



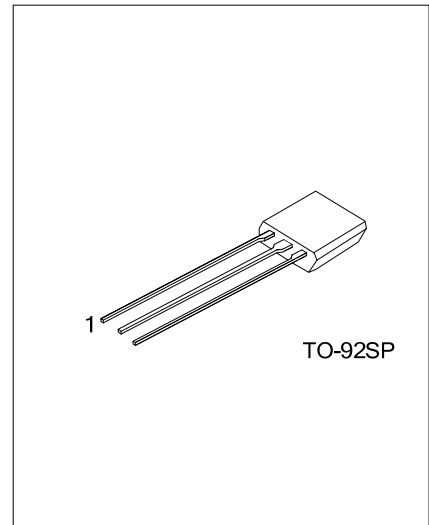
K596

N-CHANNEL JFET

CAPACITOR MICROPHONE APPLICATIONS

■ **FEATURES**

- *Especially Suited for use in Audio, Telephone Capacitor Microphones
- *Excellent Voltage characteristic
- *Excellent Transient Characteristic



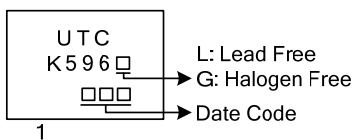
■ **ORDERING INFORMATION**

| Ordering Number | | Package | Pin Assignment | | | Packing |
|-----------------|---------------|---------|----------------|---|---|---------|
| Lead Free | Halogen Free | | 1 | 2 | 3 | |
| K596L-x-T9S-K | K596G-x-T9S-K | TO-92SP | S | G | D | Bulk |

Note: Pin Assignment: S: Source D: Drain G: Gate

| | | |
|----------------------|---|---|
| <p>K596L-x-T9S-K</p> | <p>(1) Packing Type (2) Package Type (3) Rank (4) Green Package</p> | <p>(1) K: Bulk (2) T9S: TO-92SP (3) x: refer to CLASSIFICATION OF I_{DSS} (4) L: Lead Free, G: Halogen Free and Lead Free</p> |
|----------------------|---|---|

■ **MARKING**



■ ABSOLUTE MAXIMUM RATINGS ($T_A=25^{\circ}\text{C}$,unless otherwise specified)

| PARAMETER | 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 | +125 | $^{\circ}\text{C}$ |
| Storage Temperature | T_{STG} | -55~+125 | $^{\circ}\text{C}$ |

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged.
Absolute maximum ratings are stress ratings only and functional device operation is not implied.

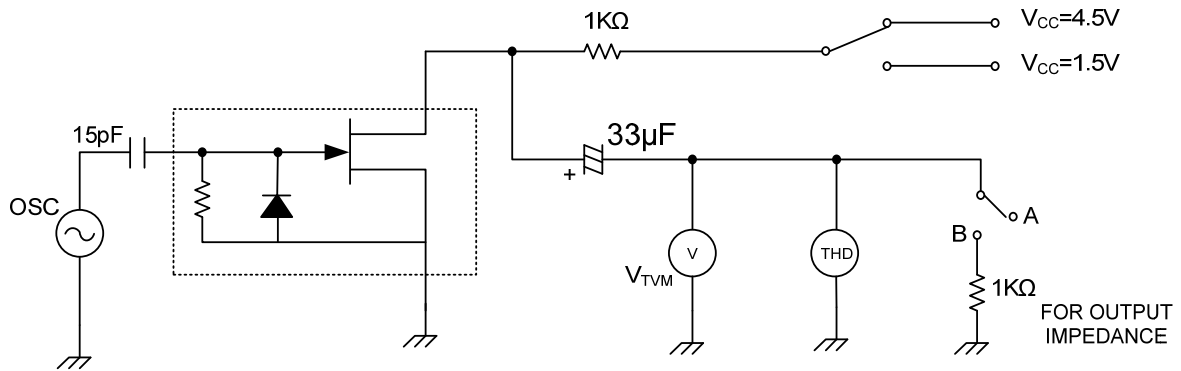
■ ELECTRICAL CHARACTERISTICS ($T_A=25^{\circ}\text{C}$, unless otherwise specified)

| PARAMETER | SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNIT |
|------------------------------|---------------|---|-----|------|------|---------------|
| Gate Drain Breakdown Voltage | BV_{GDO} | $I_G=-100\mu\text{A}$ | -20 | | | V |
| Gate Source Cut off Voltage | $V_{GS(OFF)}$ | $V_{DS}=5\text{V}, I_D=1\mu\text{A}$ | | -0.6 | -1.5 | V |
| Drain Current | I_{DSS} | $V_{DS}=5\text{V}, V_{GS}=0$ | 100 | | 800 | μA |
| Forward Transfer Admittance | Y_{FSI} | $V_{DS}=5\text{V}, V_{GS}=0, f=1\text{KHz}$ | 0.4 | 1.2 | | mS |
| Input Capacitance | C_{ISS} | $V_{DS}=5\text{V}, V_{GS}=0, f=1\text{MHz}$ | | 3.5 | | pF |
| Output Capacitance | C_{RSS} | $V_{DS}=5\text{V}, V_{GS}=0, f=1\text{MHz}$ | | 0.65 | | pF |

■ CLASSIFICATION OF I_{DSS}

| RANK | A | B | C | D | E |
|-------------------------|---------|---------|---------|---------|---------|
| $I_{DSS} (\mu\text{A})$ | 100-170 | 150-240 | 210-350 | 320-480 | 440-800 |

■ TEST CIRCUIT (T_A=25°C)



| PARAMETER | SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNIT |
|--------------------------------|-------------------|---|-----|------|------|------|
| Voltage Gain | G _v | V _{IN} =10mV, f=1KHz | | -3 | | dB |
| Reduced Voltage Characteristic | ΔG _v | V _{IN} =10mV, f=1KHz, V _{CC} =4.5V→1.5V | | -1.2 | -3.5 | dB |
| Frequency Characteristic | ΔG _v f | f=1KHz to 110Hz | | | -1 | dB |
| Input Resistance | Z _{IN} | f=1KHz | 25 | | | MΩ |
| Output Resistance | Z _O | f=1KHz | | | 700 | Ω |
| Total Harmonic distortion | THD | V _{IN} =30mV, f=1KHz | | 1 | | % |
| Output Noise Voltage | V _{NO} | V _{IN} =0 | | | -110 | dB |

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