



Device Selection Guide

| Model Number | Chip | | Description |
|--------------|----------|----------------|-----------------------------------|
| | Material | Emitting Color | |
| PDC39-CxDG05 | InGaN | True Green | Common Anode or Common Cathode |
| PDC39-CxDG17 | AlInGaP | Yellow Green | |
| PDC39-CxDY04 | | Yellow | |
| PDC39-CxDA11 | | Amber | |
| PDC39-CxDR02 | | Orange-Red | |
| PDC39-CxDR11 | | Red | |
| PDC39-CxDR21 | | Deep Red | |

Absolute Maximum Ratings at Ta=25 °C

| Parameter | Symbol | Rating | | Unit |
|---|--------|-------------------------|------|-------|
| | | G17/Y04/A11/R02/R11/R21 | G05 | |
| Power Dissipation per Dice | PAD | 70 | 114 | mW |
| Derating Liner from 25°C per Dice | -- | 0.33 | 0.4 | mA/°C |
| Continuous Forward Current Per Dice | IAF | 25 | 30 | mA |
| Peak Current Per Dice (duty cycle 1/10, 1KHz) | IPF | 90 | 100 | mA |
| Reverse Voltage Per Dice | VR | 5 | 5 | V |
| Electrostatic Discharge (HBM) | ESD | / | 1000 | V |
| Operating Temperature | Topr | -35~+85 | | °C |
| Storage Temperature | Tstg | -35~+85 | | °C |

Solder Conditions: 1/16 inch below seating plane for 3 -5 seconds at 260°C.



Electrical and Optical Characteristics at Ta=25 °C

| Parameter | Symbol | Chip | Min. | Typ. | Max. | Unit | Condition |
|--|-----------------------|-----------------------------|------|---------|------|---------|-----------|
| Forward Voltage Per Segment | VF | G05 | -- | 3.2 | 3.8 | V | IF=20mA |
| | | G17/Y04/A11/ R02/R11/R21 | -- | 2 | 2.8 | | |
| Luminous Intensity Per Segment | Iv | G05 | -- | 150 | -- | mcd | IF=10mA |
| | | G17 | -- | 9 | -- | | |
| | | Y04 | -- | 38 | -- | | |
| | | A11 | -- | 48 | -- | | |
| | | R02 | -- | 23 | -- | | |
| | | R11 | -- | 16 | -- | | |
| Peak Emission Wavelength / Dominant Wavelength | $\lambda P/\lambda d$ | G05 | -- | *525 | -- | nm | IF=20mA |
| | | G17 | -- | 572/570 | -- | | |
| | | Y04 | -- | 592/590 | -- | | |
| | | A11 | -- | 612/605 | -- | | |
| | | R02 | -- | 632/625 | -- | | |
| | | R11 | -- | 644/630 | -- | | |
| Reverse Current | IR | | -- | -- | 100 | μ A | VR=5V |
| Luminous Intensity Matching Ratio | Iv-m | | -- | -- | 2:1 | -- | IF=10mA |



Luminous General ly Bin Grade (IF = 10mA)

Color Rank Limits (IF=20mA)

Remark: Unit=mcd

*Tolerance: ±20%

Remark: Unit=nm

*Tolerance: ±1

● Pure Green (G05)

| P | Q | R |
|---------|---------|---------|
| 70.555 | 112.889 | 180.623 |
| I | I | I |
| 112.888 | 180.622 | 288.996 |

| 1 | 2 | 3 | 4 | 5 |
|-------|-------|-------|-------|-------|
| 515.0 | 518.0 | 520.0 | 522.0 | 524.0 |
| I | I | I | I | I |
| 518.0 | 520.0 | 522.0 | 524.0 | 527.0 |

● Yellow Green (G17)

| H | J | K |
|-------|--------|--------|
| 4.204 | 6.727 | 10.764 |
| I | I | I |
| 6.726 | 10.763 | 17.223 |

| 0 | 1 | 2 | 3 | 4 |
|-------|-------|-------|-------|-------|
| 567.5 | 569.5 | 570.5 | 571.5 | 573.0 |
| I | I | I | I | I |
| 569.5 | 570.5 | 571.5 | 573.0 | 575.0 |

● Yellow (Y04)

| L | M | N |
|--------|--------|--------|
| 17.224 | 27.559 | 44.096 |
| I | I | I |
| 27.558 | 44.095 | 70.554 |

| 1 | 2 | 3 | 4 | 5 |
|-------|-------|-------|-------|-------|
| 583.0 | 585.0 | 587.0 | 589.0 | 591.0 |
| I | I | I | I | I |
| 585.0 | 587.0 | 589.0 | 591.0 | 593.0 |

● Amber (A11)

| M | N | P |
|--------|--------|---------|
| 27.559 | 44.096 | 70.555 |
| I | I | I |
| 44.095 | 70.554 | 112.888 |

● Orange-Red (R02)

| K | L | M |
|--------|--------|--------|
| 10.764 | 17.224 | 27.559 |
| I | I | I |
| 17.223 | 27.558 | 44.095 |

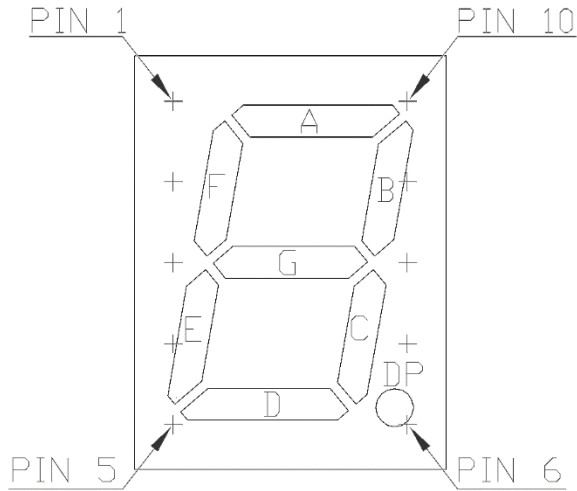
● Red (R11)

| J | K | L |
|--------|--------|--------|
| 6.727 | 10.764 | 17.224 |
| I | I | I |
| 10.763 | 17.223 | 27.558 |

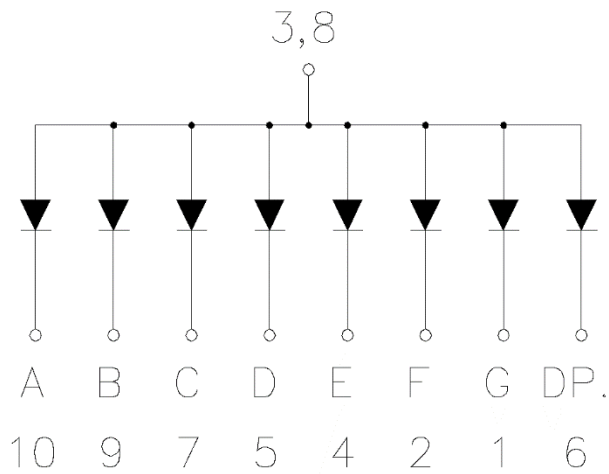
● Deep Red (R21)

| J | K | L |
|--------|--------|--------|
| 6.727 | 10.764 | 17.224 |
| I | I | I |
| 10.763 | 17.223 | 27.558 |

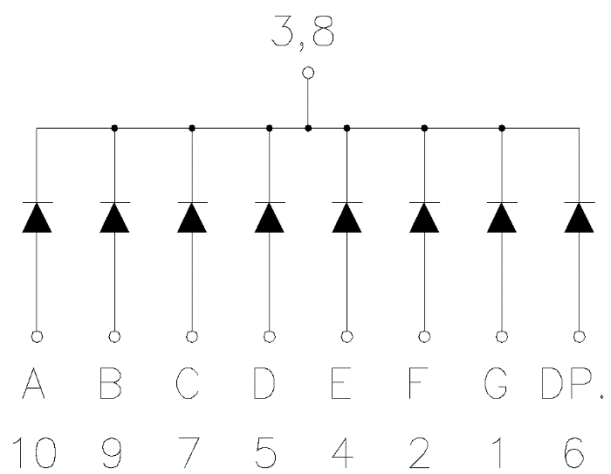
All Light-On Segments Feature & Pad Position



Internal Circuit Diagram



Common Anode



Common Cathode

Typical Electrical / Optical Characteristic Curves

- (Ta = 25°C Unless Otherwise Noted)

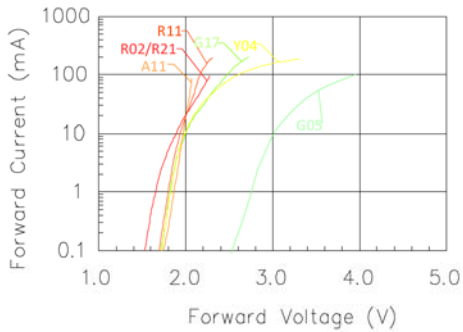


Fig 1. Forward Current vs. Forward Voltage

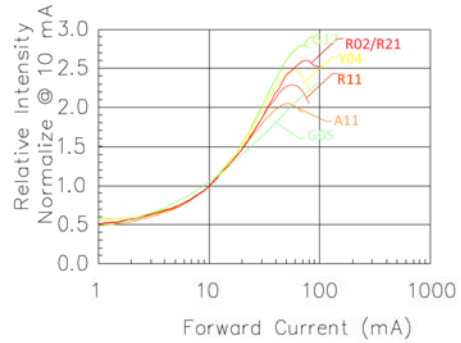


Fig 2. Relative Intensity vs. Forward Current

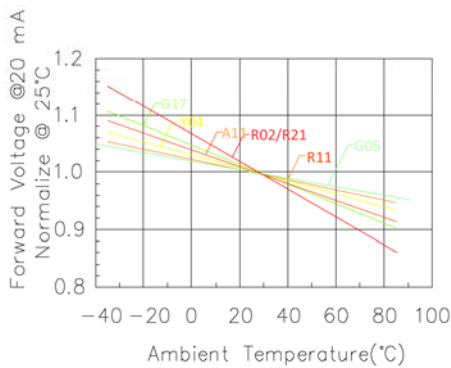


Fig 3. Forward Voltage vs. Temperature

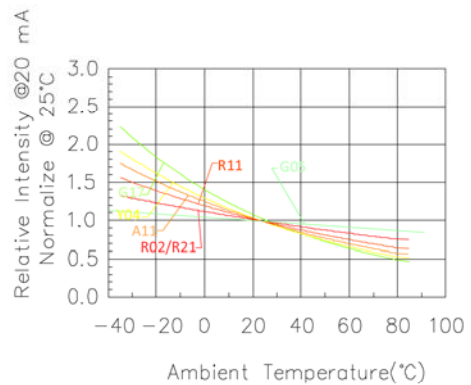


Fig 4. Relative Intensity vs. Temperature

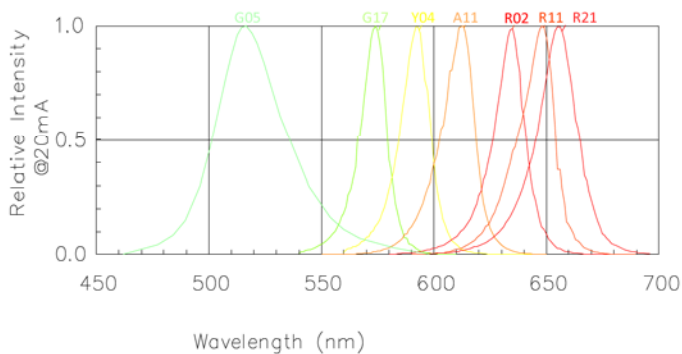


Fig 5. Relative Intensity vs. Wavelength

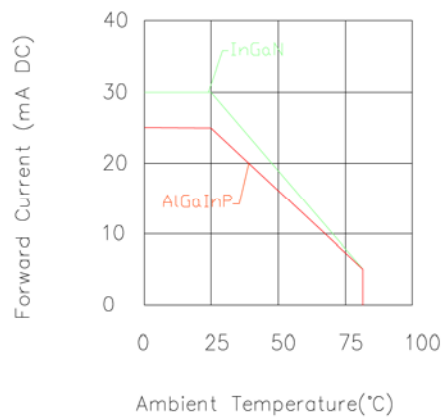


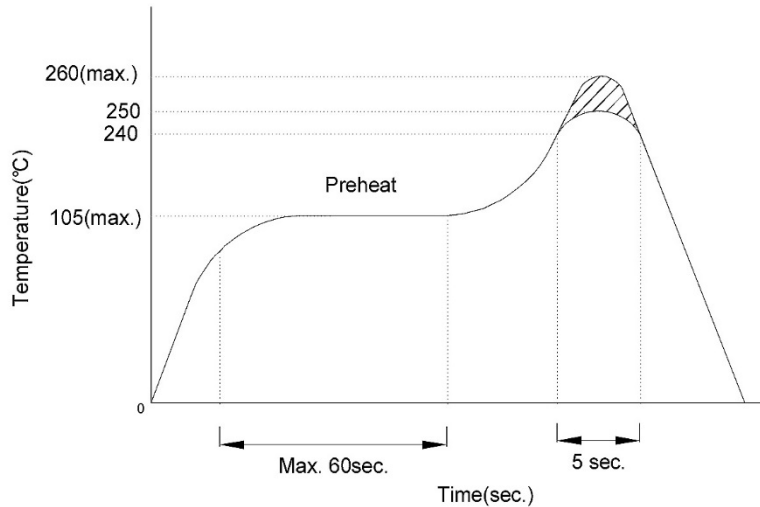
Fig 3. Forward Current vs. Ambient Temperature

Precautions for Use

1. Recommended soldering conditions

a. Wave soldering

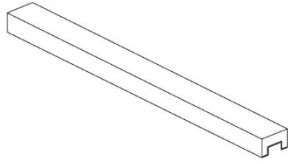
- i. Basic SPEC is ≤ 5 sec. When 260°C . If temperature is higher, time should be shorter ($+10^{\circ}\text{C} \rightarrow -1\text{sec.}$).



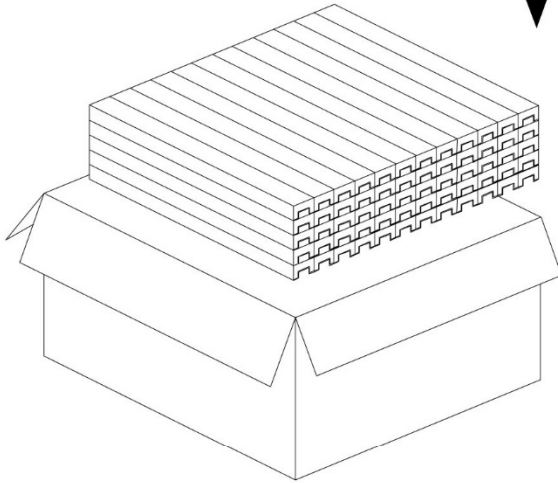
2. Soldering Iron:

- a. Power dissipation of iron should be smaller than 15W and temp should be controllable. Soldering temperature should be under 260°C , time ≤ 3 sec.

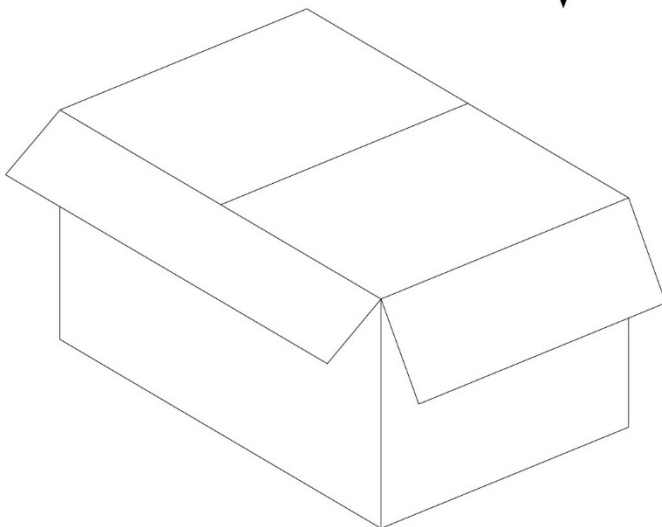
Packing Dimensions



38 PCS Per Tube
Tube Size:
L520*W13*H17.5 mm



130 Tubes Per Inner Box
Total Q'TY: 4940 Pcs
Box Size:
L530*W265*H155 mm



2 Inner Boxes Per Carton.
Total Q'TY: 9880 Pcs
Box Size:
L530*W345*H290 mm

Note:

1. Specifications subject to change without notice.

