FK3306010L
Silicon N-channel MOSFET

For switching FK350601 in SSSMini3 type package

- **Features**
  - Low drive voltage: 2.5 V drive
  - Halogen-free / RoHS compliant (EU RoHS / UL-94 V-0 / MSL: Level 1 compliant)

- **Marking Symbol**: CV

- **Packaging**
  Embossed type (Thermo-compression sealing): 10 000 pcs / reel (standard)

- **Absolute Maximum Ratings** $T_a = 25 \, ^\circ C$

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbol</th>
<th>Rating</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drain-source voltage</td>
<td>VDS</td>
<td>60</td>
<td>V</td>
</tr>
<tr>
<td>Gate-source voltage</td>
<td>VGS</td>
<td>±12</td>
<td>V</td>
</tr>
<tr>
<td>Drain current</td>
<td>ID</td>
<td>100</td>
<td>mA</td>
</tr>
<tr>
<td>Pulse drain current</td>
<td>IDp</td>
<td>200</td>
<td>mA</td>
</tr>
<tr>
<td>Total power dissipation</td>
<td>PD</td>
<td>100</td>
<td>mW</td>
</tr>
<tr>
<td>Channel temperature</td>
<td>Tch</td>
<td>150</td>
<td>°C</td>
</tr>
<tr>
<td>Operating Ambient Temperature</td>
<td>Tstg</td>
<td>-40 to 85</td>
<td>°C</td>
</tr>
<tr>
<td>Storage temperature</td>
<td>Tstg</td>
<td>-55 to 150</td>
<td>°C</td>
</tr>
</tbody>
</table>

- **Internal Connection**

- **Pin Name**
  1. Gate
  2. Source
  3. Drain

- **Packaging**
  Embossed type (Thermo-compression sealing): 10 000 pcs / reel (standard)
**MOS FET**

**FK3306010L**

### Electrical Characteristics  \( Ta = 25 \, ^\circ C \pm 3 \, ^\circ C \)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbol</th>
<th>Conditions</th>
<th>Min</th>
<th>Typ</th>
<th>Max</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drain-source breakdown voltage</td>
<td>VDSS</td>
<td>ID = 1 mA, VGS = 0</td>
<td>60</td>
<td></td>
<td></td>
<td>V</td>
</tr>
<tr>
<td>Drain-source cutoff current</td>
<td>IDSS</td>
<td>VDS = 60 V, VGS = 0</td>
<td></td>
<td>1.0</td>
<td></td>
<td>μA</td>
</tr>
<tr>
<td>Gate-source cutoff current</td>
<td>IGSS</td>
<td>VGS = ±10 V, VDS = 0</td>
<td></td>
<td>±10</td>
<td></td>
<td>μA</td>
</tr>
<tr>
<td>Gate threshold voltage</td>
<td>VTH</td>
<td>ID = 1.0 μA, VDS = 3.0 V</td>
<td>0.9</td>
<td>1.2</td>
<td>1.5</td>
<td>V</td>
</tr>
<tr>
<td>Drain-source ON resistance</td>
<td>RDS(on)1</td>
<td>ID = 10 mA, VGS = 2.5 V</td>
<td>8</td>
<td>15</td>
<td></td>
<td>Ω</td>
</tr>
<tr>
<td></td>
<td>RDS(on)2</td>
<td>ID = 10 mA, VGS = 4.0 V</td>
<td>6</td>
<td>12</td>
<td></td>
<td>Ω</td>
</tr>
<tr>
<td>Forward transfer admittance</td>
<td>(</td>
<td>Yfs</td>
<td>)</td>
<td>ID = 10 mA, VDS = 3 V, f = 1 kHz</td>
<td>20</td>
<td>60</td>
</tr>
<tr>
<td>Input capacitance</td>
<td>Ciss</td>
<td></td>
<td>12</td>
<td></td>
<td></td>
<td>pF</td>
</tr>
<tr>
<td>Output capacitance</td>
<td>Coss</td>
<td>VDS = 3 V, VGS = 0, f = 1 MHz</td>
<td>7</td>
<td></td>
<td></td>
<td>pF</td>
</tr>
<tr>
<td>Reverse transfer capacitance</td>
<td>Crss</td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td>pF</td>
</tr>
<tr>
<td>Turn-on time (^1)</td>
<td>ton</td>
<td>VDD = 3 V, VGS = 0 to 3 V, RL = 300 Ω</td>
<td>100</td>
<td></td>
<td></td>
<td>ns</td>
</tr>
<tr>
<td>Turn-off time (^1)</td>
<td>toff</td>
<td>VDD = 3 V, VGS = 3 to 0 V, RL = 300 Ω</td>
<td>100</td>
<td></td>
<td></td>
<td>ns</td>
</tr>
</tbody>
</table>

**Note:**

1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 Measuring methods for transistors.
2. \(^1\) Turn-on and Turn-off test circuit
**MOS FET**

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**ID - VDS**

- Graph showing Drain Current (ID) vs. Drain-source Voltage (VDS) at different Gate-source Voltages (VGS):
  - VGS = 1.5 V
  - VGS = 2.0 V
  - VGS = 2.5 V
  - VGS = 4.0 V

**ID - VGS**

- Graph showing Drain Current (ID) vs. Gate-source Voltage (VGS) at different Temperatures (Ta):
  - Ta = 25 °C
  - Ta = 85 °C
  - Ta = -40 °C

**VDS - VGS**

- Graph showing Drain-source Voltage (VDS) vs. Gate-source Voltage (VGS) at different Drain Currents (ID):
  - ID = 5 mA
  - ID = 10 mA
  - ID = 20 mA

**RDS(on) - ID**

- Graph showing Drain-source On-state Resistance (RDS(on)) vs. Drain Current (ID) at different Gate-source Voltages (VGS):
  - VGS = 2.5 V
  - VGS = 4.0 V

**Capacitance - VDS**

- Graph showing Capacitance (C) vs. Drain-source Voltage (VDS) for different Capacitance parameters:
  - Ciss
  - Coss
  - Crss
**Product Standards**

- **Vth - Ta**
  - Gate-source Threshold Voltage $V_{th}$ (V)
  - Temperature (°C)

- **RDS(on) - Ta**
  - Drain-source On-resistance $R_{DS(on)}$ (Ω)
  - Temperature (°C)
  - $V_{GS} = 2.5 \text{ V}$
  - $4.0 \text{ V}$

- **PD - Ta**
  - Total Power Dissipation $P_D$ (W)
  - Temperature $T_a$ (°C)

- **Rth - tsw**
  - Thermal resistance $R_{th}$ (°C/W)
  - Pulse Width $t_{sw}$ (s)

- **Safe Operating Area**
  - Drain Current $I_D$ (A)
  - Drain-source Voltage $V_{DS}$ (V)
  - Operation in this area is limited by $R_{DS(on)}$
  - $T_a=25°C$, Glass epoxy board (25.4 × 25.4 × 0.8 mm) coated with copper foil, which has more than 300 mm².
SSSMini3-F2-B

Unit: mm

- 1.20 ± 0.05
- 0.30 ± 0.05
- 0.80 ± 0.05
- 0.20 ± 0.05
- 0.52 ± 0.03
- 0.45
- 0.35
- 1.15

- (5°)

Land Pattern (Reference) (Unit: mm)

- 0 to 0.05
- 0.20 ± 0.05
- 0.52 ± 0.03
- (5°)

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