Ordering number: EN 4755

SANYO

No.4755

# 2SK2219

N-Channel Junction Silicon FET

## Capacitor Microphone Applications

### Features

- Very small-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.

### Absolute Maximum Ratings at Ta = 25°C

| | | | 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 | Tj | 150 | °C |
| Storage Temperature | Tstg | −55 to +150 | °C |

### Electrical Characteristics at Ta = 25°C

| | | | min | typ | max | unit |
|---|---|---|---|---|---|---|
| G-D Breakdown Voltage | $V_{(BR)GDO}$ | $I_G = -100\mu A$ | −20 | | | V |
| Cutoff Voltage | $V_{GS(off)}$ | $V_{DS} = 5V, I_D = 1\mu A$ | −0.2 | −0.6 | −1.2 | V |
| Drain Current | $I_{DSS}$ | $V_{DS} = 5V, V_{GS} = 0$ | 140※ | | 500※ | μA |
| Forward Transfer Admittance | $\lvert y_{fs} \rvert$ | $V_{DS} = 5V, V_{GS} = 0, f = 1kHz$ | 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 |

※ : The 2SK2219 is classified by $I_{DSS}$ as follows : (unit : μA)

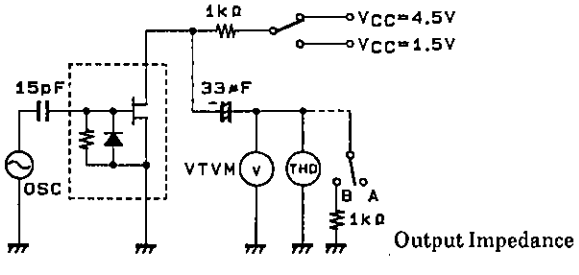
| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 140 | 21 | 240 | 210 | 22 | 350 | 320 | 23 | 500 |

Marking : D

$I_{DSS}$ rank : 21, 22, 23

### Test Circuit

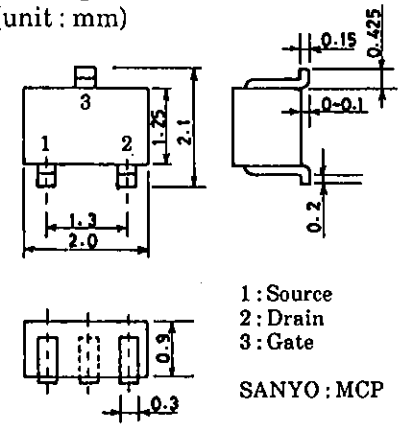
Voltage Gain
Frequency Characteristic
Distortion
Reduced Voltage Characteristic




Output Impedance

### Package Dimensions 2058A

(unit : mm)




1 : Source
2 : Drain
3 : Gate

SANYO : MCP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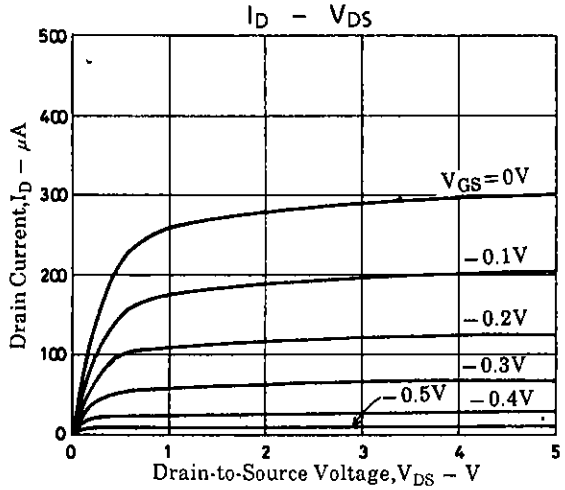
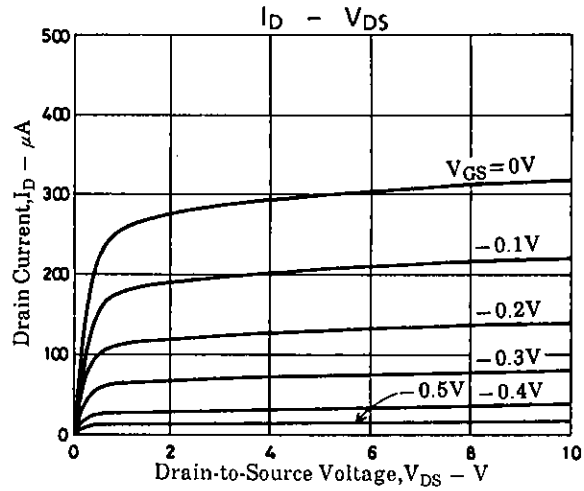
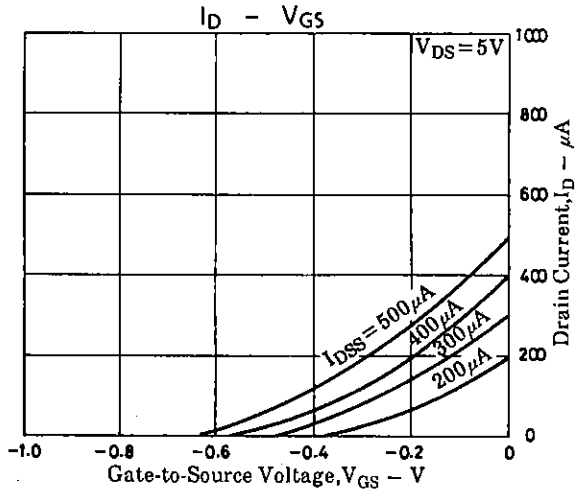
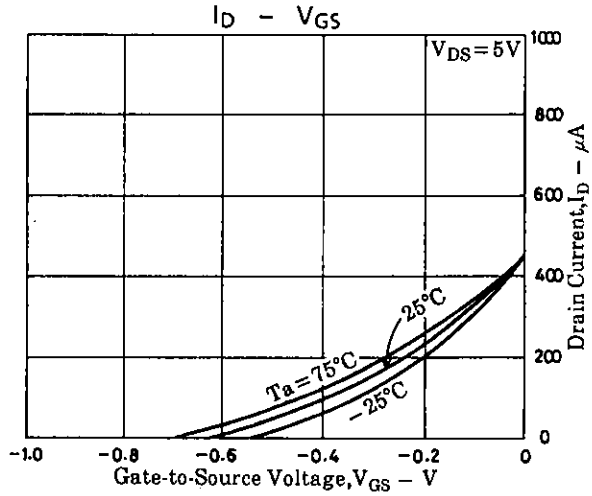
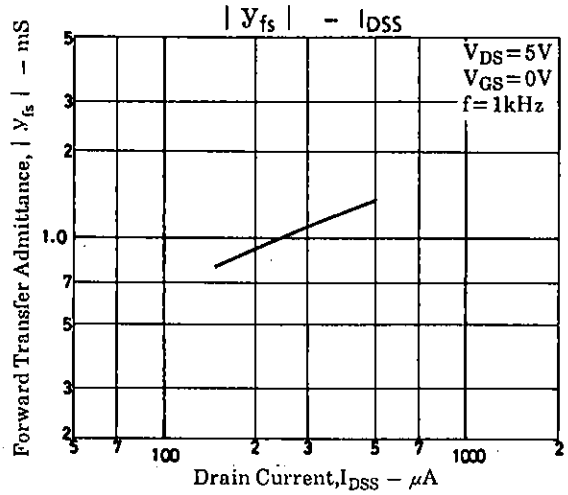
| [Ta = 25°C, $V_{CC}$ = 4.5V, $R_L$ = 1kΩ, Cin = 15pF, See specified Test Circuit.] | | | min | typ | max | unit |
|---|---|---|---|---|---|---|
| Voltage Gain | $G_V$ | $V_{IN}$ = 10mV, f = 1kHz | | −3.0 | | dB |
| Reduced Voltage Characteristic | $\Delta G_{VV}$ | $V_{IN}$ = 10mV, f = 1kHz<br>$V_{CC}$ = 4.5 → 1.5V | | −1.2 | −3.5 | dB |
| Frequency Characteristic | $\Delta G_{Vf}$ | f = 1kHz to 110Hz | | | −1.0 | dB |
| Input Impedance | Zin | f = 1kHz | 25 | | | MΩ |
| Output Impedance | Zo | f = 1kHz | | | 700 | Ω |
| Total Harmonic Distortion | THD | $V_{IN}$ = 30mV, f = 1kHz | | 1.0 | | % |
| Output Noise Voltage | $V_{NO}$ | $V_{IN}$ = 0, A curve | | | −110 | dB |

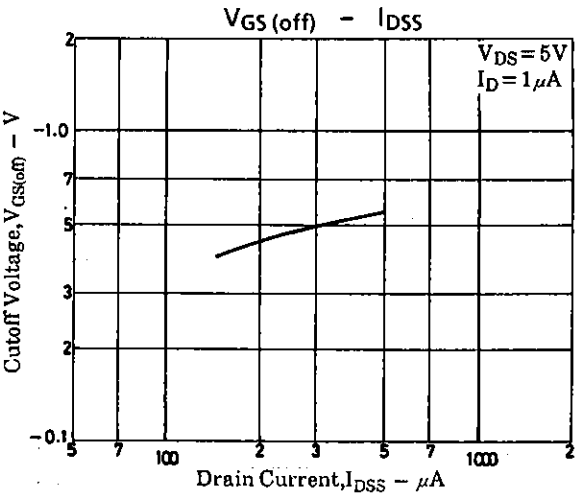


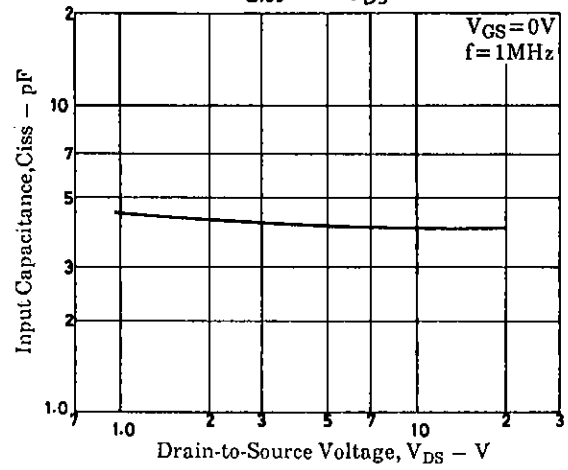



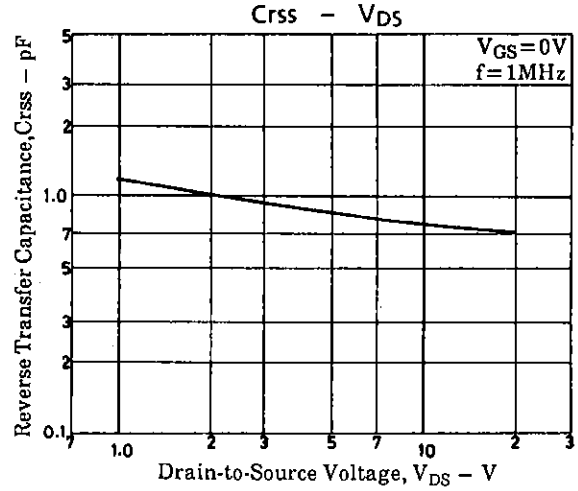



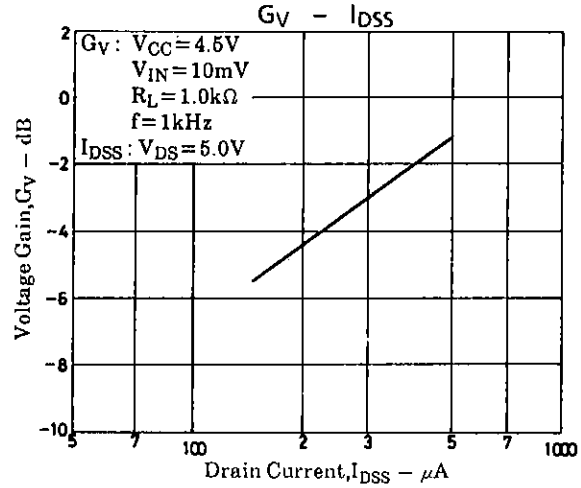
Ciss – $V_{DS}$



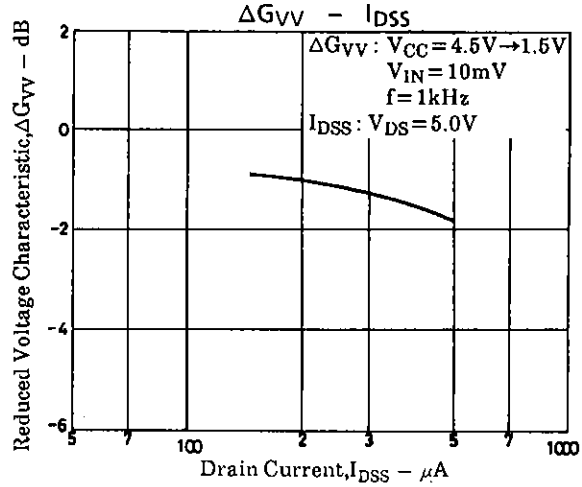

Crss – $V_{DS}$



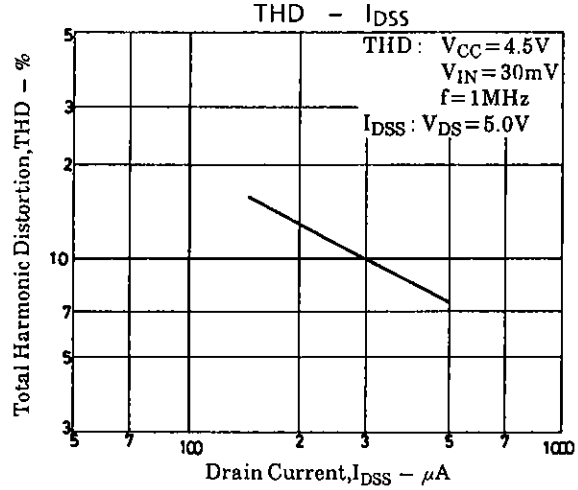

$G_V$ – $I_{DSS}$



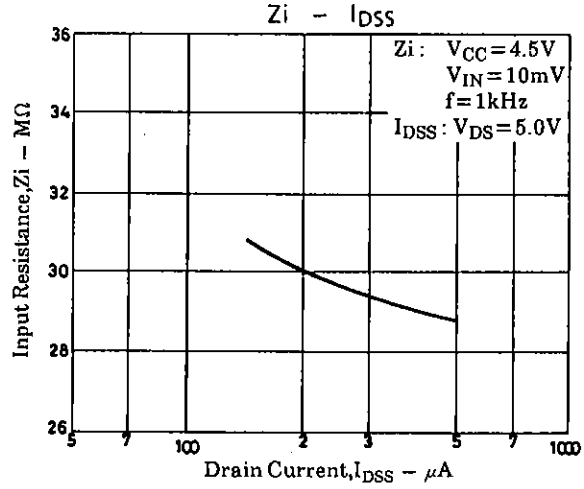

$\Delta G_{VV}$ – $I_{DSS}$



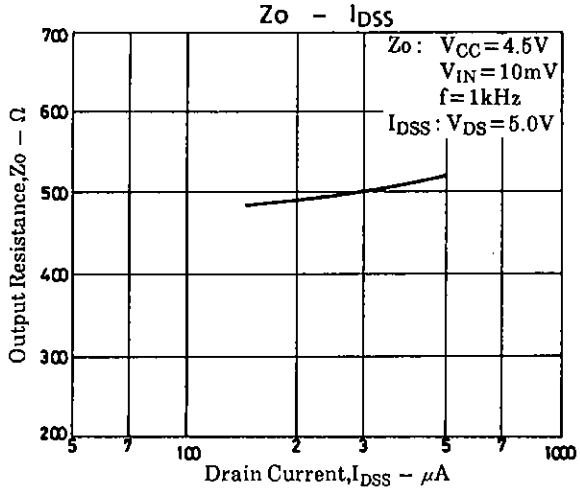

THD – $I_{DSS}$




Zi – $I_{DSS}$




Zo – $I_{DSS}$




$V_{NO}$ – $I_{DSS}$