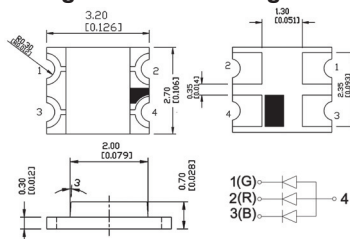


# Dialight

## Micro LED® SMD LED “598 SERIES” 1210 PACKAGE (3.2mm X 2.7mm X 0.7mm) Tri-Color



Package Outline Drawing:



Notes 1. All dimensions are in mm [inches];  
2. Tolerances are  $\pm 0.1\text{mm}$  [0.004inch] unless noted.

### FEATURES / BENEFITS

- ▲ Compatible with automatic placement equipment
- ▲ RoHS compliant
- ▲ Packaged in 8mm tape, 7" reel and 20 per strip
- ▲ Meets EIA-481-1 pkg. std.

### ORDERING INFORMATION

5 9 8 - 8 6 1 0 - 3 0 **7** F

Packaging Option

|   |                        |
|---|------------------------|
| 2 | 20 pieces on tape      |
| 7 | 7" reel 3000pcs / reel |

### PART NUMBERS

| Dialight P/N  | EMITTED COLOR | MATERIAL | LENS COLOR  | LUMINOUS INTENSITY |     |     | DOMINANT WAVELENGTH |     |     | FORWARD VOLTAGE |     |     | VIEWING ANGLE<br>° DEGREES | PINOUT      |
|---------------|---------------|----------|-------------|--------------------|-----|-----|---------------------|-----|-----|-----------------|-----|-----|----------------------------|-------------|
|               |               |          |             | If = 20 ma         |     |     | If = 20 ma          |     |     | If = 20 ma      |     |     |                            |             |
|               |               |          |             | MIN                | TYP | MAX | MIN                 | TYP | MAX | MIN             | TYP | MAX |                            |             |
| 598-8610-307F | RED           | AlInGaP  | Water Clear | 40                 | 60  | 80  | 630                 | 635 | 645 | 1.9             | 2   | 2.2 | 140                        | SEE EXAMPLE |
|               | GREEN         | InGaP    | Water Clear | 90                 | 120 | 220 | 520                 | 525 | 530 | 2.8             | 3.2 | 3.5 | 140                        |             |
|               | BLUE          | InGaP    | Water Clear | 60                 | 90  | 140 | 465                 | 470 | 475 | 2.8             | 3.2 | 3.5 | 140                        |             |
| 598-8920-307F | RED-ORANGE    | AlInGaP  | Water Clear | 90                 | 120 | 150 | 620                 | 625 | 630 | 1.9             | 2   | 2.2 | 140                        |             |
|               | GREEN         | InGaP    | Water Clear | 90                 | 150 | 220 | 520                 | 525 | 530 | 3               | 3.2 | 3.5 | 140                        |             |
|               | BLUE          | InGaP    | Water Clear | 30                 | 60  | 90  | 465                 | 470 | 475 | 3               | 3.2 | 3.5 | 140                        |             |
| 598-9920-307F | RED-ORANGE    | AlInGaP  | Diffused    | 40                 | 60  | 80  | 620                 | 625 | 630 | 1.8             | 2.2 | 2.4 | 140                        |             |
|               | GREEN         | InGaP    | Diffused    | 80                 | 100 | 150 | 520                 | 525 | 530 | 3               | 3.2 | 3.5 | 140                        |             |
|               | BLUE          | InGaP    | Diffused    | 30                 | 40  | 60  | 465                 | 470 | 475 | 3               | 3.2 | 3.5 | 140                        |             |
| 598-8930-307F | ORANGE        | AlInGaP  | Water Clear | 70                 | 120 | 150 | 600                 | 605 | 610 | 1.8             | 2.2 | 2.4 | 140                        |             |
|               | GREEN         | InGaP    | Water Clear | 150                | 220 | 300 | 520                 | 525 | 530 | 2.8             | 3.2 | 3.5 | 140                        |             |
|               | BLUE          | InGaP    | Water Clear | 60                 | 90  | 140 | 465                 | 470 | 475 | 2.8             | 3.2 | 3.5 | 140                        |             |
| 598-8940-307F | YELLOW        | AlInGaP  | Water Clear | 90                 | 110 | 150 | 587                 | 590 | 592 | 1.8             | 2.2 | 2.4 | 140                        |             |
|               | GREEN         | InGaP    | Water Clear | 150                | 220 | 300 | 520                 | 525 | 530 | 2.8             | 3.2 | 3.5 | 140                        |             |
|               | BLUE          | InGaP    | Water Clear | 60                 | 90  | 140 | 465                 | 470 | 475 | 2.8             | 3.2 | 3.5 | 140                        |             |

### ABSOLUTE RATINGS (@ Ta = 25°C)

| Dialight P/N  | Power Dissipation | Forward Current | Reverse Voltage | Operating Temperature Range | Storage Temperature Range | Peak Pulse Forward Current | Electrostatic Discharge |
|---------------|-------------------|-----------------|-----------------|-----------------------------|---------------------------|----------------------------|-------------------------|
|               | (mW)              | (mA)            | (V)             | (°C)                        | (°C)                      | (mA)                       | (HBM)                   |
| 598-8610-307F | 44                | 20              | 5               | -40~+100                    | -40~+100                  | 100                        | 2000                    |
|               | 70                | 20              | 5               | -40~+100                    | -40~+100                  | 100                        | 2000                    |
|               | 70                | 20              | 5               | -40~+100                    | -40~+100                  | 100                        | 2000                    |
| 598-8920-307F | 44                | 20              | 5               | -40~+100                    | -40~+100                  | 100                        | 2000                    |
|               | 70                | 20              | 5               | -40~+100                    | -40~+100                  | 100                        | 2000                    |
|               | 70                | 20              | 5               | -40~+100                    | -40~+100                  | 100                        | 2000                    |
| 598-9920-307F | 44                | 20              | 5               | -40~+100                    | -40~+100                  | 100                        | 2000                    |
|               | 70                | 20              | 5               | -40~+100                    | -40~+100                  | 100                        | 2000                    |
|               | 70                | 20              | 5               | -40~+100                    | -40~+100                  | 100                        | 2000                    |
| 598-8930-307F | 48                | 20              | 5               | -40~+100                    | -40~+100                  | 100                        | 2000                    |
|               | 70                | 20              | 5               | -40~+100                    | -40~+100                  | 100                        | 2000                    |
|               | 70                | 20              | 5               | -40~+100                    | -40~+100                  | 100                        | 2000                    |
| 598-8940-307F | 48                | 20              | 5               | -40~+100                    | -40~+100                  | 100                        | 2000                    |
|               | 70                | 20              | 5               | -40~+100                    | -40~+100                  | 100                        | 2000                    |
|               | 70                | 20              | 5               | -40~+100                    | -40~+100                  | 100                        | 2000                    |



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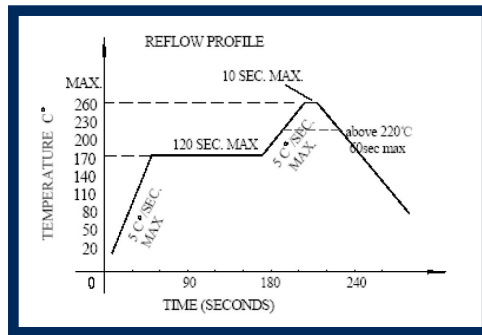
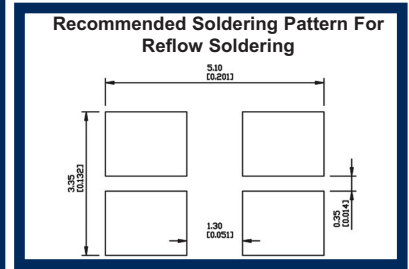
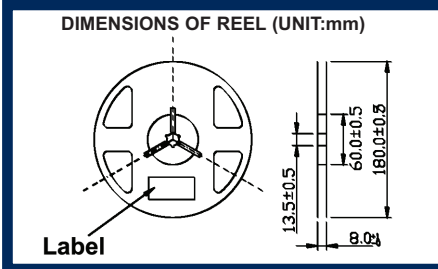
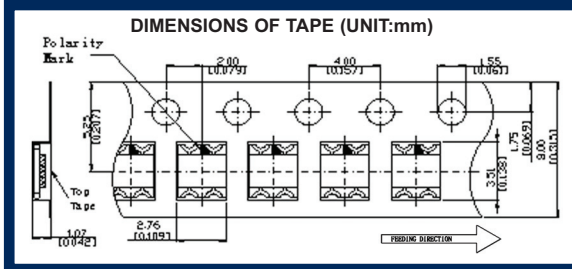
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### MECHANICAL DIMENSIONS

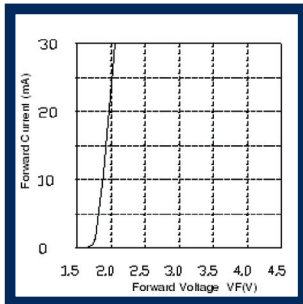


| REFLOW SOLDERING | HAND SOLDERING                |
|------------------|-------------------------------|
| Pre-heat         | 160~180°C                     |
| Pre-heat time    | 120 seconds Max.              |
| Peak temperature | 260°C Max.                    |
| Soldering time   | 10 seconds Max.               |
| Condition        | Refer to temperature -profile |

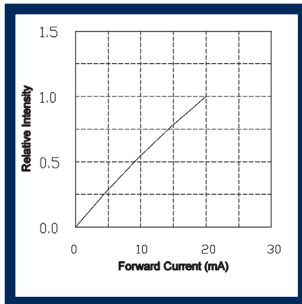
### OPTICAL AND ELECTRICAL CHARACTERISTICS CURVES

RED 630-642NM, RED-ORANGE 620-630NM, ORANGE 600-610NM, YELLOW 590-595NM, YELLOW 583-590NM, YELLOW GREEN 570-575NM, GREEN 562-570NM

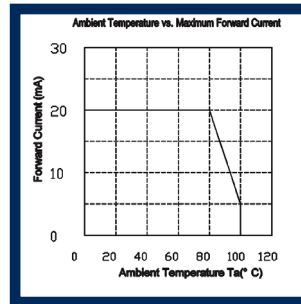
FORWARD VOLTAGE VS FORWARD CURRENT (Ta=25°C)



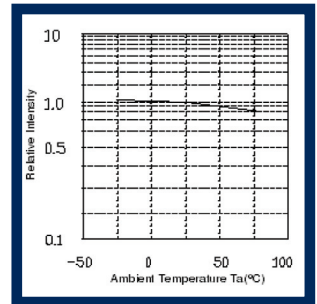
RELATIVE INTENSITY VS FORWARD CURRENT (Ta=25°C)



DERATING

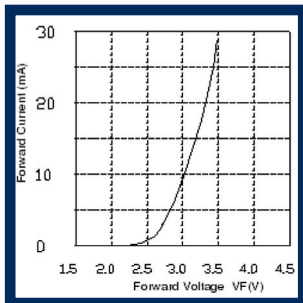


RELATIVE INTENSITY VS AMBIENT TEMPERATURE

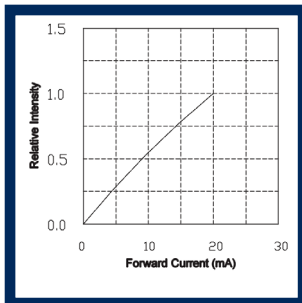


GREEN 520-525NM, BLUE 470-475NM

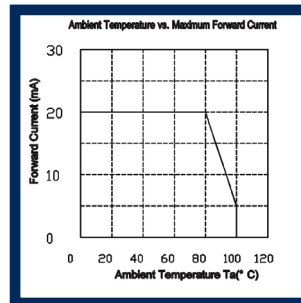
FORWARD VOLTAGE VS FORWARD CURRENT (Ta=25°C)



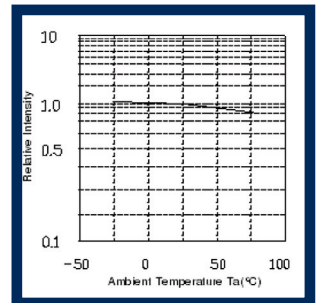
RELATIVE INTENSITY VS FORWARD CURRENT (Ta=25°C)



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RELATIVE INTENSITY VS AMBIENT TEMPERATURE



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