

2SK596S



ON Semiconductor®

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JFET

20V, 150 to 350 μ A, 1.0mS, N-Channel

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 $T_a = 25^\circ\text{C}$

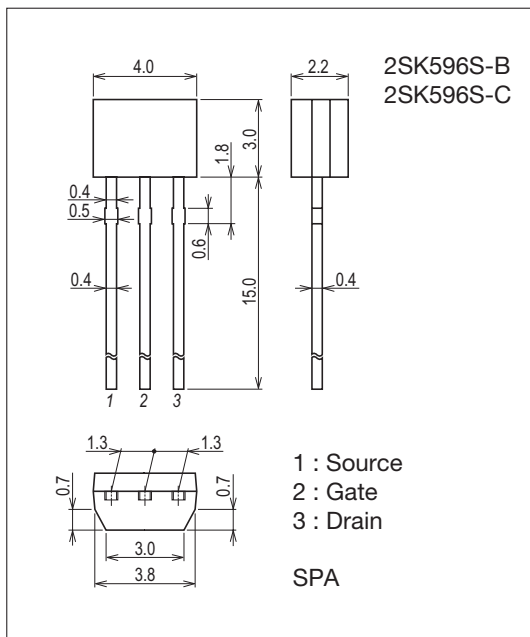
| Parameter | Symbol | Conditions | Ratings | Unit |
|-----------------------------|-----------|------------|-------------|------------------|
| Gate-to-Drain Voltage | V_{GDO} | | -20 | V |
| Gate Current | I_G | | 10 | mA |
| Drain Current | I_D | | 1 | mA |
| Allowable Power Dissipation | P_D | |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

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)

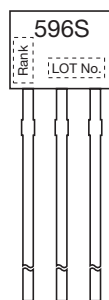
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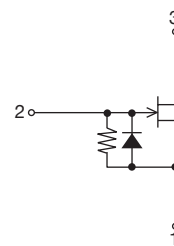
Product & Package Information

- 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.

2SK596S

Electrical Characteristics at Ta=25°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 | $V_{GS(off)}$ | $V_{DS} = 5V, I_D = 1\mu A$ | | | -0.5 | -1.0 | V |
| Drain Current | I_{DSS}^* | $V_{DS} = 5V, V_{GS} = 0V$ | B | 150 | | 240 | μA |
| | | | C | 210 | | 350 | |
| Forward Transfer Admittance | $ y_{fs} $ | $V_{DS} = 5V, V_{GS} = 0V, f = 1kHz$ | | 0.4 | 1.0 | | 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 |
| [Ta=25°C, VCC=4.5V, RL=1kΩ, Cin=15pF, See specified Test Circuit.] | | | | | | | |
| Voltage Gain | G_V | $V_{IN} = 10mV, f = 1kHz$ | | | -3.0 | | dB |
| Reduced Voltage Characteristic | ΔG_{VV} | $V_{IN} = 10mV, f = 1kHz, V_{CC} = 4.5V \rightarrow 1.5V$ | | | -1.0 | -3.5 | dB |
| Frequency Characteristic | ΔG_{vf} | $f = 1kHz \rightarrow 110Hz$ | | | | -1.0 | dB |
| Total Harmonic Distortion | THD | $V_{IN} = 30mV, f = 1kHz$ | | | 1.2 | | % |
| Output Noise Voltage | V_{NO} | $V_{IN} = 0V, A \text{ curve}$ | | | | -110 | dB |

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

| Rank | B | C |
|-----------|------------|------------|
| I_{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.

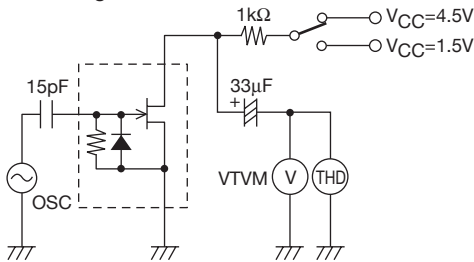
Test Circuit

Voltage Gain

Frequency Characteristic

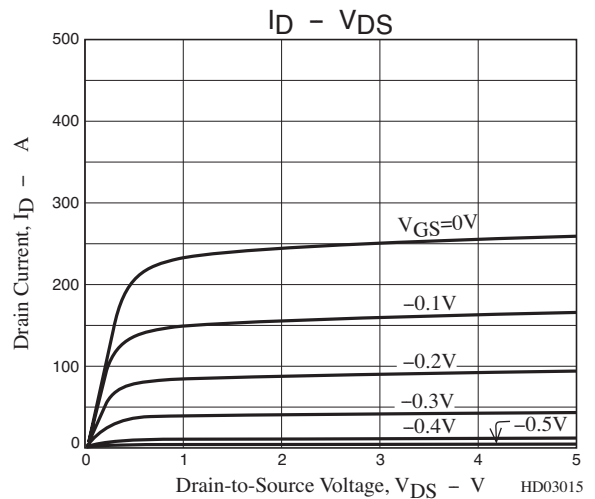
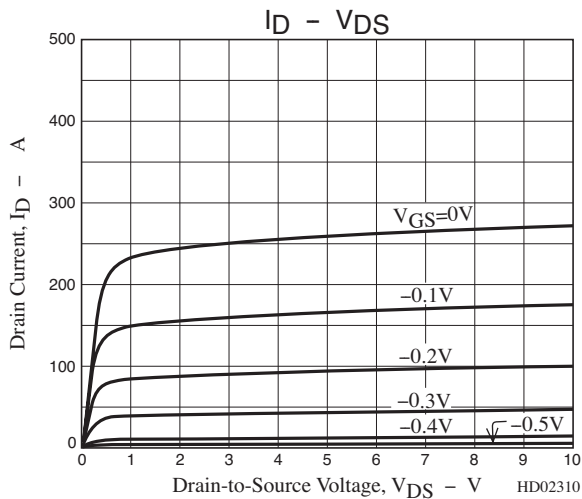
Harmonic Distortion

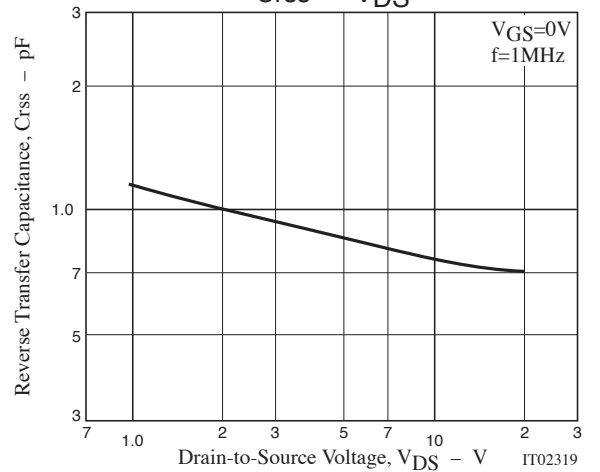
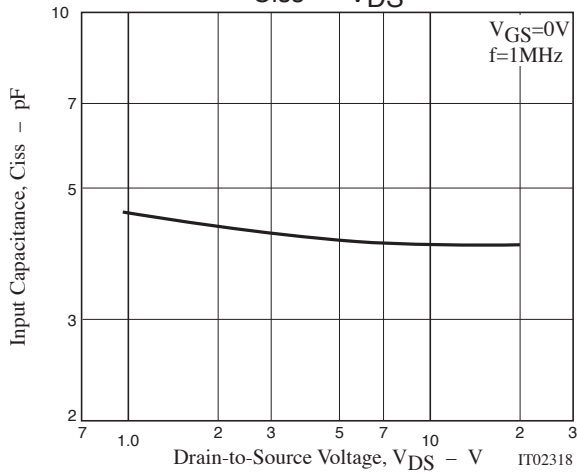
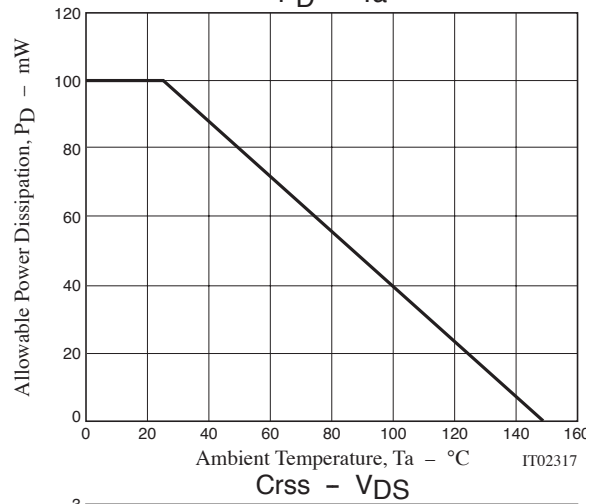
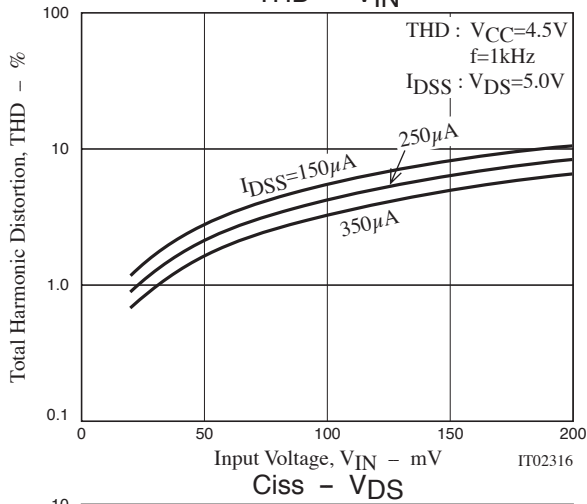
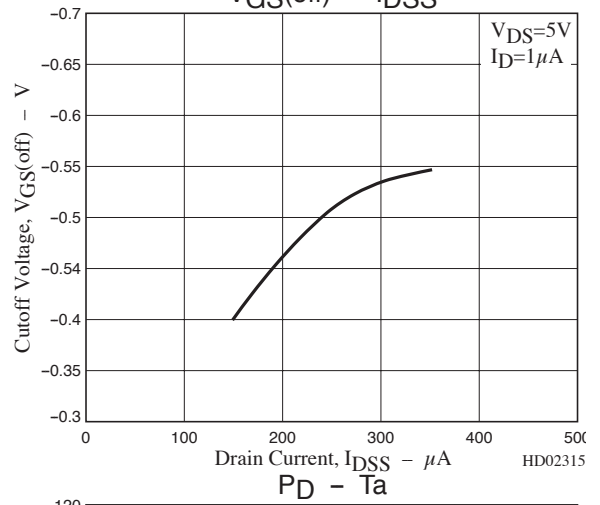
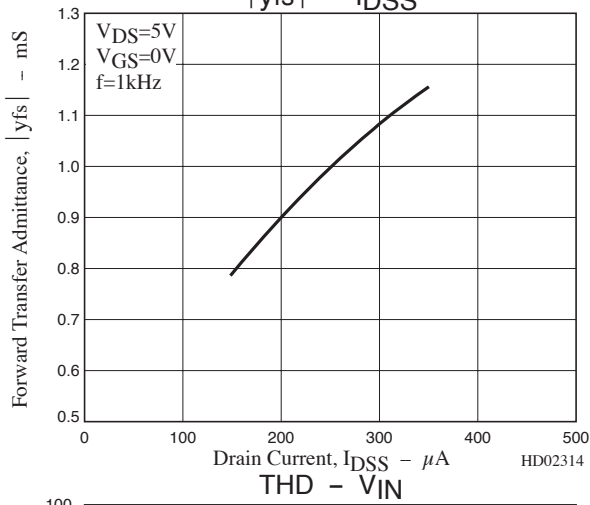
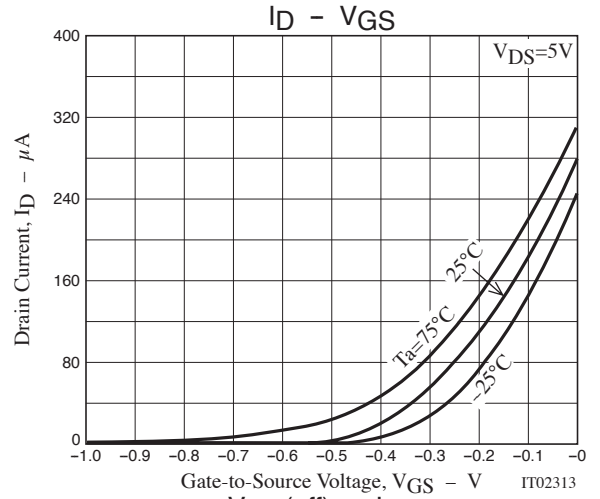
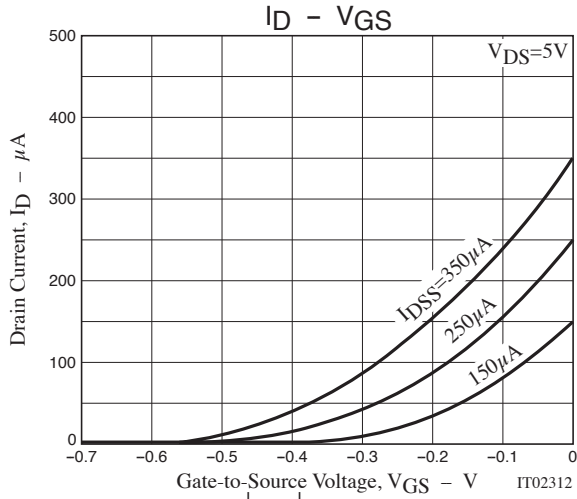
Reduced Voltage Characteristic



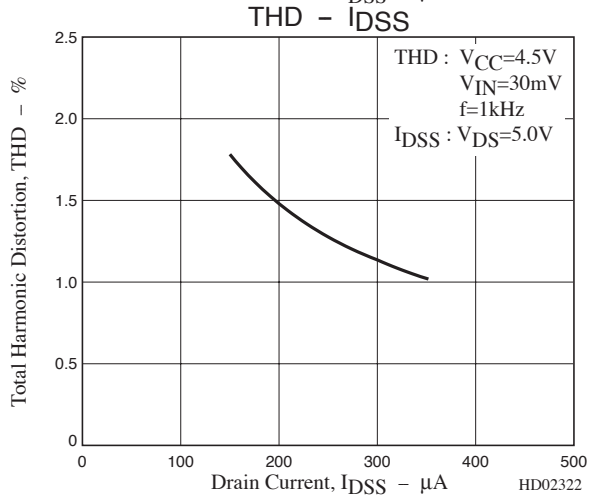
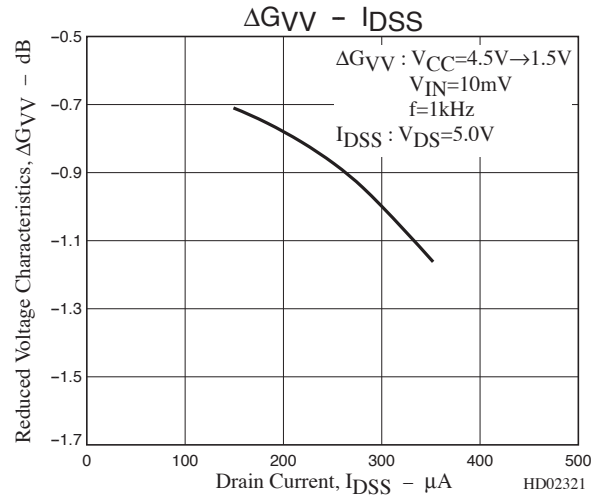
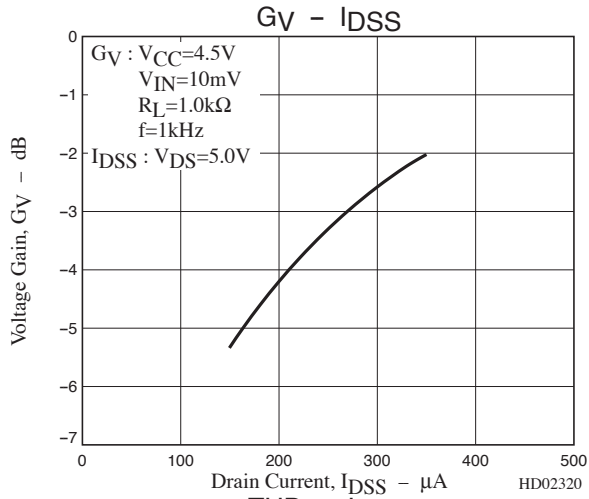
ORDERING INFORMATION

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



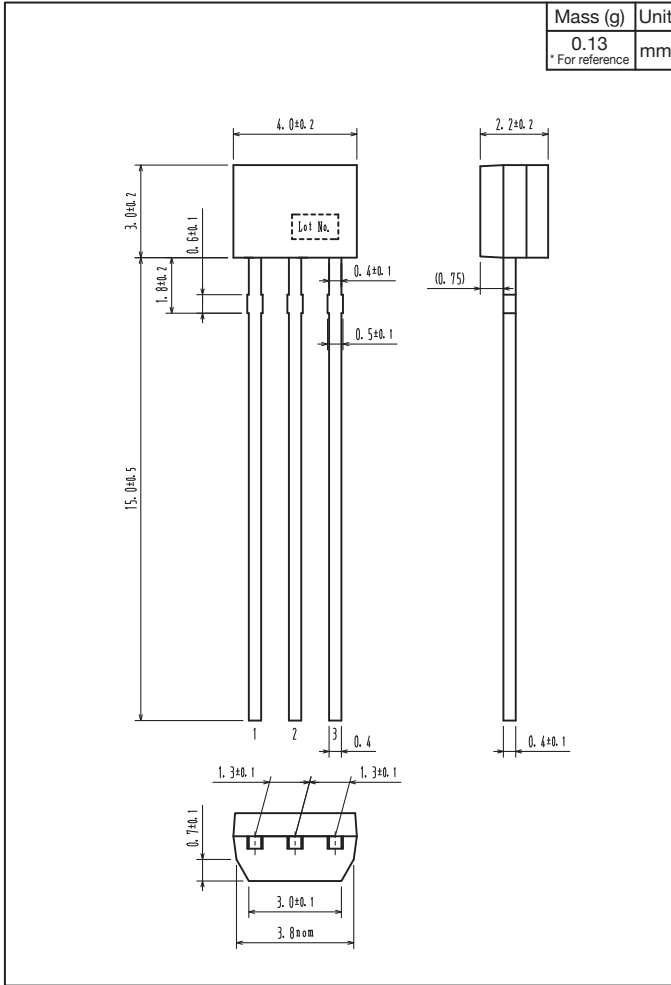


2SK596S



Outline Drawing

2SK596S-B, 2SK596S-C



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