

# UP04878

## Silicon N-channel MOSFET

For switching

### ■ Features

- Allowing 2.5 V drive
- Incorporating a built-in gate protection-diode
- Reduction of the mounting area and assembly cost by one half

### ■ Basic Part Number

- 2SK3539 × 2

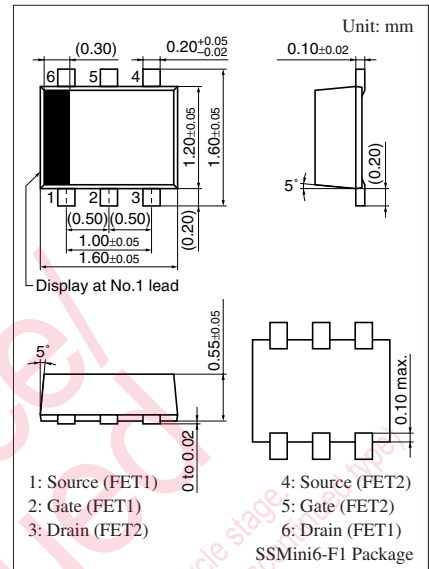
### ■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

| Parameter                        | Symbol    | Rating      | Unit             |
|----------------------------------|-----------|-------------|------------------|
| Drain-source surrender voltage   | $V_{DSS}$ | 50          | V                |
| Gate-source voltage (Drain open) | $V_{GSO}$ | $\pm 7$     | V                |
| Drain current                    | $I_D$     | 100         | mA               |
| Peak drain current               | $I_{DP}$  | 200         | mA               |
| Total power dissipation          | $P_T$     | 125         | mW               |
| Channel temperature              | $T_{ch}$  | 125         | $^\circ\text{C}$ |
| Storage temperature              | $T_{stg}$ | -55 to +125 | $^\circ\text{C}$ |

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

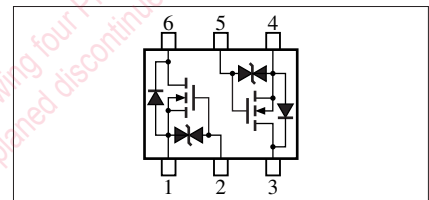
| Parameter                                                  | Symbol       | Conditions                                                                     | Min | Typ | Max     | Unit          |    |
|------------------------------------------------------------|--------------|--------------------------------------------------------------------------------|-----|-----|---------|---------------|----|
| Drain-source surrender voltage                             | $V_{DSS}$    | $I_D = 10 \mu\text{A}, V_{GS} = 0$                                             | 50  |     |         | V             |    |
| Drain-source cutoff current                                | $I_{DSS}$    | $V_{DS} = 50 \text{ V}, V_{GS} = 0$                                            |     |     | 1.0     | $\mu\text{A}$ |    |
| Gate-source cutoff current                                 | $I_{GSS}$    | $V_{GS} = \pm 7 \text{ V}, V_{DS} = 0$                                         |     |     | $\pm 5$ | $\mu\text{A}$ |    |
| Gate threshold voltage                                     | $V_{th}$     | $I_D = 1 \mu\text{A}, V_{DS} = 3 \text{ V}$                                    | 0.9 | 1.2 | 1.5     | V             |    |
| Drain-source ON resistance                                 | $R_{DS(on)}$ | $I_D = 10 \text{ mA}, V_{GS} = 2.5 \text{ V}$                                  |     | 8   | 15      | $\Omega$      |    |
|                                                            |              | $I_D = 10 \text{ mA}, V_{GS} = 4.0 \text{ V}$                                  |     | 6   | 12      |               |    |
| Forward transfer admittance                                | $ Y_{fs} $   | $I_D = 10 \text{ mA}, V_{GS} = 4.0 \text{ V}$                                  | 20  | 60  |         | mS            |    |
| Short-circuit forward transfer capacitance (Common-source) | $C_{iss}$    | $V_{DS} = 3 \text{ V}, V_{GS} = 0 \text{ V}, f = 1 \text{ MHz}$                |     | 12  |         | pF            |    |
|                                                            |              |                                                                                |     |     | 7       |               | pF |
|                                                            |              |                                                                                |     |     | 3       |               |    |
| Reverse transfer capacitance (Common-source)               | $C_{rss}$    |                                                                                |     | 3   |         | pF            |    |
| Turn-on time                                               | $t_{on}$     | $V_{DD} = 3 \text{ V}, V_{GS} = 0 \text{ V to } 3 \text{ V}, R_L = 470 \Omega$ |     | 200 |         | ns            |    |
| Turn-off time                                              | $t_{off}$    | $V_{DD} = 3 \text{ V}, V_{GS} = 3 \text{ V to } 0 \text{ V}, R_L = 470 \Omega$ |     | 200 |         | ns            |    |

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



Marking Symbol: 7Y

Internal Connection





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