



Capacitor Microphone Applications

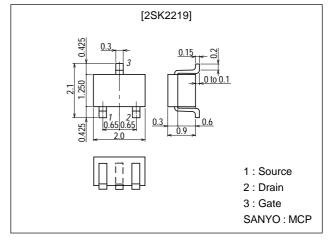
Features

- · Ultrasmall-sized package permitting 2SK2219-applied sets to be made small and slim.
- · Especially suited for use in audio, telephone capacitor microphones.
- · Excellent voltage characteristic.
- · Excellent transient characteristic.
- · Adoption of FBET process.

Package Dimensions

unit:mm

2058A



Specifications

Absolute Maximum Ratings at Ta = 25°C

| Parameter | Symbol | Conditions | Ratings | Unit |
|-----------------------------|------------------|------------|-------------|------|
| Gate-to-Drain Voltage | V _{GDO} | | -20 | V |
| Gate Current | IG | | 10 | mA |
| Drain Current | ID | | 1 | mA |
| Allowable Power Dissipation | P_{D} | | 100 | mW |
| Junction Temperature | Tj | | 150 | °C |
| Storage Temperature | Tstg | | -55 to +150 | °C |

Electrical Characteristics at Ta = 25°C

| Parameter | Symbol | Conditions | Ratings | | | Unit |
|---------------------------------|-----------------------|---|---------|------|------|-------|
| | | | min | typ | max | Offic |
| Gate-to-Drain Breakdown Voltage | V _(BR) GDO | I _G =-100μA | -20 | | | V |
| Zero-Gate Voltage Drain Current | IDSS | V _{DS} =5V, V _{GS} =0 | 140* | | 500* | μA |
| Cutoff Voltage | V _{GS(off)} | $V_{DS}=5V$, $I_{D}=1\mu A$ | -0.2 | -0.6 | -1.2 | V |
| Forward Transfer Admittance | yfs | $V_{DS}=5V$, $V_{GS}=0$, $f=1kHz$ | 0.5 | 1,2 | | mS |
| Input Capacitance | Ciss | V_{DS} =5V, V_{GS} =0, f=1MHz | | 4.1 | | pF |
| Reverse Transfer Capacitance | Crss | V_{DS} =5V, V_{GS} =0, f=1MHz | | 0.88 | | pF |

 $[\]ast$: The 2SK2219 is classified by I_{DSS} as follows : (unit : $\mu A)$

140 21 240 210 22 350 320 23 500

Marking : D I_{DSS} rank : 21, 22, 23 Continued on next page.

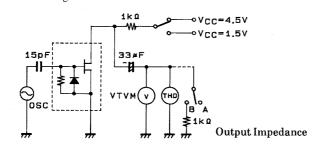
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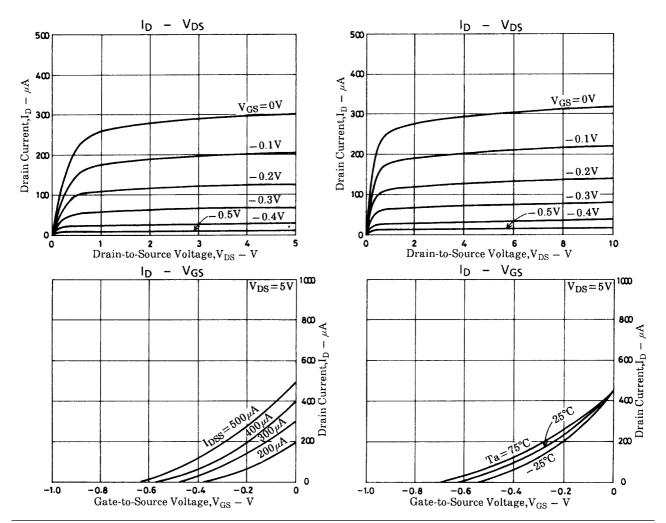
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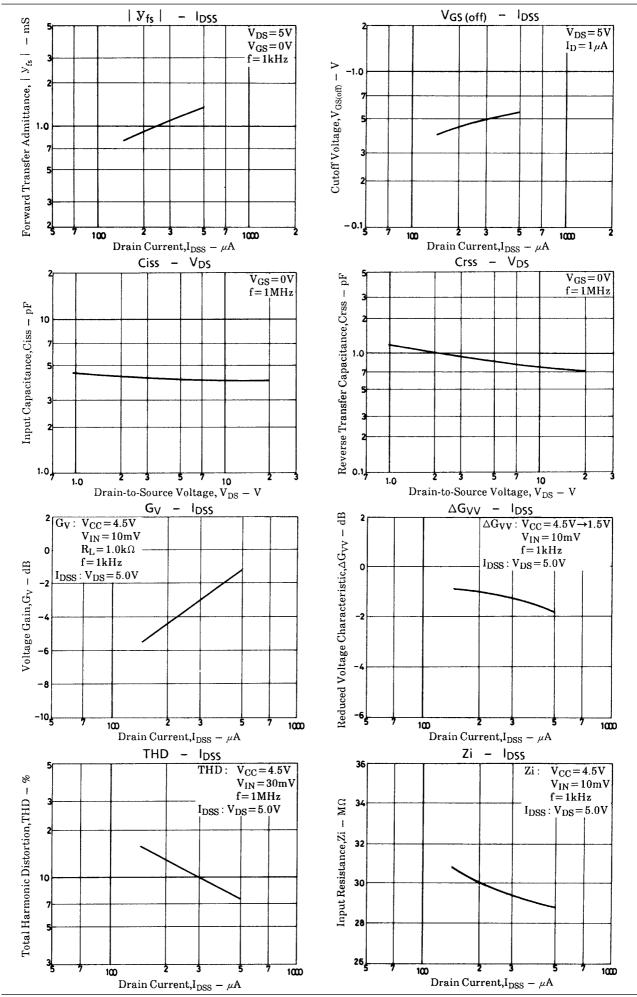
| Parameter | Symbol | Conditions | Ratings | | | Unit | | |
|--|------------------|--|---------|------|------|-------|--|--|
| | | | min | typ | max | Offit | | |
| Ta=25°C, V_{CC} =4.5V, R_L =1k Ω , Cin=15pF, See specified Test Circuit | | | | | | | | |
| Voltage Gain | G _V | V _{IN} =10mV, f=1kHz | | -3.0 | | dB | | |
| Reduced Voltage Characteristic | ΔG_{VV} | V_{IN} =10mV, f=1kHz, V_{CC} =4.5 \rightarrow 1.5V | | -1.2 | -3.5 | dB | | |
| Frequency Characteristic | ΔG _{Vf} | f=1kHz to 110Hz | | | -1.0 | dB | | |
| Input Impedance | Zin | f=1kHz | 25 | | | МΩ | | |
| Output Impedance | Zo | f=1kHz | | | 700 | Ω | | |
| Total Harmonic Distortion | THD | V _{IN} =30mV, f=1kHz | | 1.0 | | % | | |
| Output Noise Voltage | VNO | V _{IN} =0, A curve | | | -110 | dB | | |

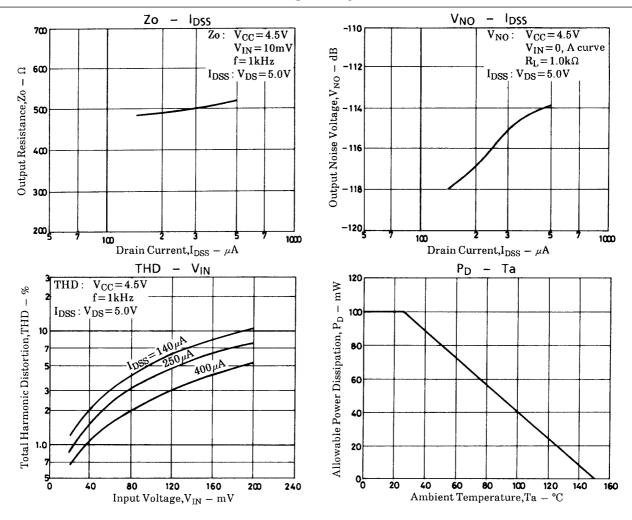
Test Circuit

Voltage Gain Frequency Characteristic Distortion Reduced Voltage Characteristic









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