Electrical Characteristics

Sensitivity
Symbol: $S$  Unit: dB
Condition: $0dB=1V/Pa$ at 1kHz
Limits: Min: -45  Center: -42  Max: -39

Output impedance
Symbol: $Z_{out}$  Unit: $K\Omega$
Condition: $f=1kHz$
Limits: Max: 5.5

Current Consumption
Symbol: $I_{DSS}$  Unit: $\mu A$
Condition: $V_{CC}=2.0V, RL=2.2K\Omega$
Limits: Max: 500

Signal to Noise Ratio
Symbol: $S/N$  Unit: dB
Condition: at $1kHz$ $S.P.L=1Pa$ (A-Weighted Curve)
Limits: Min: 55

Decreasing Voltage
Symbol: $\Delta S-VS$  Unit: dB
Condition: $V_{CC}=3.0V$ to $2.0V$
Limits: Max: -3

Operating Voltage
Unit: $V$
Condition: $THD<3\%$, at $1kHz$
Limits: Min: 1.4  Max: 5.0

Maximum input S.P.L
Unit: dB
Condition: $THD<3\%$ at $1kHz$
Limits: Max: 110

Dimension
$\varnothing$ 3.0x1.5mm

IP Level
IP50
**EM ELECTRET CONDENSER MICROPHONE**

Acoustic Product Specification

Product No: EM-3015

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**Typical Frequency Response Curve**

**Frequency Response**

<table>
<thead>
<tr>
<th>Frequency (Hz)</th>
<th>Lower Limit (dB)</th>
<th>Upper Limit (dB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>-6</td>
<td>+3</td>
</tr>
<tr>
<td>800</td>
<td>-3</td>
<td>+3</td>
</tr>
<tr>
<td>1000</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1200</td>
<td>-3</td>
<td>+3</td>
</tr>
<tr>
<td>3000</td>
<td>-3</td>
<td>+5</td>
</tr>
<tr>
<td>5000</td>
<td>-5</td>
<td>+5</td>
</tr>
<tr>
<td>10000</td>
<td>-8</td>
<td>+8</td>
</tr>
</tbody>
</table>

**Measurement Circuit**

\[ RL = 2.2 \Omega \quad Vs = 2.0V \quad C1 = 10pF \quad C = 1\mu F \]
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Release | Revision: A/2018

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No. Part Name Material Quantity
1 Felt
2 Case Copper 1
3 Polarized Diaphragm 1
4 Spacer 1
5 Housing Chamber 1
6 Copper Ring 1
7 PCB FR-4 1
8 FET Built in 10pF 1
9 Electret Back 1
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Temperature Conditions

Operating Temperature Range
-40°C → +85°C

Storage Temperature Range
-40°C → +85°C

Reliability Test

After each of following test, the sensitivity of the microphone should be within ±3dB of initial sensitivity after 3 hours of conditioning at 20°C.

Vibration Test
Frequency: 10Hz–55Hz
Amplitude: 1.52mm
Change of Frequency: 1 octave/min
2 hours in each of axis

High Temperature Test
+85°C for 240 hours.

Low Temperature Test
-40°C for 240 hours.

Humidity Test
90%～95%RH, +60°C for 240 hours.

Thermal Shock Test
-40°C, 30 minutes ↔ +80°C, 30 minutes, repeated 32 cycles → room temperature, 3 hours.

Temperature Cycles
-40°C ↔ +20°C ↔ +85°C ↔ +20°C ↔ -40°C
(2h) (0.5h) (2h) (0.5h) (2h) (0.5h) (2h) (0.5h) (2h) for 5 cycles.

Packing Drop Test
Height: 1.5m
Procedure: 5 times from each of axis

Electrostatic discharge
Tested to IEC61000-4-2 level 3:

a) Contact Discharge: The microphone shall operate normally after 10 discharges to 6KV DC and the discharge network is 150pF and 330Ω.

b) Air Discharge: The microphone shall operate normally after 10 discharges to 8KV DC and the discharge network is 150pF and 330Ω.

Release | Revision: A/2018
Soldering Condition

We suggest using anti-static welding machine which can control soldering temperature automatically.

Soldering temperature should be controlled under 320°C and soldering time for each terminal should be 1~2 seconds.

Microphone should be fixed on the metal block (heat sink), which has high radiation effects, and heat sink shall contact with MIC tightly.

Microphone may easily be destroyed by the static electricity. The countermeasure for eliminating the static electricity shall be by grounding the worktable and operator.

Heat Sink

Shape of heat sink

Shape of hole at fixed part
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Details

Dimension: (length x width x height) unit:mm

Anti-Static Bag:
80 x 80 x 3mm
Small Packet:
85 x 85 x 10mm
Middle Box:
170 x 85 x 50mm
Carton Size:
550 x 230 x 235mm

Quantity and Weight

Small Box: 100 pcs
Middle Box: 1,000 pcs
Carton: 30,000 pcs
1PC: 0.1g
Net Weight: 3.0kg
Gross Weight: 6.0kg

Packing

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