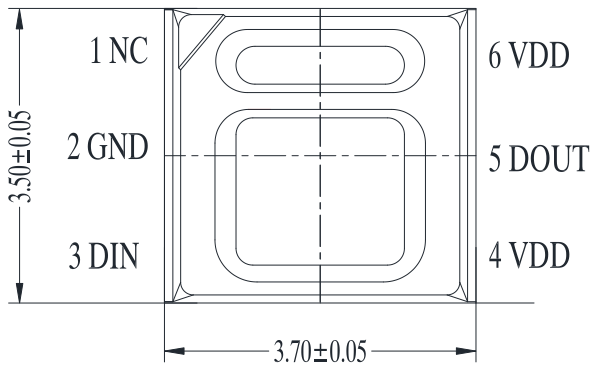
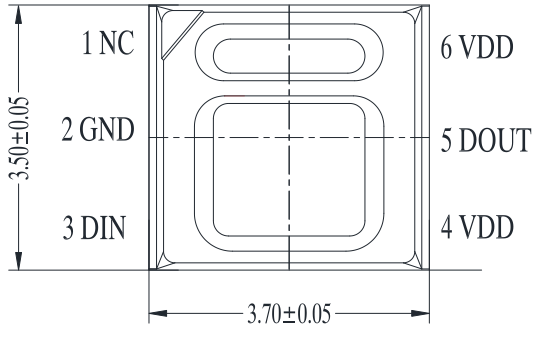
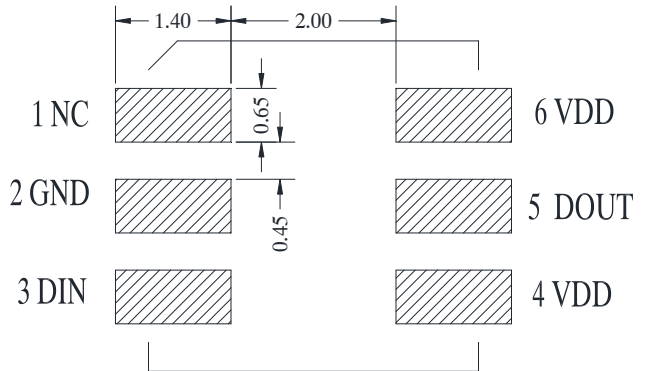
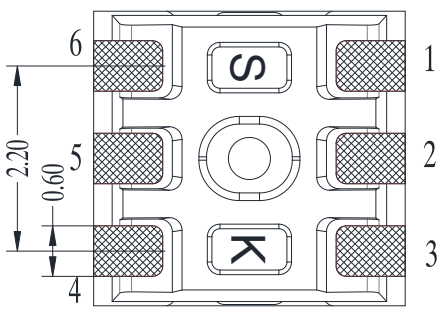


SPECIFICATION **CSPM1411RGBW-IC-6**
PACKAGE OUTLINES

BOTTOM VIEW


| Item | Symbol | Pin Name | Function description |
|------|--------|-------------|---|
| 1 | NC | NC | NC |
| 2 | GND | Ground | The signal and power supply and grounding |
| 3 | DIN | Data Input | control signal input data |
| 4/6 | VDD | Power | power supply pin |
| 5 | DOUT | Data Output | control signal output data |

Notes:
 1. All dimensions are in millimeters (inches).
 2. Tolerance is $\pm 0.25\text{mm}$ (0.01") unless otherwise noted.
 3. Specifications are subject to change without notice.

| Part Number | Chip Material | Color of Emission | Lens Type | Internal |
|-------------------|---------------|-------------------|-------------|----------|
| CSPM1411RGBW-IC-6 | InGaAlP/InGaN | RGBW | Water Clear | IC |



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ABSOLUTE MAXIMUM RATINGS
(TA=25°C)

| Parameter | Symbol | Max Rating | Unit |
|----------------------|--------|----------------|------|
| Power Supply Voltage | VDD | +3.7 ~ +5.5 | V |
| Input Voltage | VIN | -0.5 ~ VDD+0.5 | V |

OPTICAL-ELECTRICAL CHARACTERISTICS
(TA=25°C)

| Parameter | Sym- bol | Test Condition | Value | | | Unit |
|---------------------|-----------------|-------------------------|-------|-----|------|------|
| | | | Min | Typ | Max | |
| Input Current | I _I | V _I =VDD/VSS | - | - | ±1 | μA |
| Input Voltage Level | V _{IH} | DIN, SET | 0.7 | - | - | V |
| Input Voltage Level | V _{IL} | DIN, SET | - | - | 0.3V | V |

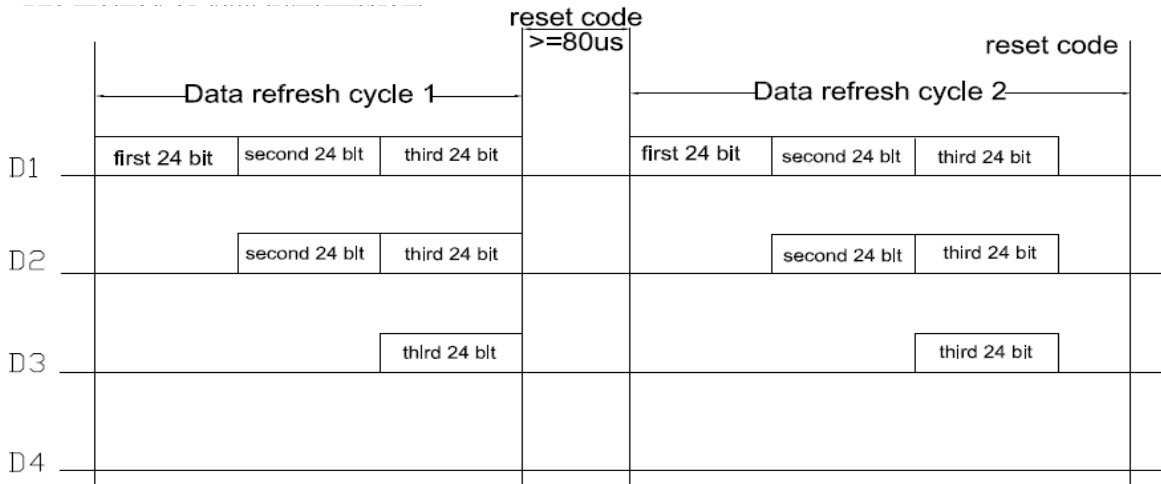
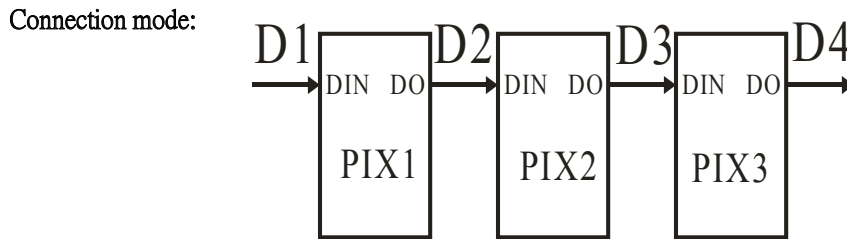
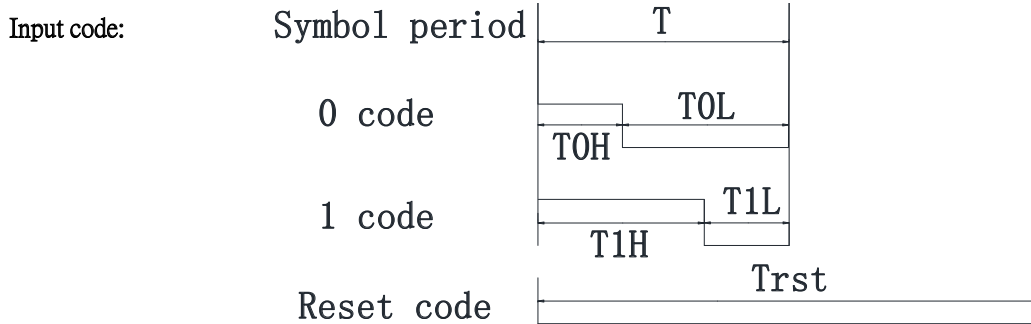
SWITCHING CHARACTERISTICS
(TA=25°C)

| Parameter | Symbol | Test Condition | Value | | | Unit |
|------------------------|------------------|--|-------|-----|-----|------|
| | | | Min | Typ | Max | |
| Speed Of Data Transmit | F _{DIN} | Duty Ratio of 67% | - | 800 | - | khz |
| Transmission Delay | t _{PLH} | DIN => DOUT | - | - | 500 | ns |
| | t _{PHL} | | - | - | 500 | ns |
| Rise/Drop Time | t _R | V _{DS} = 1.5 I _{OUT R/G/B} = 9MA I _{OUT W} = 18MA | - | 100 | - | ns |
| | t _F | | - | 100 | 15 | ns |



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DATA TRANSMISSION METHOD



Note: the D1 sends data for MCU, D2, D3, D4 for data forwarding automatic shaping cascade circuit.

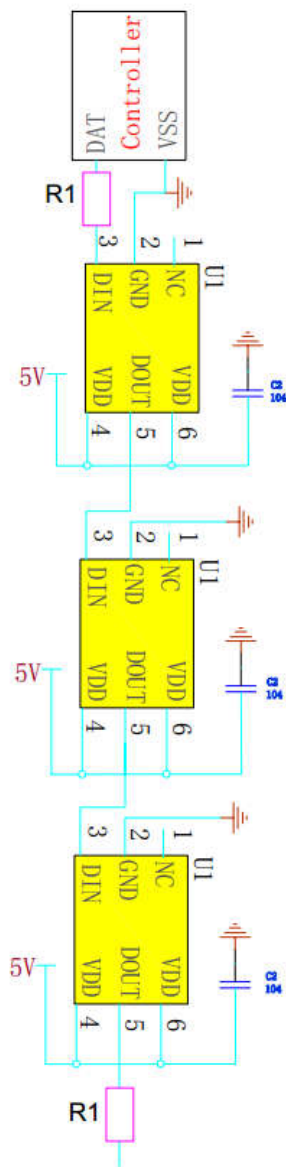


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DATA TRANSMISSION METHOD

| | | | | | | | | | | | |
|----|----|----|----|----|----|----|----|----|----|----|----|
| G7 | G6 | G5 | G4 | G3 | G2 | G1 | G0 | R7 | R6 | R5 | R4 |
| R3 | R2 | R1 | R0 | B7 | B6 | B5 | B4 | B3 | B2 | B1 | B0 |
| W7 | W6 | W5 | W4 | W3 | W2 | W1 | W0 | | | | |

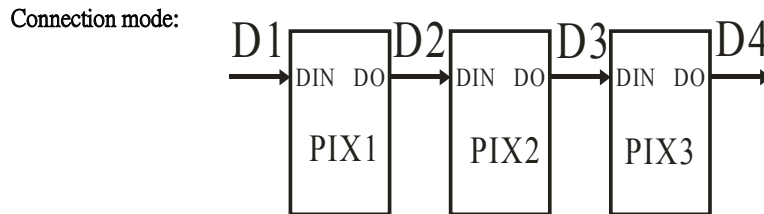
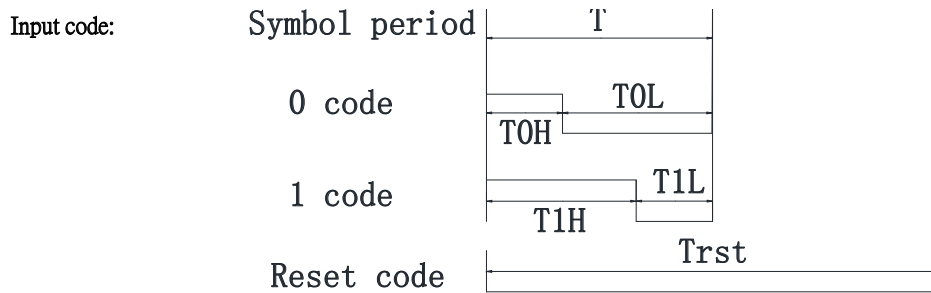
Note: high starting, in order to send data (G7 - G6 -B0)



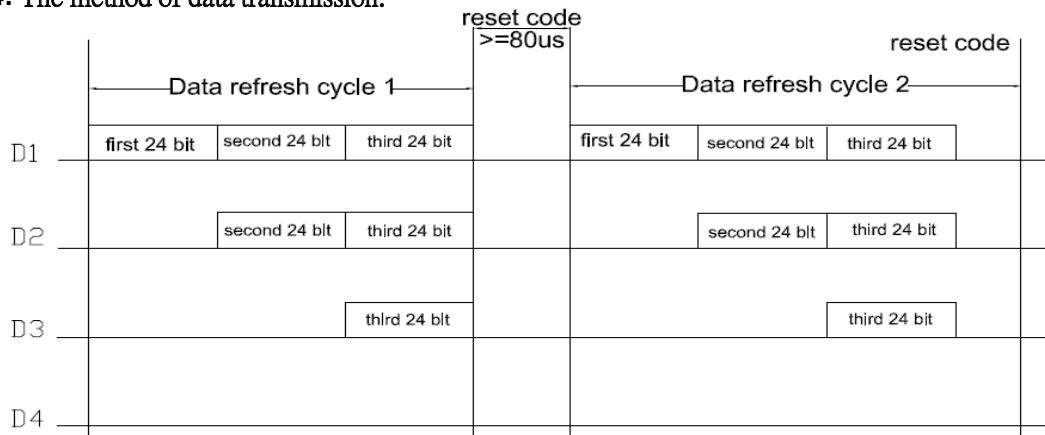
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LED CHARACTERISTICS

| Parameter | Symbol | Test Condition | Color | Value | | | Unit |
|---------------------|--------|----------------|-------|-------|------|-------|------|
| | | | | Min | Typ | Max | |
| Luminous Intensity | IV | IF = 9mA | Red | 400 | 700 | - | mcd |
| | | | Green | 1000 | 1500 | - | |
| | | | Blue | 200 | 400 | - | |
| | | IF = 18mA | White | 1500 | 2200 | - | |
| Dominant Wavelength | λD | IF = 9mA | Red | 620 | - | 625 | nm |
| | | | Green | 520 | - | 530 | |
| | | | Blue | 460 | - | 470 | |
| | | IF = 18mA | White | 5500 | | 10000 | k |



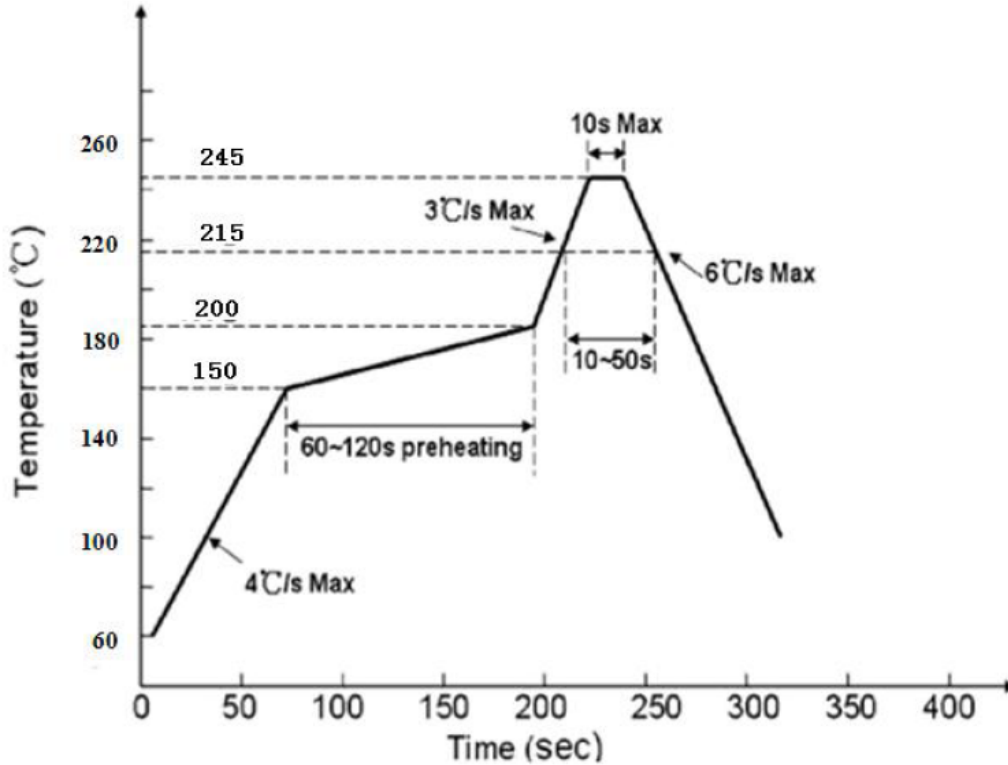
14. The method of data transmission:



Note: the D1 sends data for MCU. D2. D3. D4 for data forwarding automatic shapina cascade circuit.



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SOLDERING CONDITIONS
LEAD-FREE REFLOW (SMT Line)


| Curve Description | Lead-Free Reflow Solder/SMT |
|---|-----------------------------|
| The lowest Preheat Temperature (T _{sm}) | 150°C |
| The highest Preheat Temperature (T _{sm}) | 200°C |
| Preheat Time (T _{sm} to T _{sm}) (ts) | 60-180 seconds |
| Average Rate of Temperature Rise (T _{sm} to T _p) | < 3°C/seconds |
| Liquid Region Temperature (TL) | 217°C |
| Liquid Region Holding Time (tL) | 60-150 seconds |
| Peak Temperature (T _p) | 245°C |
| High Temperature Region (T _p - 5°C) Holding Time (tp) | < 10 seconds |
| Cooling Rate | < 6°C/seconds |
| Room Temperature to Peak Holding Time | < 6 minutes |

Notes:

1. This has to be baked for 48 hours at the baking temperature of 70-75°C before being used.
2. Use up with 2 hours after taking out from oven.
3. Please replace the unused LEDs into oven.



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