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[Rohm Semiconductor](#)
[SML-412MWT86](#)

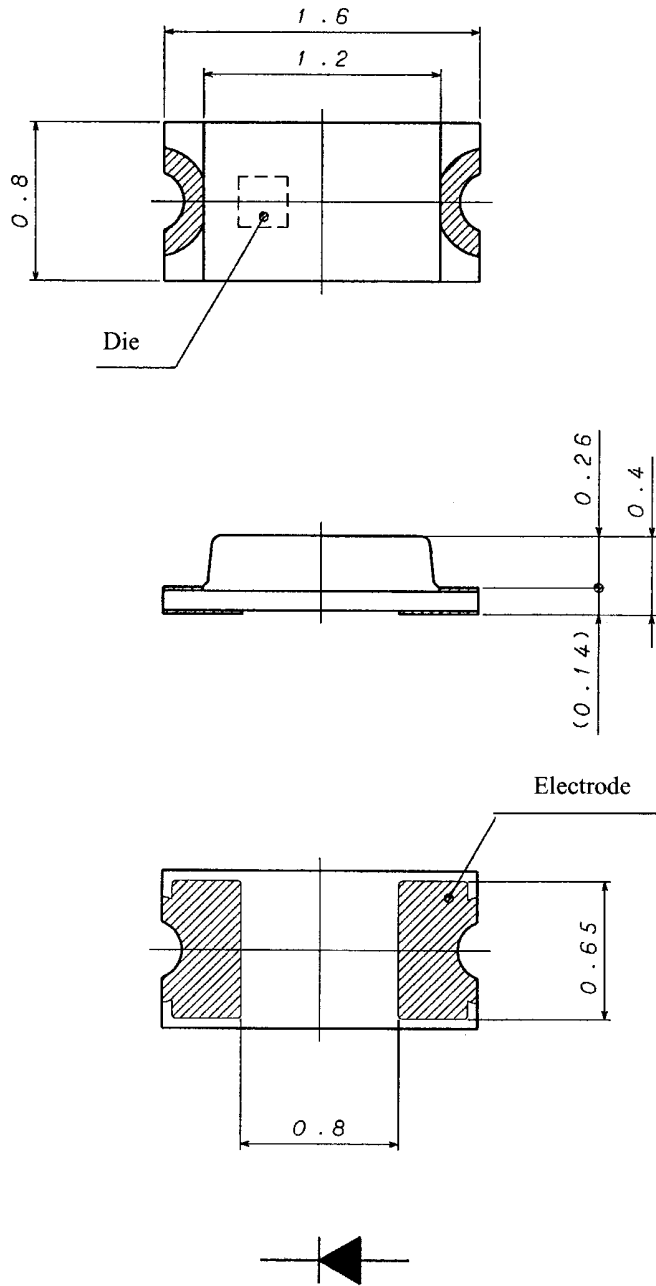
For any questions, you can email us directly:

sales@integrated-circuit.com

| ROHM | PRODUCTS Surface Mount Chip LED | TYPE SML-412MW | PAGE / | | | |
|--|---------------------------------------|---|-------------------------------|------|------|-------|
| 1. CONSTRUCTION | | AlGaInP on GaAs green surface mount LEDs package with diffused epoxy. | | | | |
| 2. USAGE | | Source of light for display unit. | | | | |
| 3. DIMENSIONS | | See Figure.1 | | | | |
| 10. ABSOLUTE MAXIMUM RATINGS (Ta=25°C) | | | | | | |
| Power Dissipation | P D | 65mW | | | | |
| Forward Current | I F | 25mA | | | | |
| Peak Forward Current | I F P | 60mA (Notes 1) | | | | |
| Reverse Voltage | V R | 4V | | | | |
| Operating Temperature | Topr | -30°C~+85°C | | | | |
| Storage Temperature | Tstg | 40°C~+85°C | | | | |
| (Notes1 Duty 1/5 Pulse Width 1ms) | | | | | | |
| 11. ELECTRO-CHARACTERISTICS (Ta=25°C) | | | | | | |
| DISCRIPTION | SYMBOL | CONDITION | MIN. | TYP. | MAX. | UNITS |
| Luminous Intensity | IV | IF=20mA | 14 | 40 | — | mcd |
| Forward Voltage | VF | IF=20mA | — | 2.1 | 2.6 | V |
| Reverse Current | IR | VR=4V | — | — | 100 | μA |
| Peak Wave Length | λ P | IF=20mA | — | 570 | — | nm |
| Spectral Line Half Width*2 | Δ λ | IF=20mA | — | 18 | — | nm |
| 12. LUMINOUS CLASSIFICATION (Ta=25°C, IF=20mA) | | | | | | |
| SYMBOL | LUMINOUS CLASSIFICATION RANGE | | | | | |
| “N” | 14 | ~ | 28 | mcd | | |
| “P” | 22 | ~ | 45 | mcd | | |
| “Q” | 36 | ~ | 71 | mcd | | |
| 7. PRODUCT WEIGHT | | Product weight per piece, approx 0.001gm. | | | | |
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| | PRODUCTS Surface Mount Chip LED | TYPE SML-41 * Series | PAGE / |
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【Figure.1】



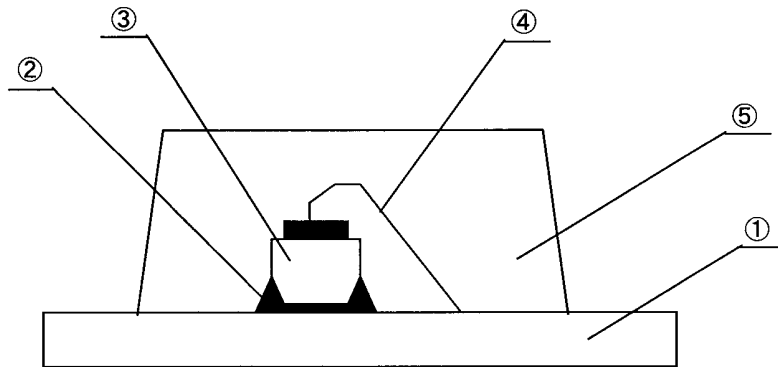
(Unit : mm)

(Note) Tolerance is within ± 0.1 mm unless otherwise specified.

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【STRUCTURE · MATERIAL】



| No. | APPELLATION | MATERIAL |
|-----|----------------------|---|
| 1 | Printed Wiring Board | BT Resin, Glass Fabric |
| 2 | Die Bond | Ag Paste |
| 3 | Chip | 410 : GaP 411, 412 : AlGaInP on GaAs |
| 4 | Bonding Wire | Gold |
| 5 | Resin | Epoxy Resin |

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| <p>【T86】</p> <p>Technical drawing showing dimensions for the SML-41 * Series LED. The drawing includes a top view, a side view, and a reel view. Dimensions are provided in millimeters (mm).</p> <p>Top View Dimensions:</p> <ul style="list-style-type: none"> Overall width: 4 ± 0.1 Distance between LED centers: 2 ± 0.05 LED diameter: $\phi 1.5 \pm 0.1$ Distance from LED center to mounting pad center: 1.75 ± 0.1 Mounting pad width: 1.85 Mounting pad height: 5.5 Distance from LED center to mounting pad edge: 3.5 ± 0.05 Mounting pad thickness: 0.95 Distance from LED center to mounting pad edge (bottom): $0 \sim 0.5$ Mounting pad offset: 0.5 <p>Side View Dimensions:</p> <ul style="list-style-type: none"> Overall height: 8.0 Mounting pad height: 5.5 Mounting pad thickness: 0.95 Mounting pad offset: 0.5 <p>Reel View Dimensions:</p> <ul style="list-style-type: none"> Reel diameter: 11.4 ± 1 Reel thickness: $\phi 13$ Reel hole diameter: $\phi 60 \pm 1$ Reel hole depth: $\phi 180 \sim 3$ <p>Packing quantity 5000pcs / reel</p> <p>Pull direction</p> <p>(Unit : mm)</p> <p>(Note) Tolerance is within $\pm 0.2\text{mm}$ unless otherwise specified</p> | | | |
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| | PRODUCTS Surface Mount Chip LED | TYPE SML-41 * Series | PAGE / | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--|--------------------------------|-----------|-----|-----|-----------|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| <p>【PACKAGING REQUIREMENTS】</p> <p><u>1. PACKING</u></p> <ol style="list-style-type: none"> (1) 5000pcs are packed in one reel. (2) One reel is packed in aluminum bag. The size of aluminum bag is 240(a) × 250(b)mm. The size up to 230(c)mm is to zipper. (3) Aluminum bag is sealed by pressured for all directions. <div data-bbox="1082 376 1420 600" style="text-align: right;"> </div> <p><u>2. MARKING</u></p> <p>The following information shall be described on a box label: ROHM Type number, Packing quantity, Luminous intensity rank, Lot number.</p> <p>【FORMER LABEL SPECIFICATION】</p> <div data-bbox="359 828 1364 1355" style="text-align: center;"> <p style="text-align: center;">Type No. Luminous Intensity Rank</p> <p style="text-align: center;">S M L - 4 1 0 M W T 8 6 N</p> <p style="text-align: center;">5,000 p c s 0 2 0 3 0 0 0 1 2 W</p> <p style="text-align: center;">Excellence in Electronics ROHM</p> <p style="text-align: center;">Country of origin</p> <p>Customers part No. etc.</p> <p>Quantity, Then Lot No. Displayed.</p> </div> <p>Note) Indicates bar code expressed by code 39.</p> <p>【EXAMPLE OF LOT NO. MARKING】</p> <div data-bbox="462 1534 1165 1870" style="text-align: center;"> <table style="border-collapse: collapse; margin: auto;"> <tr> <td style="border-bottom: 1px solid black; padding: 5px;">0 2</td> <td style="border-bottom: 1px solid black; padding: 5px;">0 3</td> <td style="border-bottom: 1px solid black; padding: 5px;">0 0 0 1 2</td> <td style="border-bottom: 1px solid black; padding: 5px;">W</td> </tr> <tr> <td colspan="2" style="border-right: 1px solid black; height: 20px;"></td> <td colspan="2" style="border-right: 1px solid black; height: 20px;"></td> </tr> <tr> <td colspan="2" style="border-right: 1px solid black; height: 20px;"></td> <td colspan="2" style="border-right: 1px solid black; height: 20px;"></td> </tr> <tr> <td colspan="2" style="border-right: 1px solid black; height: 20px;"></td> <td colspan="2" style="border-right: 1px solid black; height: 20px;"></td> </tr> <tr> <td colspan="2" style="border-right: 1px solid black; height: 20px;"></td> <td colspan="2" style="border-right: 1px solid black; height: 20px;"></td> </tr> <tr> <td colspan="2" style="border-right: 1px solid black; height: 20px;"></td> <td colspan="2" style="border-right: 1px solid black; height: 20px;"></td> </tr> </table> <p style="text-align: right; margin-right: 50px;">Production facility sign (Reference the manufactory list)</p> <p style="text-align: right; margin-right: 100px;">Serial number of lot</p> <p style="text-align: right; margin-right: 150px;">Production week</p> <p style="text-align: right; margin-right: 200px;">Production year</p> </div> | | | | 0 2 | 0 3 | 0 0 0 1 2 | W | | | | | | | | | | | | | | | | | | | | |
| 0 2 | 0 3 | 0 0 0 1 2 | W | | | | | | | | | | | | | | | | | | | | | | | | |
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| | PRODUCTS Surface Mount Chip LED | TYPE SML-41 * Series | PAGE / |
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| [ATTENTION POINT IN HANDING] | | | |
| <p>This product was developed as a surface mount LED especially suitable for soldering. Please take care of following points when using this device.</p> | | | |
| <p>1. DESIGNING OF PCB As for a recommendable solder pattern, Please refer to Fig-1. The size and direction of the pad pattern depends on the condition of the PCB, So, please investigate about the adjustment thoroughly before designing.</p> | <p>(Fig-1)</p> | | |
| <p>2. SOLDERING (Sn-Pb) LED products do not contain reinforcement materials such as glass fillers. Therefore, thermal stress by soldering greatly influence its reliability. The temperature conditions for reflow soldering should therefore be set up according to the characteristic of this product. (See Fig-2) Number of reflow process shall be max 2 times and these processes shall be performed in a row. Cooling process to normal temperature shall be required between first and second soldering process.</p> | | | |
| <p>3. HANDING AFTER MOUNTING As shown right drawing, in case outside force of around 700g is given to the device, stress is concentrated to the jointed part between mold resin and substrate. Therefore there is a possibility to breath the device or PCB. Careful handing is needed as ROHM cannot guarantee the falling of the device by outside force after mounting.</p> | | | |
| <p>4. WASHING Please note the following points when washing is required after soldering.</p> <p>4-1) WASHING SOLVENT Isopropyl alcohol or other alcohol solvent is recommendable.</p> <p>4-2) TEMPERATURE Below 30°C, immersion time ; within 3 minutes.</p> <p>4-3) ULTRA SONIC WASHING Below 15 / 1 liter of solvent tub.</p> <p>4-4) CULING Below 100°C within 3 minutes.</p> | | | |
| <p>5. STRAGE At reflow soldering, the reliability of this product is often influenced by moisture absorption so we apply the packaging with moisture proof for better condition is use, please also note that</p> <p>5-1) Not to be opened before using.</p> <p>5-2) To be kept in our moisture proof packaging with some desiccant (SILICA GEL) after opening it. To be baked in case the SILICA GEL indicator loses its blue color.</p> <p>5-3) Please use within 168 hours after the package was opened. (Condition at 30°C, max.70%Rh.) In case it is not used within 168 hours, please put it back into our packaging.</p> <p>5-4) BAKING Please bake under reel condition at 60°C, 12~24 hours (max.20%Rh) after un-sealing. While baking is done, the reel and emboss tape may be easily deformed. Please be careful not to give any stress.</p> | | | |
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| ROHM | PRODUCTS Surface Mount Chip LED | TYPE SML Series | PAGE / | | | | | | | | |
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| <p>【MANUFACTORY】</p> <table border="1" style="width: 100%; border-collapse: collapse; margin: 10px auto;"> <thead> <tr> <th style="width: 80%;">FACTORY</th> <th style="width: 20%;">SYMBOL</th> </tr> </thead> <tbody> <tr> <td>ROHM WAKO CO.,LTD. (KASAOKA CITY, OKAYAMA PREF.JAPAN)</td> <td style="text-align: center;">W</td> </tr> <tr> <td>ROHM-WAKO ELECTRONICS (MALAYSIA) SDN.BHD. (MALAYSIA)</td> <td style="text-align: center;">D</td> </tr> <tr> <td>ROHM ELECTRONICS WAKO (TIANJIN) CO.,LTD. (TIANJIN. CHAINA)</td> <td style="text-align: center;">N</td> </tr> </tbody> </table> | | | | FACTORY | SYMBOL | ROHM WAKO CO.,LTD. (KASAOKA CITY, OKAYAMA PREF.JAPAN) | W | ROHM-WAKO ELECTRONICS (MALAYSIA) SDN.BHD. (MALAYSIA) | D | ROHM ELECTRONICS WAKO (TIANJIN) CO.,LTD. (TIANJIN. CHAINA) | N |
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