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MTM23110

Silicon P-channel MOSFET

For switching circuits

■ Features

- Low voltage drive (1.8 V, 2.5 V, 4 V)
- Realization of low on-resistance, using extremely fine process

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

| Parameter | Symbol | Rating | Unit |
|--------------------------------|-----------|-------------|------------------|
| Drain-source surrender voltage | V_{DSS} | -12 | V |
| Gate-source surrender voltage | V_{GSS} | ± 8 | V |
| Drain current | I_D | -4.0 | A |
| Peak drain current *1 | I_{DP} | -16 | A |
| Power dissipation *2 | P_D | 500 | mW |
| Channel temperature | T_{ch} | 150 | $^\circ\text{C}$ |
| Storage temperature | T_{stg} | -55 to +150 | $^\circ\text{C}$ |

Note) *1: Pulse width $\leq 10 \mu\text{s}$, Duty Cycle $\leq 1\%$

*2: Measuring on ceramic substrate at $40 \text{ mm} \times 38 \text{ mm} \times 0.1 \text{ mm}$

Absolute maximum rating without heat sink for P_D is 150 mW

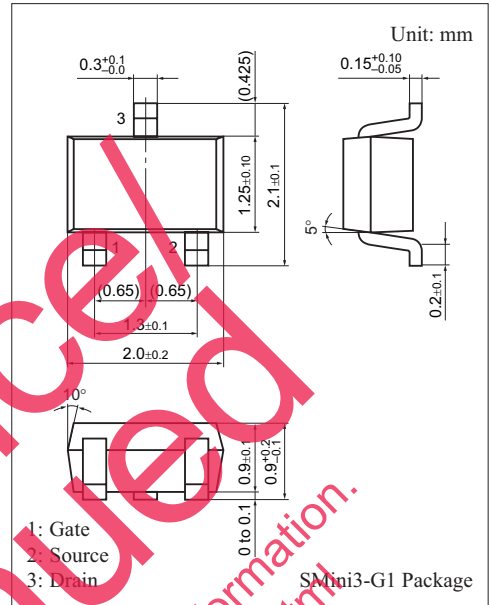
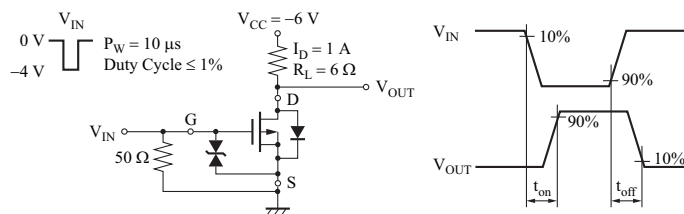
■ Electrical Characteristics $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

| Parameter | Symbol | Conditions | Min | Typ | Max | Unit |
|------------------------------------------------------------|--------------|------------------------------------------------------------------------------------|------|-------|----------|---------------|
| Drain-source surrender voltage | V_{DSS} | $I_D = -1 \text{ mA}, V_{GS} = 0$ | -12 | | | V |
| Drain-source cutoff current | I_{DSS} | $V_{DS} = -12 \text{ V}, V_{GS} = 0$ | | | -1.0 | μA |
| Gate-source cutoff current | I_{GSS} | $V_{GS} = \pm 6.4 \text{ V}, V_{DS} = 0$ | | | ± 10 | μA |
| Gate threshold voltage | V_{TH} | $I_D = -1.0 \text{ mA}, V_{DS} = -6.0 \text{ V}$ | -0.3 | -0.65 | -1.0 | V |
| Drain-source ON resistance *1 | $R_{D(Son)}$ | $I_D = -1 \text{ A}, V_{GS} = -4.0 \text{ V}$ | | 30 | 40 | m Ω |
| | | $I_D = -0.5 \text{ A}, V_{GS} = -2.5 \text{ V}$ | | 35 | 55 | |
| | | $I_D = -0.2 \text{ A}, V_{GS} = -1.8 \text{ V}$ | | 50 | 75 | |
| Forward transfer admittance *1 | $ Y_{fs} $ | $I_D = -1.0 \text{ A}, V_{DS} = -10 \text{ V}, f = 1 \text{ kHz}$ | 3.5 | | | S |
| Short-circuit forward transfer capacitance (Common source) | C_{fs} | | | 1200 | | pF |
| Short-circuit output capacitance (Common source) | C_{oss} | $V_{DS} = -10 \text{ V}, V_{GS} = 0, f = 1 \text{ MHz}$ | | 110 | | pF |
| Reverse transfer capacitance (Common source) | C_{rss} | | | 110 | | pF |
| Turn-on time *2 | t_{on} | $V_{DD} = -6 \text{ V}, V_{GS} = 0 \text{ V to } -4 \text{ V}, I_D = -1 \text{ A}$ | | 50 | | ns |
| Turn-off time *2 | t_{off} | $V_{DD} = -6 \text{ V}, V_{GS} = -4 \text{ V to } 0 \text{ V}, I_D = -1 \text{ A}$ | | 300 | | ns |

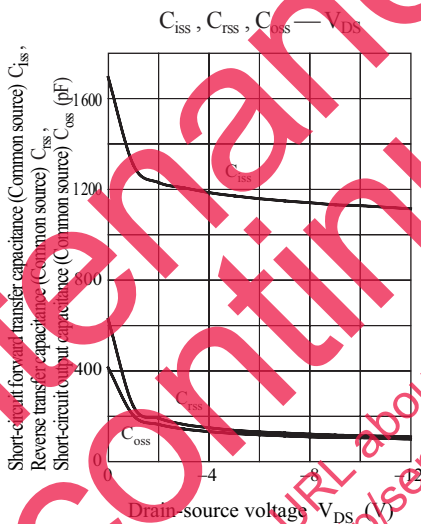
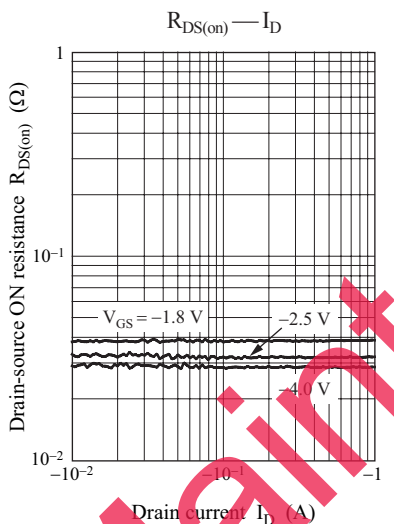
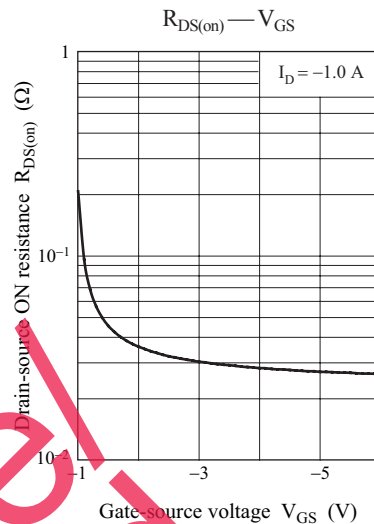
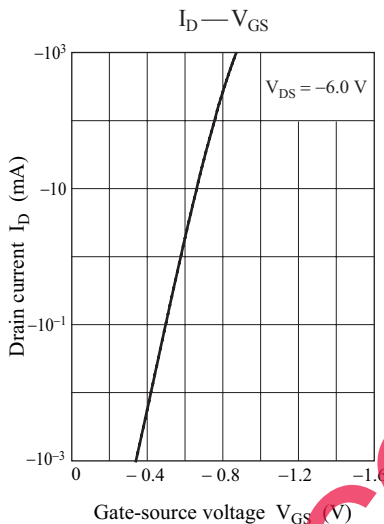
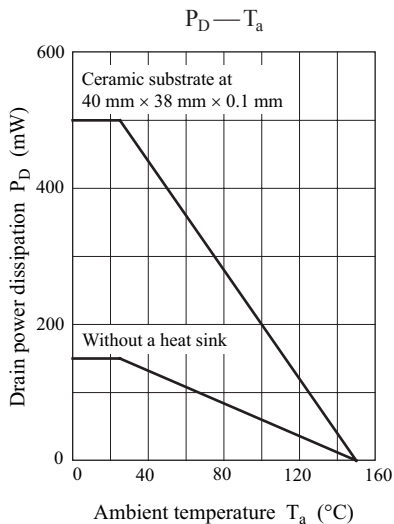
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

2. *1: Pulse measurement: Pulse width $< 300 \mu\text{s}$, Duty Cycle $< 2\%$

*2: t_{on}, t_{off} measurement circuit



Marking Symbol: DM



Main Discontinued
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