

**Description**

- Capacitor Microphone application

**Features**

- Especially suited for use in audio, telephone capacitor microphones
- Excellent voltage characteristic
- Excellent transient characteristic

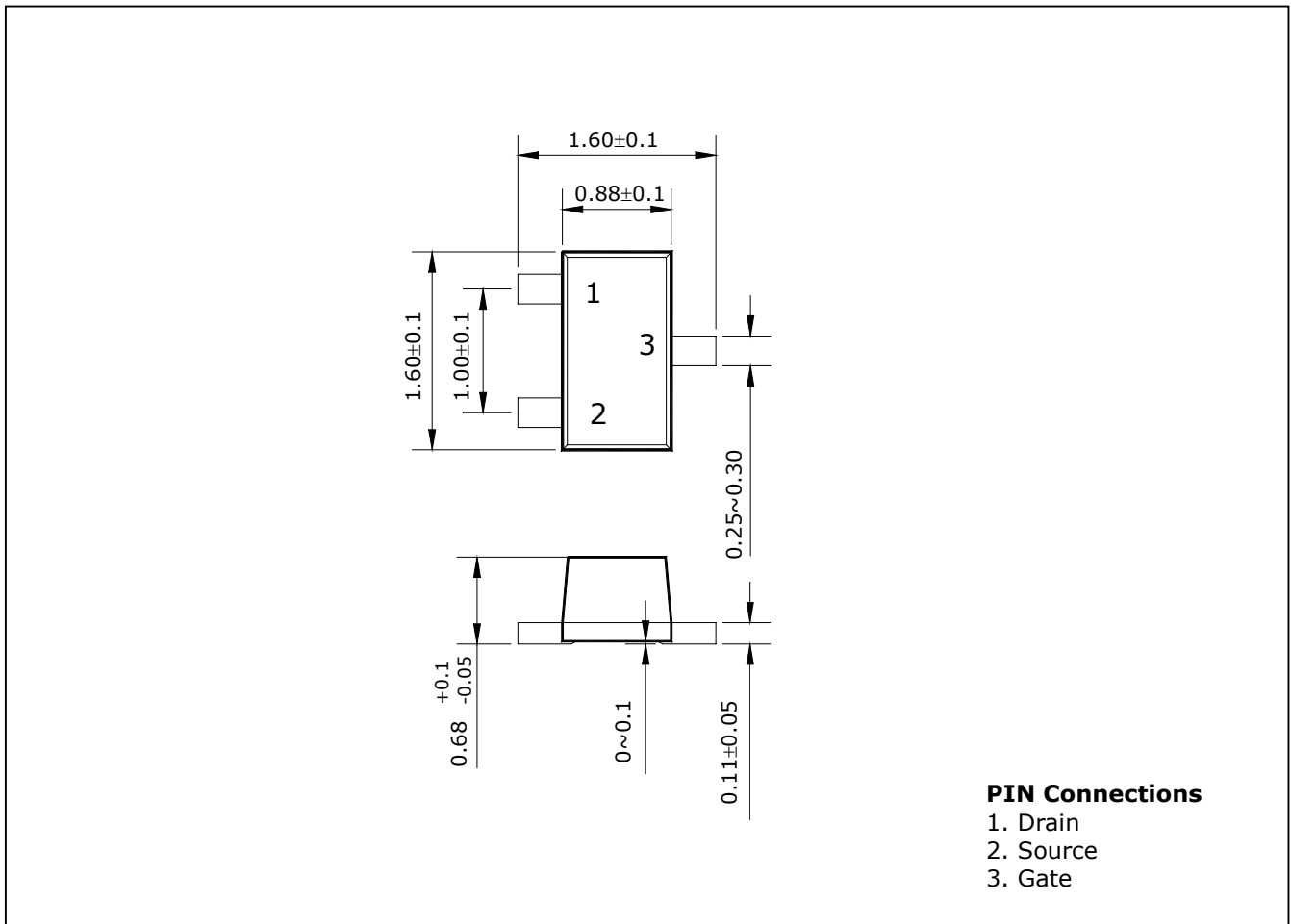
**Ordering Information**

| Type NO. | Marking | Package Code |
|----------|---------|--------------|
| STK596EF | J□      | SOT-523F     |

□: I<sub>DSS</sub> Rank

**Outline Dimensions**

unit : mm



## Absolute maximum ratings

(Ta=25°C)

| Characteristic            | Symbol    | Rating  | Unit |
|---------------------------|-----------|---------|------|
| Gate-Drain voltage        | $V_{GDO}$ | -20     | V    |
| Gate Current              | $I_G$     | 10      | mA   |
| Drain Current             | $I_D$     | 1       | mA   |
| Power dissipation         | $P_D$     | 100     | mW   |
| Junction Temperature      | $T_J$     | 150     | °C   |
| Storage Temperature range | $T_{stg}$ | -55~150 | °C   |

## Electrical Characteristics

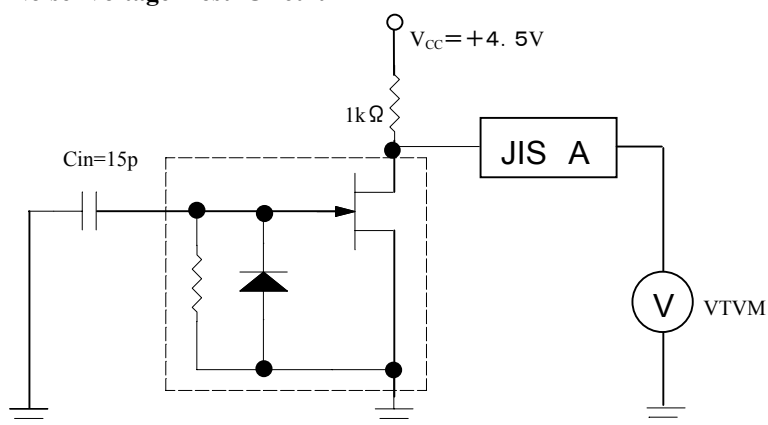
(Ta=25°C)

| Characteristic               | Symbol        | Test Condition                      | Min. | Typ. | Max.   | Unit    |
|------------------------------|---------------|-------------------------------------|------|------|--------|---------|
| Gate-drain breakdown voltage | $V_{(BR)GDO}$ | $I_G = -100\mu A$                   | -20  |      |        | V       |
| Cutoff voltage               | $V_{GS(off)}$ | $V_{DS} = 5V, I_D = 1\mu A$         |      | -0.6 | -1.5   | V       |
| Zero Voltage Drain current   | $I_{DSS}$     | $V_{DS} = 5V, V_{GS} = 0$           | 100  |      | 800    | $\mu A$ |
| Forward transfer admittance  | $ y_{fs} $    | $V_{DS} = 5V, V_{GS} = 0, f = 1KHz$ | 0.4  | 1.2  |        | mS      |
| Input capacitance            | $C_{iss}$     | $V_{DS} = 5V, V_{GS} = 0, f = 1MHz$ |      | 3.5  |        | pF      |
| Reverse Transfer capacitance | $C_{rss}$     | $V_{DS} = 5V, V_{GS} = 0, f = 1MHz$ |      | 0.65 |        | pF      |
| Output Noise Voltage         | $V_{NO}$      | $V_{IN} = 0, A \text{ CURVE}$       |      |      | -1 1 0 | dB      |

## $I_{DSS}$ Classification

| Classification   | A         | B         | C         | D         | E         |
|------------------|-----------|-----------|-----------|-----------|-----------|
| $I_{DSS}[\mu A]$ | 100 ~ 170 | 150 ~ 240 | 210 ~ 350 | 320 ~ 480 | 440 ~ 800 |

### Noise Voltage Test Circuit



Electrical Characteristic Curves

Fig. 1  $I_D - V_{DS}$

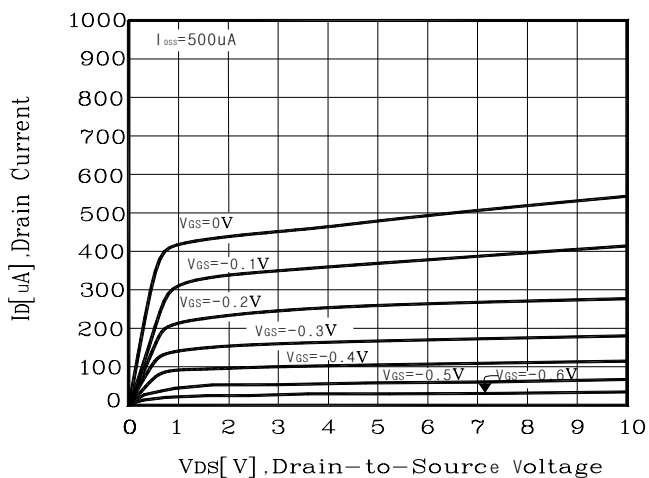


Fig. 2  $I_D - V_{DS}$

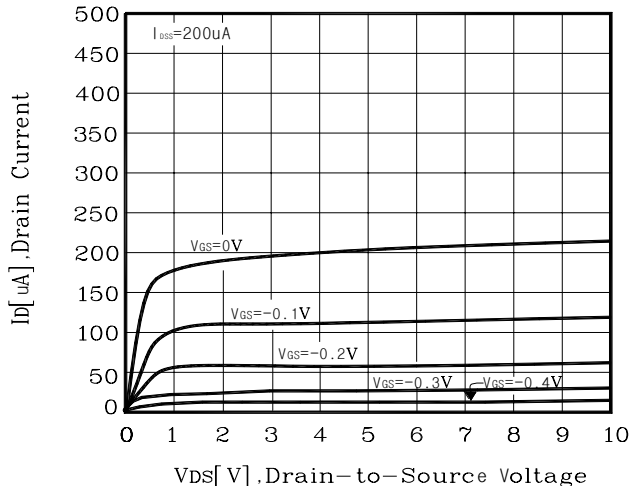


Fig. 3  $I_D - V_{GS}$

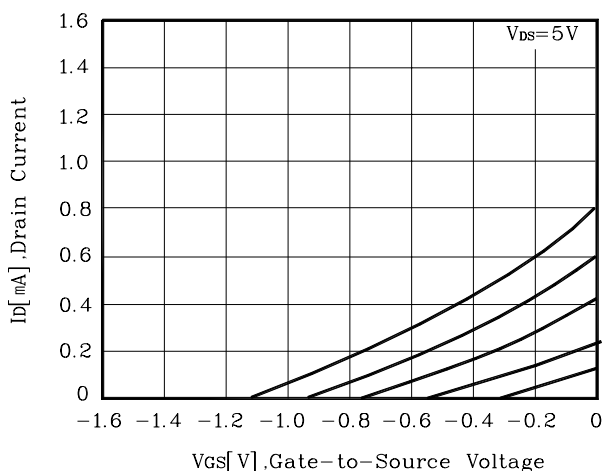


Fig. 4  $|Y_{fs}| - I_{DSS}$

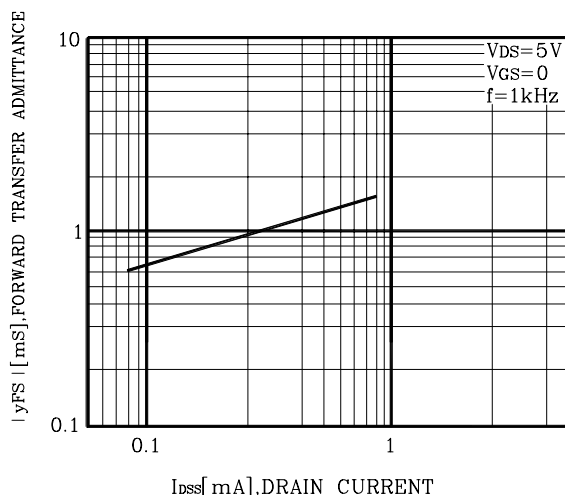


Fig. 5  $V_{GS(Off)} - I_{DSS}$

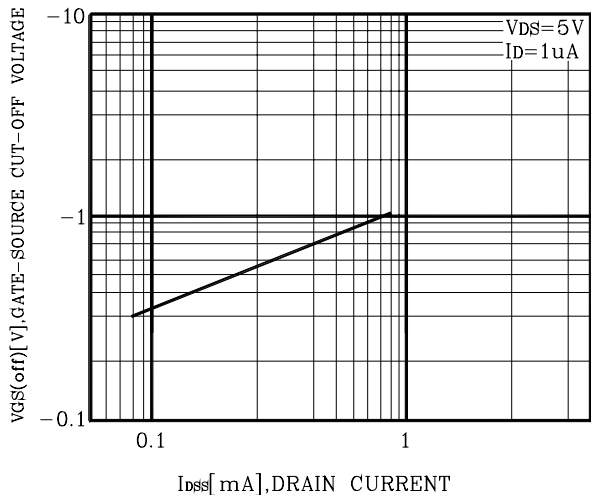
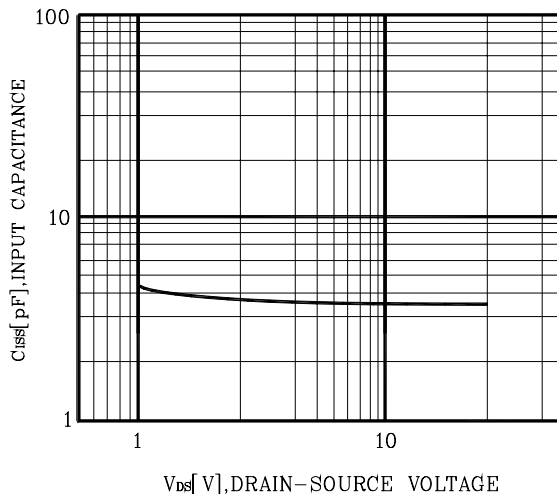


Fig. 6  $C_{iss} - V_{DS}$



Electrical Characteristic Curves

Fig. 7  $C_{rss}$  -  $V_{DS}$

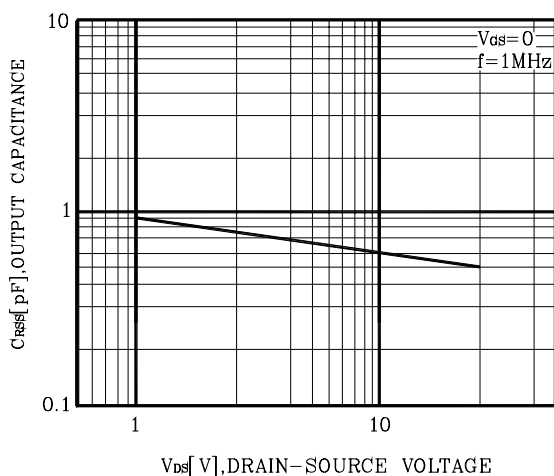


Fig. 8  $P_D$  -  $T_a$

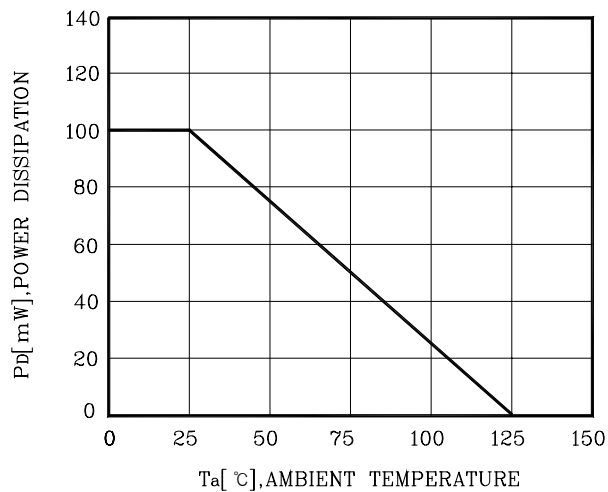
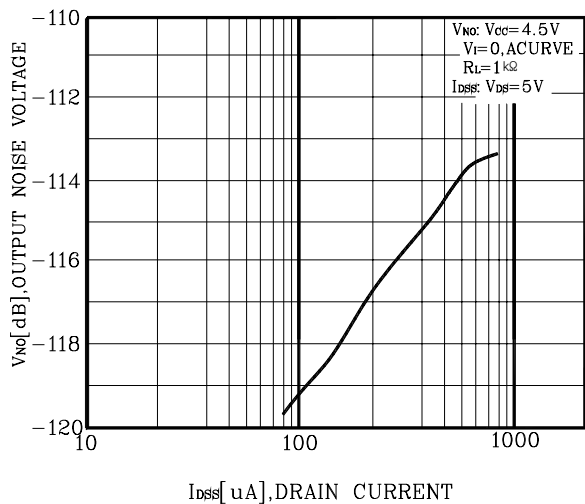


Fig. 9  $V_{NO}$  -  $I_{DSS}$



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