

FG694301

Silicon N-channel MOS FET (FET1)

Silicon P-channel MOS FET (FET2)

For switching circuits

■ Overview

FG694301 is N-P channel dual type small signal MOS FET employed small size surface mounting package.

■ Features

- Low drain-source ON resistance:
 $R_{DS(on)}$ typ. = $2\ \Omega$ ($V_{GS} = 4.0\ V$) / $4\ \Omega$ ($V_{GS} = -4.0\ V$)
- High-speed switching
- Small size surface mounting package: SSMINI6-F3-B
- Contributes to miniaturization of sets, reduction of component count.
- Eco-friendly Halogen-free package

■ Packaging

Embossed type (Thermo-compression sealing): 8000 pcs / reel (standard)

■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

| | Parameter | Symbol | Rating | Unit |
|---------|--------------------------------|-----------|-------------|------------------|
| FET1 | Drain-source surrender voltage | V_{DSS} | 30 | V |
| | Gate-source surrender voltage | V_{GSS} | ± 12 | V |
| | Drain current | I_D | 100 | mA |
| | Peak drain current | I_{DP} | 200 | mA |
| FET2 | Drain-source surrender voltage | V_{DSS} | -30 | V |
| | Gate-source surrender voltage | V_{GSS} | ± 12 | V |
| | Drain current | I_D | -100 | mA |
| | Peak drain current | I_{DP} | -200 | mA |
| Overall | Total power dissipation | P_T | 125 | mW |
| | Channel temperature | T_{ch} | 150 | $^\circ\text{C}$ |
| | Storage temperature | T_{stg} | -55 to +150 | $^\circ\text{C}$ |

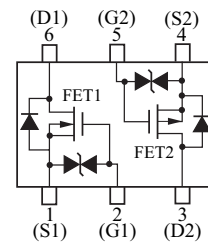
■ Package

- Code
SSMINI6-F3-B
- Pin Name

| | |
|------------------|------------------|
| 1: Source (FET1) | 4: Source (FET2) |
| 2: Gate (FET1) | 5: Gate (FET2) |
| 3: Drain (FET2) | 6: Drain (FET1) |

■ Marking Symbol: V7

■ Internal Connection



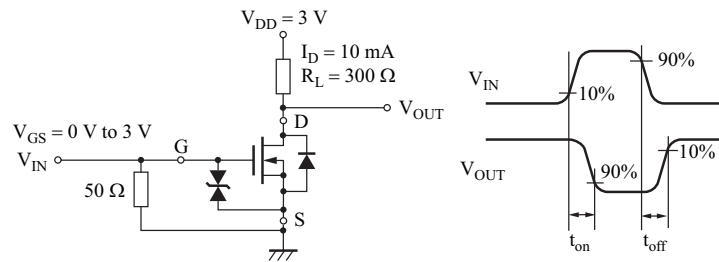
■ Electrical Characteristics $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

• FET1

| Parameter | Symbol | Conditions | Min | Typ | Max | Unit |
|--|--------------|---|-----|-----|----------|---------------|
| Drain-source surrender voltage | V_{DSS} | $I_D = 1 \text{ mA}, V_{GS} = 0$ | 30 | | | V |
| Drain-source cutoff current | I_{DSS} | $V_{DS} = 30 \text{ V}, V_{GS} = 0$ | | | 1.0 | μA |
| Gate-source cutoff current | I_{GSS} | $V_{GS} = \pm 10 \text{ V}, V_{DS} = 0$ | | | ± 10 | μA |
| Gate threshold voltage | V_{TH} | $I_D = 1.0 \mu\text{A}, V_{DS} = 3.0 \text{ V}$ | 0.5 | 1.0 | 1.5 | V |
| Drain-source ON resistance | $R_{DS(on)}$ | $I_D = 10 \text{ mA}, V_{GS} = 2.5 \text{ V}$ | | 3 | 6 | Ω |
| | | $I_D = 10 \text{ mA}, V_{GS} = 4.0 \text{ V}$ | | 2 | 3 | |
| Forward transfer admittance | $ Y_{fs} $ | $I_D = 10 \text{ mA}, V_{DS} = 3.0 \text{ V}$ | 20 | 55 | | mS |
| Short-circuit input capacitance (Common source) | C_{iss} | $V_{DS} = 3 \text{ V}, V_{GS} = 0, f = 1 \text{ MHz}$ | | 12 | | pF |
| Short-circuit output capacitance (Common source) | C_{oss} | | | | 7 | pF |
| Reverse transfer capacitance (Common source) | C_{rss} | | | | 3 | pF |
| Turn-on time * | t_{on} | $V_{DD} = 3 \text{ V}, V_{GS} = 0 \text{ V to } 3 \text{ V}, I_D = 10 \text{ mA}$ | | 100 | | ns |
| Turn-off time * | t_{off} | $V_{DD} = 3 \text{ V}, V_{GS} = 3 \text{ V to } 0 \text{ V}, I_D = 10 \text{ mA}$ | | 100 | | ns |

Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

2. *: Test circuit

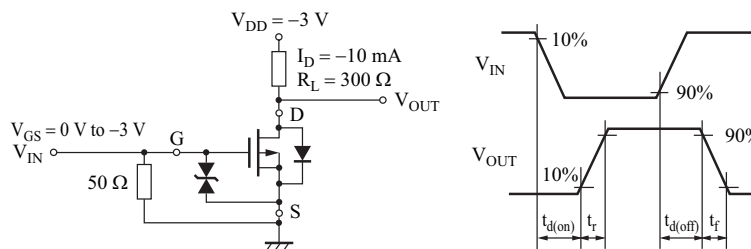


• FET2

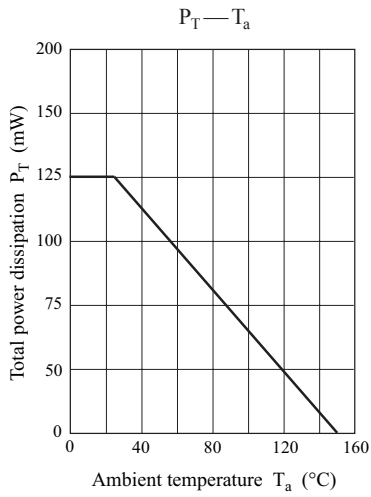
| Parameter | Symbol | Conditions | Min | Typ | Max | Unit |
|--|--------------|--|------|------|----------|---------------|
| Drain-source surrender voltage | V_{DSS} | $I_D = -1 \text{ mA}, V_{GS} = 0$ | -30 | | | V |
| Drain-source cutoff current | I_{DSS} | $V_{DS} = -30 \text{ V}, V_{GS} = 0$ | | | -1.0 | μA |
| Gate-source cutoff current | I_{GSS} | $V_{GS} = \pm 10 \text{ V}, V_{DS} = 0$ | | | ± 10 | μA |
| Gate threshold voltage | V_{TH} | $I_D = -1.0 \mu\text{A}, V_{DS} = -3.0 \text{ V}$ | -0.5 | -1.0 | -1.5 | V |
| Drain-source ON resistance | $R_{DS(on)}$ | $I_D = -10 \text{ mA}, V_{GS} = -2.5 \text{ V}$ | | 7 | 17 | Ω |
| | | $I_D = -10 \text{ mA}, V_{GS} = -4.0 \text{ V}$ | | 4 | 7 | |
| Forward transfer admittance | $ Y_{fs} $ | $I_D = -10 \text{ mA}, V_{DS} = -3.0 \text{ V}$ | 20 | 40 | | mS |
| Short-circuit input capacitance (Common source) | C_{iss} | $V_{DS} = -3 \text{ V}, V_{GS} = 0, f = 1 \text{ MHz}$ | | 12 | | pF |
| Short-circuit output capacitance (Common source) | C_{oss} | | | | 7 | pF |
| Reverse transfer capacitance (Common source) | C_{rss} | | | | 3 | pF |
| Turn-on time * | t_{on} | $V_{DD} = -3 \text{ V}, V_{GS} = 0 \text{ V to } -3 \text{ V}, I_D = -10 \text{ mA}$ | | 100 | | ns |
| Turn-off time * | t_{off} | $V_{DD} = -3 \text{ V}, V_{GS} = -3 \text{ V to } 0 \text{ V}, I_D = -10 \text{ mA}$ | | 100 | | ns |

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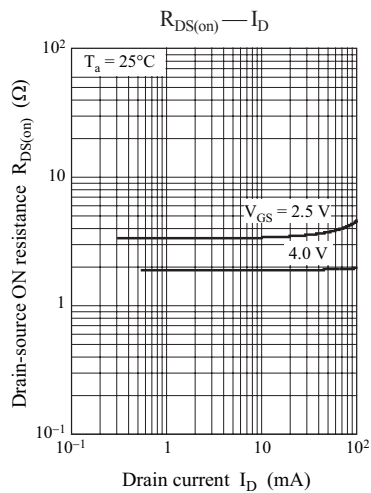
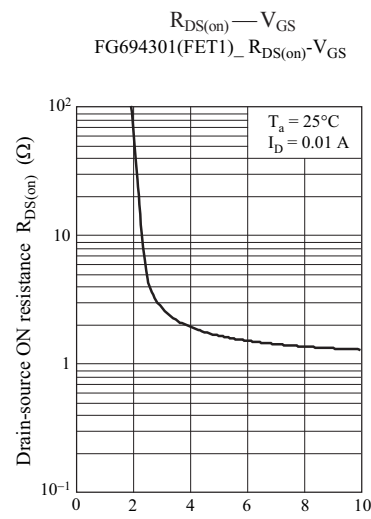
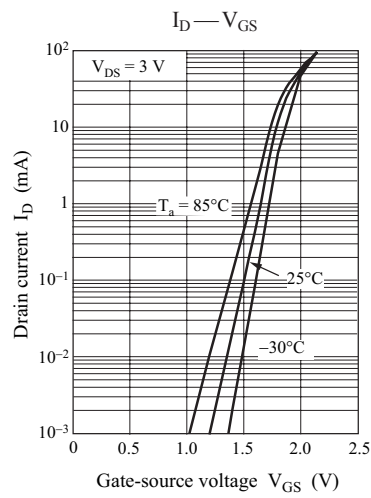
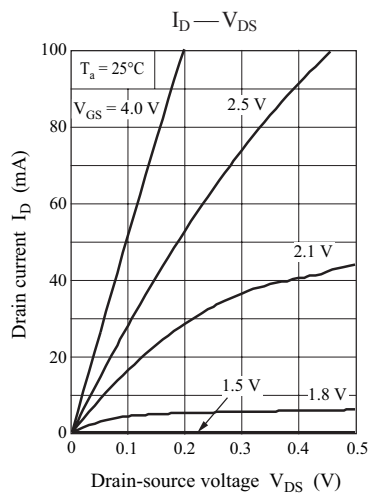
2. *: Test circuit

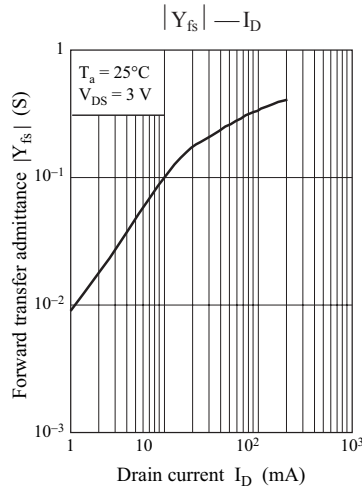
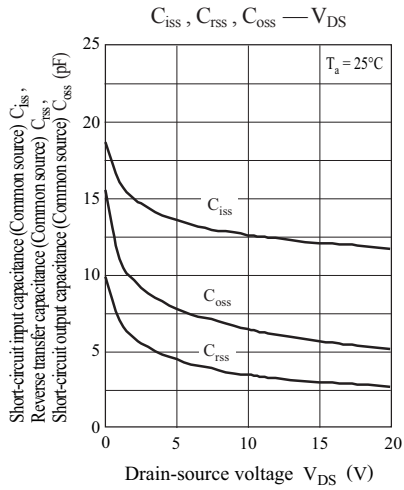


Common characteristics chart

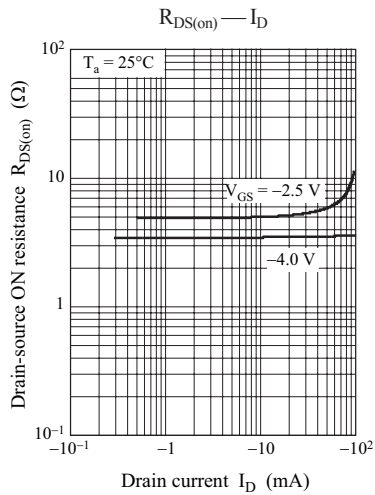
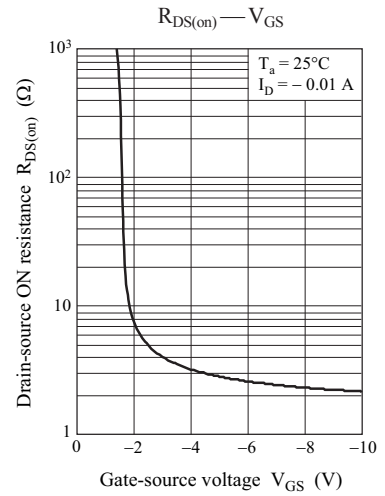
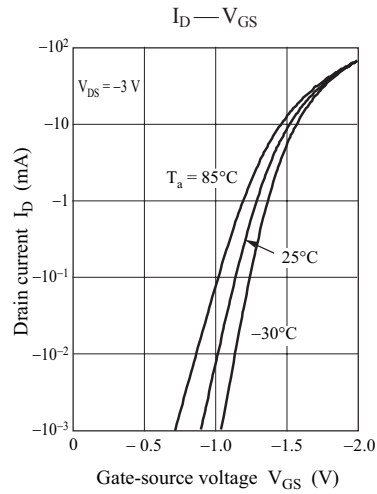
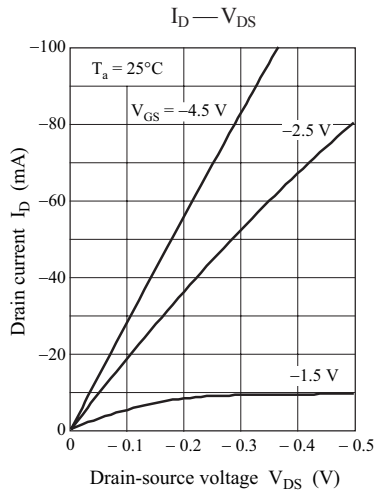


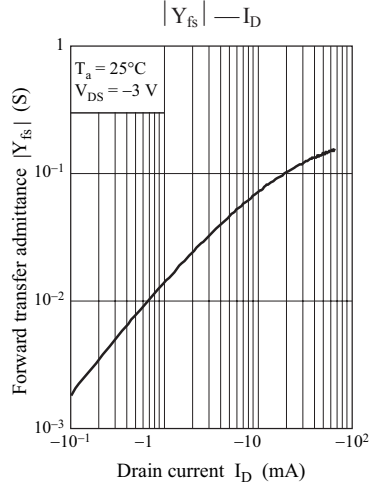
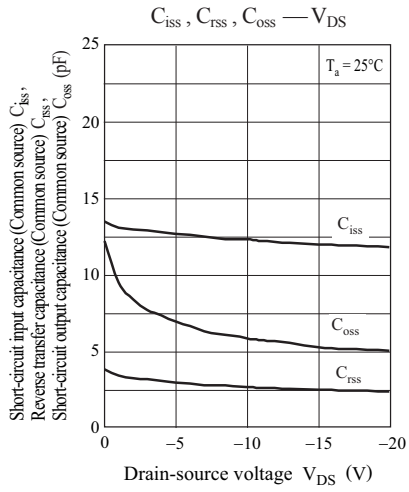
Characteristics charts of FET1





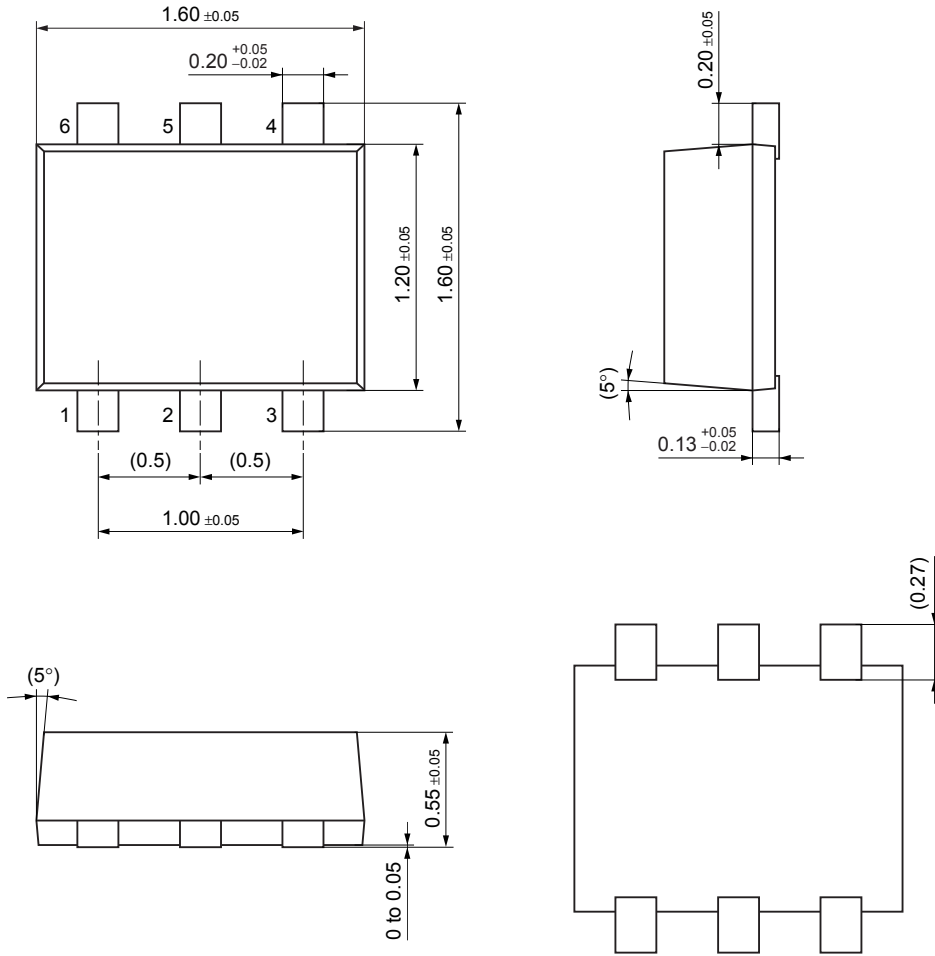
Characteristics charts of FET2





SSMini6-F3-B

Unit: mm



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