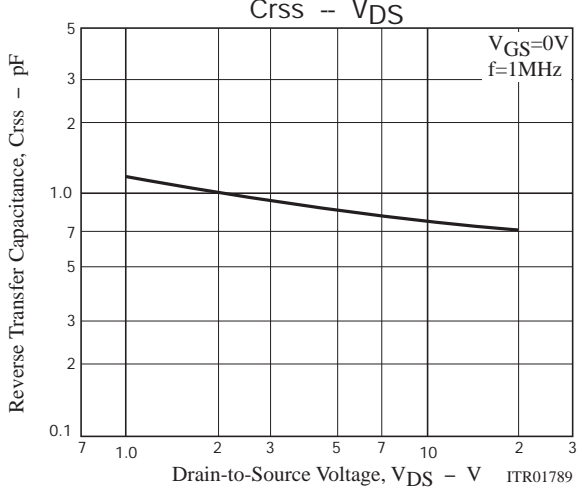
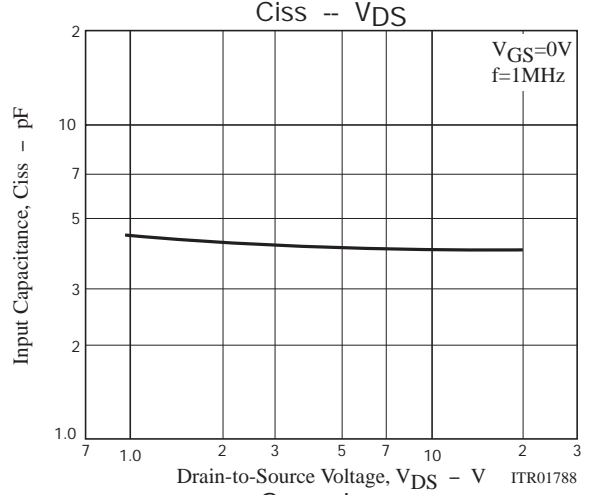
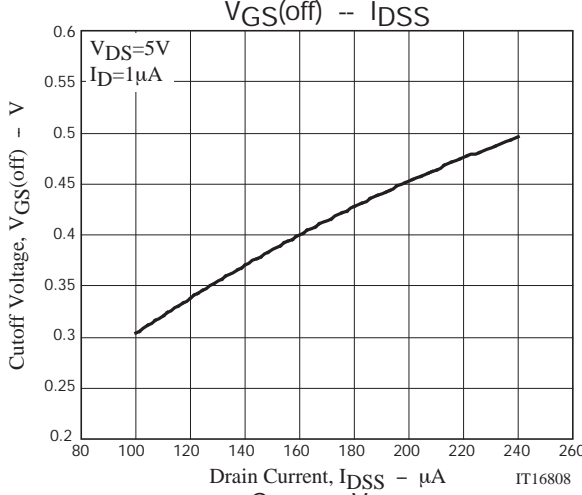
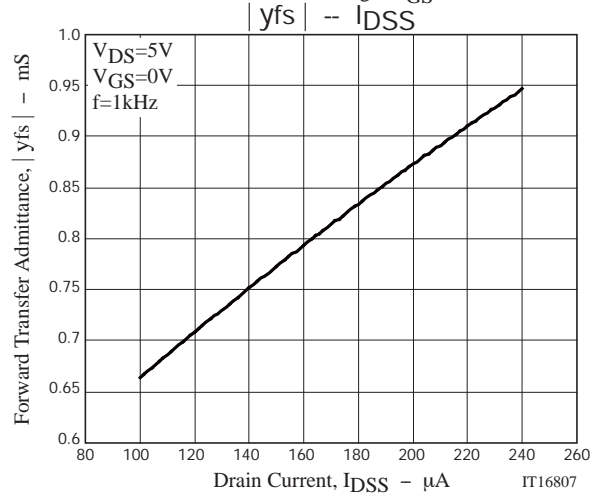
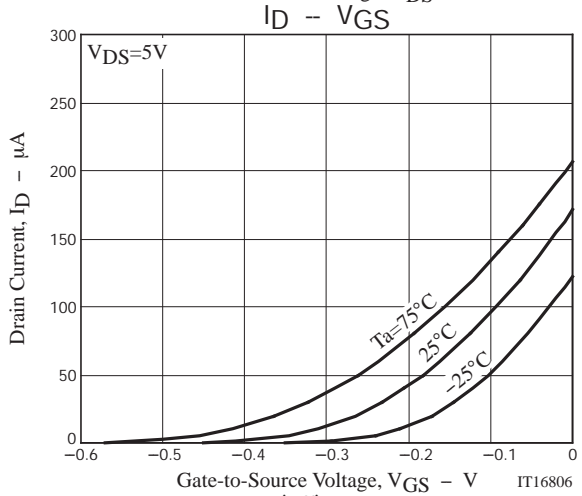
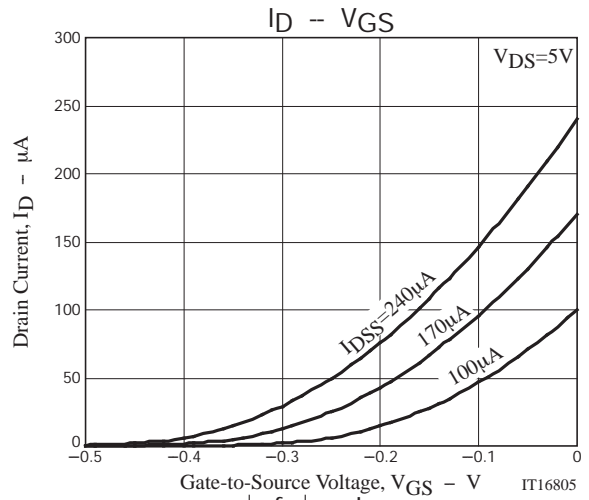
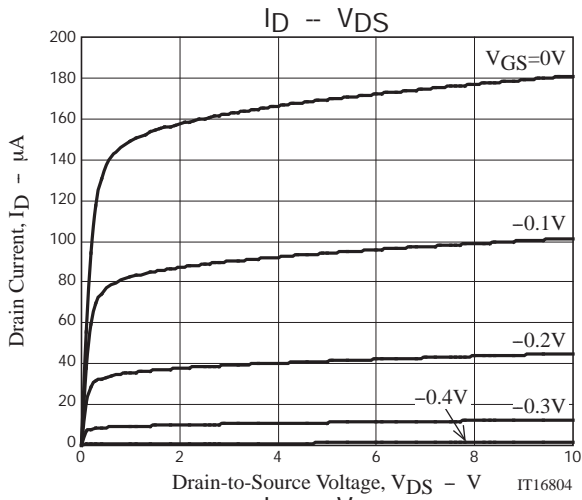
Harmonic Distortion

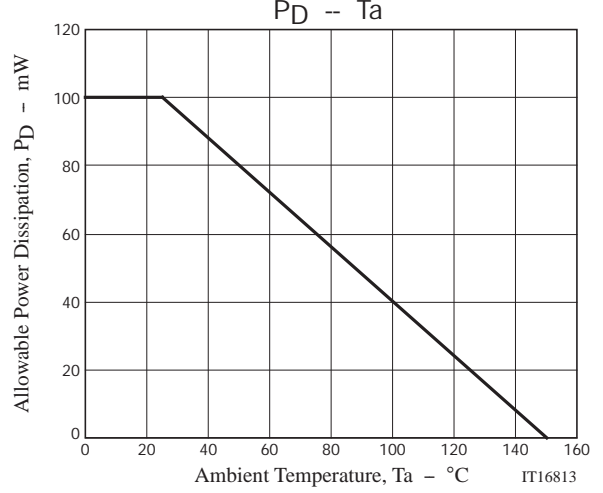
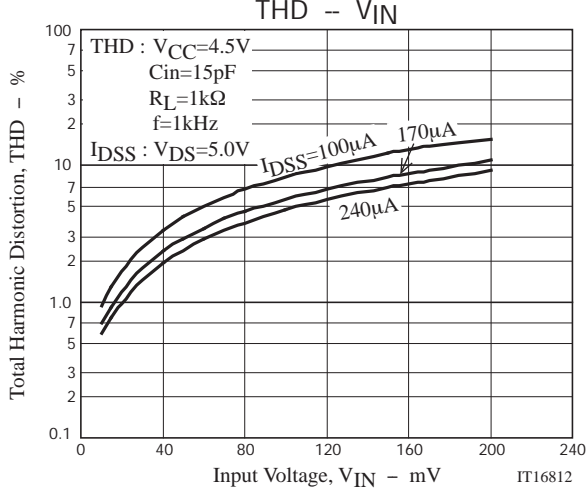
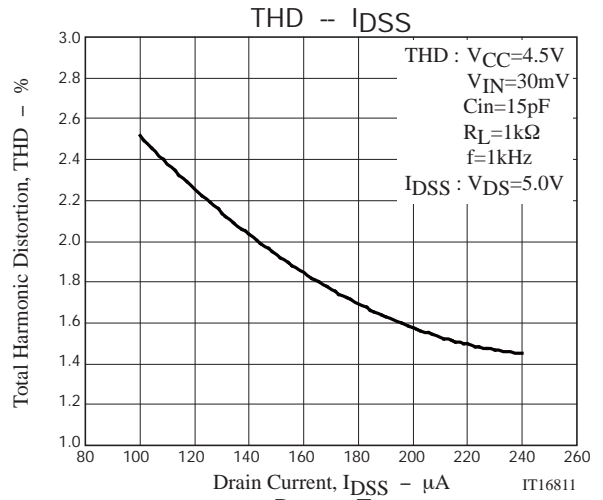
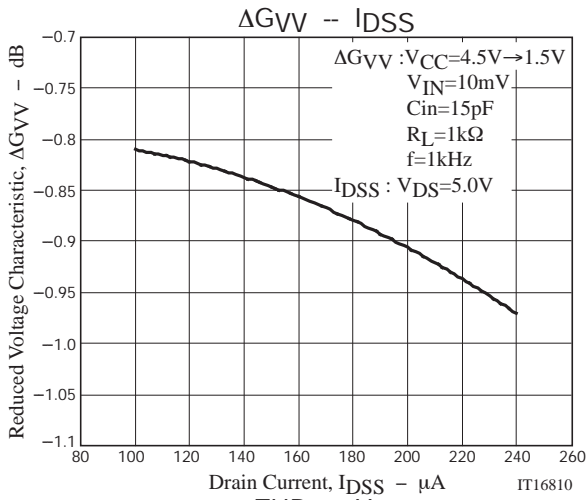
Reduced Voltage Characteristic



Ordering Information

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





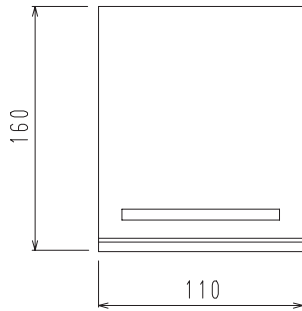
Bag Packing Specification

2SK596S-A, 2SK596S-B

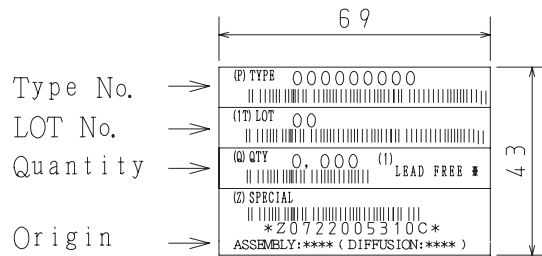
1. Packing Format

Package Name	Maximum Number of devices contained (pcs)				
	Bag	Inner BOX		Outer BOX	
SPA	500	B-1	B-1/2	A-1	A-2
		20,000	10,000	100,000	60,000
Packing format (Dimensions:mm (external))					
		Inner BOX		Outer BOX	
		B-1	B-1/2	A-1	A-2
		445×225×55	445×225×55	470×250×300	470×250×190

2. Bag dimensions
(unit:mm)

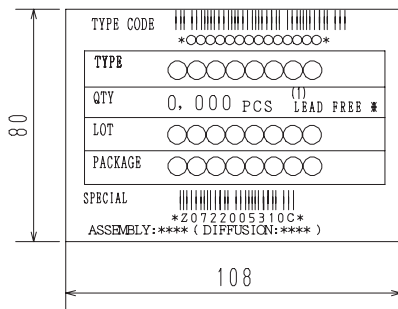


3. Bag label, Inner box label
(unit:mm)



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)

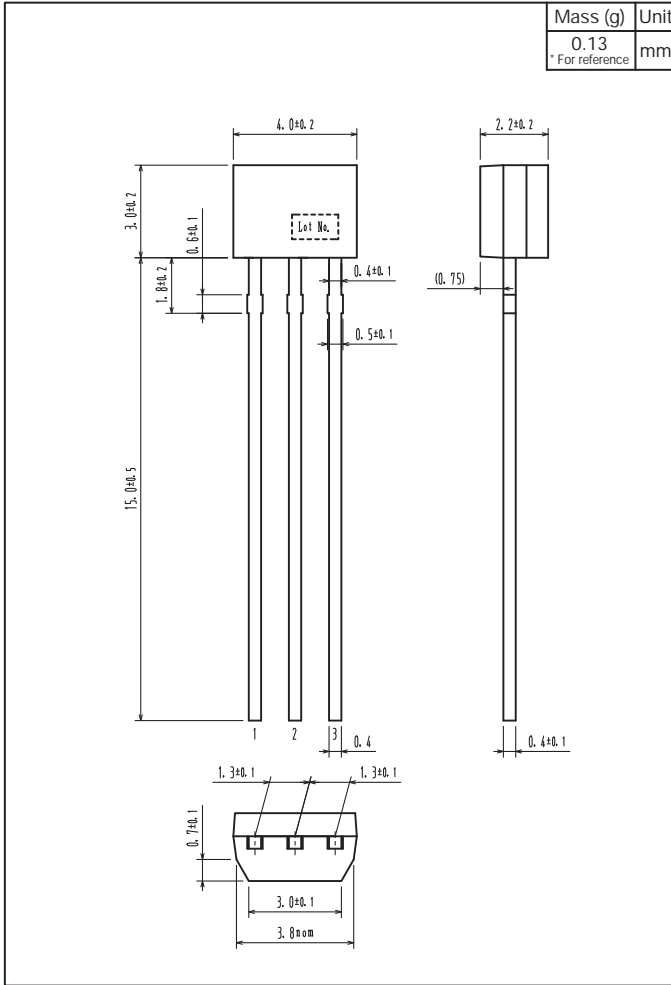
The LEAD FREE * description shows that the surface treatment of the terminal is lead free.

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

2SK596S

Outline Drawing

2SK596S-A, 2SK596S-B



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