**FK330307EL**

Silicon N-channel MOSFET

For switching circuits

- **Features**
  - Low drive voltage: 4.5 V drive
  - Halogen-free / RoHS compliant
    (EU RoHS / UL-94 V-0 / MSL: Level 1 compliant)

- **Marking Symbol:** X7

- **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 to Source Voltage</td>
<td>VDS</td>
<td>30</td>
<td>V</td>
</tr>
<tr>
<td>Gate to Source Voltage</td>
<td>VGS</td>
<td>±20</td>
<td>V</td>
</tr>
<tr>
<td>Drain Current</td>
<td>ID</td>
<td>100</td>
<td>mA</td>
</tr>
<tr>
<td>Drain Current (Pulsed) *1</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>Storage Temperature Range</td>
<td>Tstg</td>
<td>-55 to +150</td>
<td>°C</td>
</tr>
</tbody>
</table>

*Note* *1* Pulse test: Ensure that the channel temperature does not exceed 150 °C

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**Internal Connection**

1. Gate
2. Source
3. Drain

**Pin Name**

1. Gate
2. Source
3. Drain

**Packaging**

Embossed type (Thermo-compression sealing): 10 000 pcs / reel (standard)
### Electrical Characteristics Ta = 25 °C ± 3 °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 V</td>
<td>30</td>
<td></td>
<td></td>
<td>V</td>
</tr>
<tr>
<td>Zero Gate Voltage Drain Current</td>
<td>IDSS</td>
<td>VDS = 30 V, VGS = 0 V</td>
<td>10</td>
<td></td>
<td></td>
<td>µA</td>
</tr>
<tr>
<td>Gate-source Leakage Current</td>
<td>IGSS</td>
<td>VGS = ±16 V, VDS = 0 V</td>
<td>±10</td>
<td></td>
<td></td>
<td>µA</td>
</tr>
<tr>
<td>Gate-source Threshold Voltage</td>
<td>Vth</td>
<td>ID = 6.9 µA, VDS = 10 V</td>
<td>1</td>
<td></td>
<td>2.5</td>
<td>V</td>
</tr>
<tr>
<td>Drain-source On-state Resistance</td>
<td>RDS(on)1</td>
<td>ID = 10 mA, VGS = 10 V</td>
<td>1</td>
<td>1.4</td>
<td></td>
<td>Ω</td>
</tr>
<tr>
<td></td>
<td>RDS(on)2</td>
<td>ID = 10 mA, VGS = 4.5 V</td>
<td>1.5</td>
<td></td>
<td>2.3</td>
<td>Ω</td>
</tr>
<tr>
<td>Input Capacitance</td>
<td>Ciss</td>
<td>VDS = 10 V, VGS = 0 V</td>
<td></td>
<td></td>
<td>11</td>
<td>pF</td>
</tr>
<tr>
<td>Output Capacitance</td>
<td>Coss</td>
<td>VDS = 10 V, VGS = 0 V</td>
<td></td>
<td></td>
<td>7</td>
<td>pF</td>
</tr>
<tr>
<td>Reverse Transfer Capacitance</td>
<td>Crss</td>
<td></td>
<td></td>
<td></td>
<td>3.5</td>
<td>pF</td>
</tr>
</tbody>
</table>

Note: Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 Measuring methods for transistors.
**Technical Data (reference)**

**Dynamic Input/Output Characteristics**

- **ISD - VSD**
  - Ga = 85 °C
  - Body Diode Forward Voltage VSD (V) vs. Forward Drain Current ISD (A)

- **ID - VGS**
  - Ga = 85 °C
  - Gate-source Voltage VGS (V) vs. Drain Current ID (A)

- **RDS(on) - VGS**
  - Ga = 25 °C
  - Drain-source On-state Resistance RDS(on) (Ω) vs. Gate-source Voltage VGS (V)

- **RDS(on) - ID**
  - Ga = 10 V
  - Drain-source On-state Resistance RDS(on) (Ω) vs. Drain Current ID (A)

- **Capacitance - VDS**
  - Drain-source Voltage VDS (V) vs. Capacitance C (pF)

- **Dynamic Input/Output Characteristics**
  - Gate-source Voltage VGS (V) vs. Total Gate Charge Qg (nC)
  - VDD = 15 V

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**MOS FET**

**FK330307EL**

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**Panasonic**

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**Doc No.** TT4-EA-14544
**Revision.** 1

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**Established :** 2013-02-19
**Revised :** ####-##-##
MOS FET
FK330307EL

Technical Data (reference)

- **Vth - Ta**
  - Gate-source Threshold Voltage Vth (V)
  - Temperature Ta (°C)

- **RDS(on) - Ta**
  - Drain-source On-state Resistance RDS(on) (Ω)
  - Temperature Ta (°C)

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

- **Rth - tsw**
  - Thermal Resistance Rth (°C/W)
  - Pulse Width tsw (s)

- **Safe Operating Area**
  - Drain-source Voltage VDS (V)
  - Drain Current ID (A)
  - Operation in this area is limited by RDS(on)
  - Ta = 25 °C, Glass epoxy board (25.4 × 25.4 × 0.8 mm)
  - coated with copper foil, which has more than 300 mm²

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Revised: ####-##-##
SSSMIni3-F2-B

Unit : mm

■ Land Pattern (Reference) (Unit : mm)
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