

PRODUCT SPECIFICATION

Part Number
PDC56C-CxDxxx

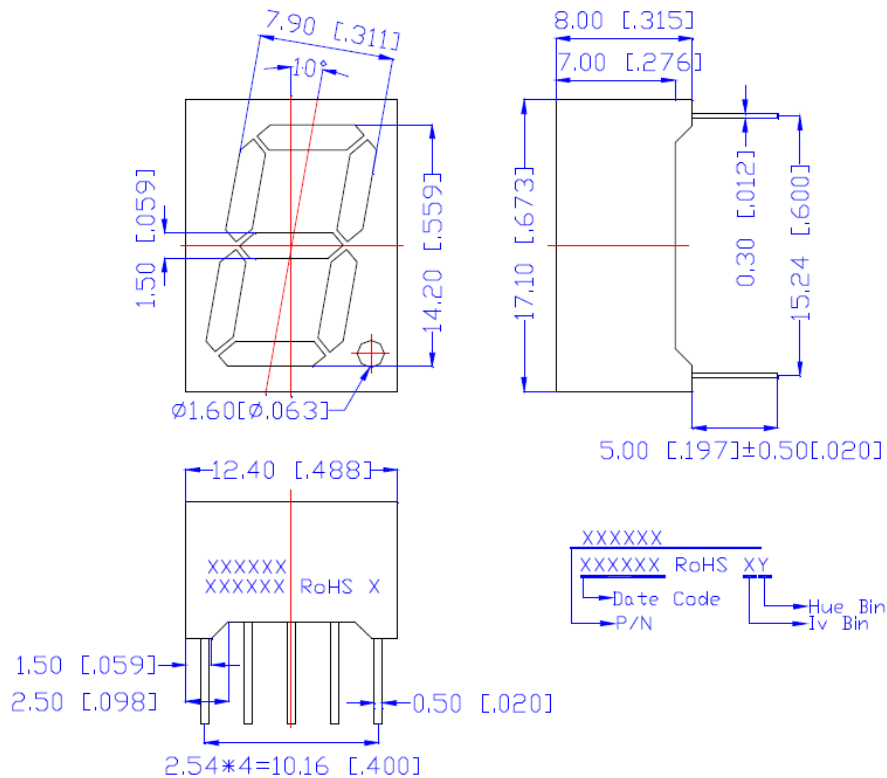
Details

- 0.56" (14.20mm) LED Display
- 1 Digit, 7 Segment
- Common Anode or Common Cathode
- AlInGaP or InGaN dice used

Features

- Low power consumption
- RoHS Compliant
- Gray Face, White Segments or Black Face, White Segments
- Easy mounting on PCB or socket

Mechanical Dimensions



Notes:

1. Dimensions in millimeters [inch], and tolerance is ± 0.25 [0.010] unless otherwise noted.
2. Bending \leq Length*1%
3. All pins are $\phi 0.51$ [0.020] ± 0.1 [0.004]
4. Specifications subject to change without notice



Device Selection Guide

| Model Number | | Chip | | Note |
|---------------|----------------|----------|----------------|---|
| Common Anode | Common Cathode | Material | Emitting Color | |
| PDC56C-CADG05 | PDC56C-CCDG05 | InGaN | Pure Green | Add “-BW” to end of part number for Black Surface with White Segments |
| PDC56C-CADG17 | PDC56C-CCDG17 | AlInGaP | Yellow Green | |
| PDC56C-CADY04 | PDC56C-CCDY04 | | Yellow | |
| PDC56C-CADA11 | PDC56C-CCDA11 | | Amber | |
| PDC56C-CADR02 | PDC56C-CCDR02 | | Orange-Red | |
| PDC56C-CADR11 | PDC56C-CCDR11 | | Red | |
| PDC56C-CADR21 | PDC56C-CCDR21 | | 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 | -- | 218 | -- | mcd | IF=10mA |
| | | G17 | -- | 15 | -- | | |
| | | Y04 | -- | 50 | -- | | |
| | | A11 | -- | 70 | -- | | |
| | | R02 | -- | 40 | -- | | |
| | | R11 | -- | 30 | -- | | |
| | | R21 | -- | 25 | -- | | |
| Peak Emission Wavelength / Dominant Wavelength | λ_P/λ_d | G05 | -- | *525 | -- | nm | IF=20mA |
| | | G17 | -- | 572/570 | -- | | |
| | | Y04 | -- | 592/590 | -- | | |
| | | A11 | -- | 612/605 | -- | | |
| | | R02 | -- | 632/625 | -- | | |
| | | R11 | -- | 644/630 | -- | | |
| | | R21 | -- | 660/645 | -- | | |
| Reverse Current | IR | | -- | -- | 100 | μ A | VR=5V |
| Luminous Intensity Matching Ratio | Iv-m | | -- | -- | 2:1 | -- | IF=10mA |



Luminous General lv Bin Grade (IF = 10mA)

Color Rank Limits (IF=10mA)

Remark: Unit=mcd

*Tolerance: ±20%

Remark: Unit=nm

*Tolerance: ±1

● Pure Green (G05)

| Q | R | S |
|---------|---------|---------|
| 112.889 | 180.623 | 288.997 |
| I | I | I |
| 180.622 | 288.996 | 462.396 |

| 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)

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

| 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)

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

| 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)

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

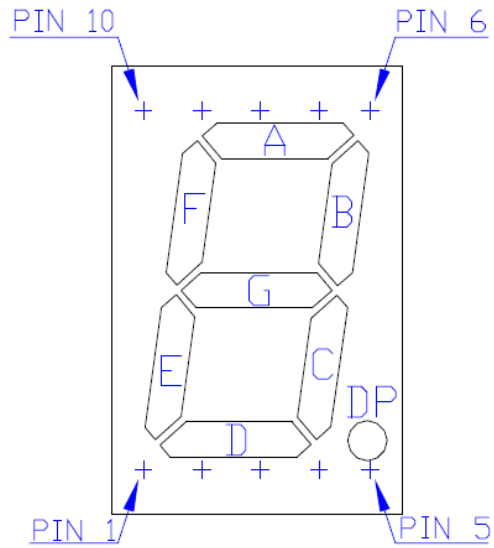
● Red (R11)

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

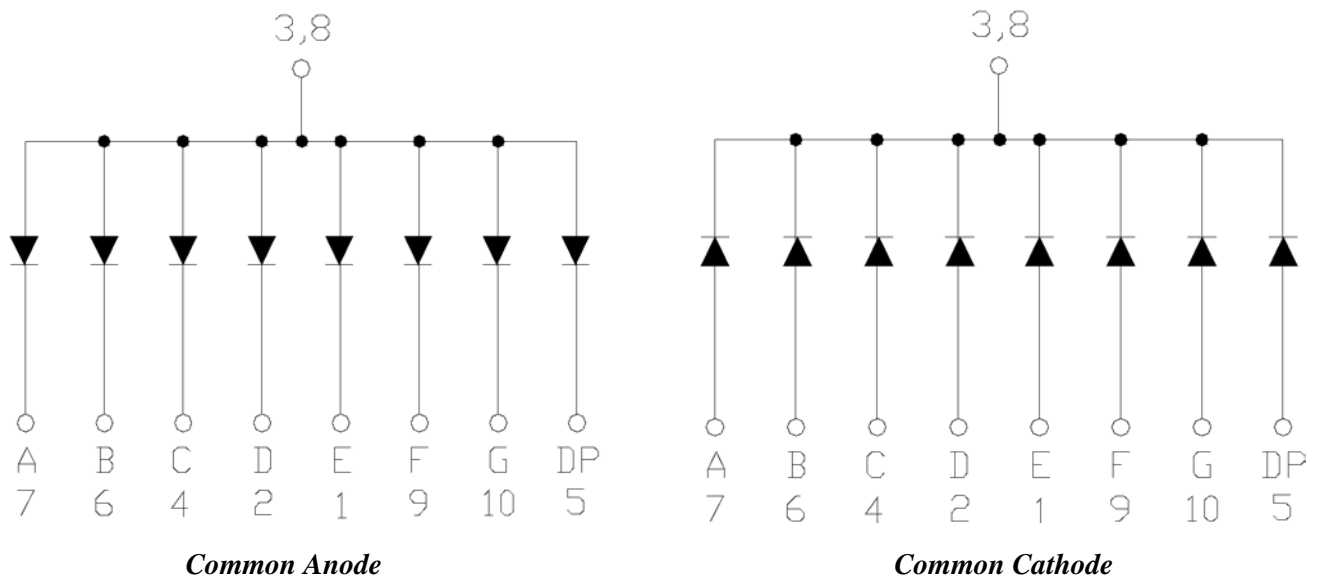
● Deep Red (R21)

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

All Light-On Segments Feature & Pad Position



Internal Circuit Diagram



Typical Electrical / Optical Characteristic Curves

- (Ta = 25°C Unless Otherwise Noted)

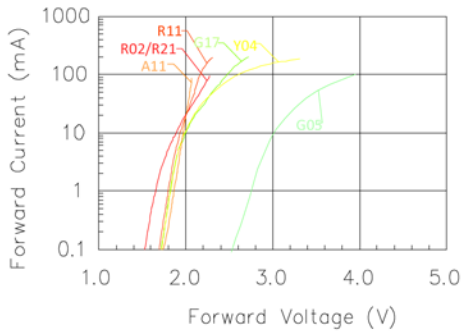


Fig 1. Forward Current vs. Forward Voltage

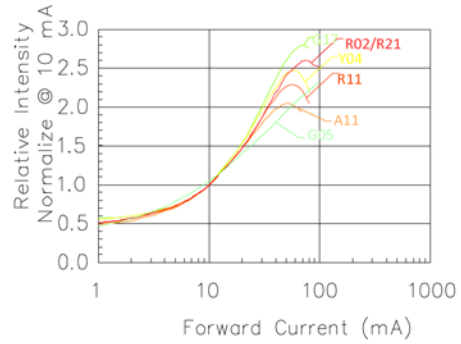


Fig 2. Relative Intensity vs. Forward Current

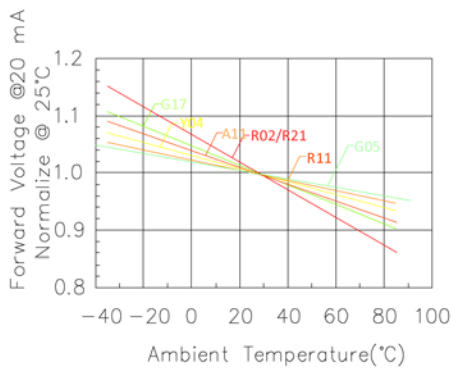


Fig 3. Forward Voltage vs. Temperature

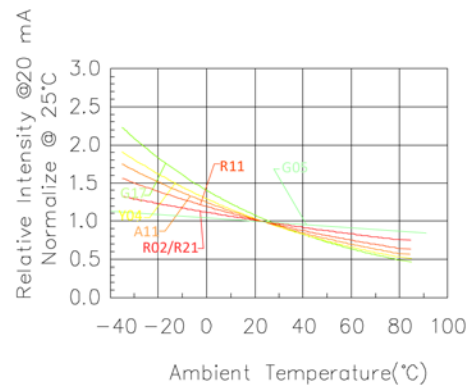


Fig 4. Relative Intensity vs. Temperature

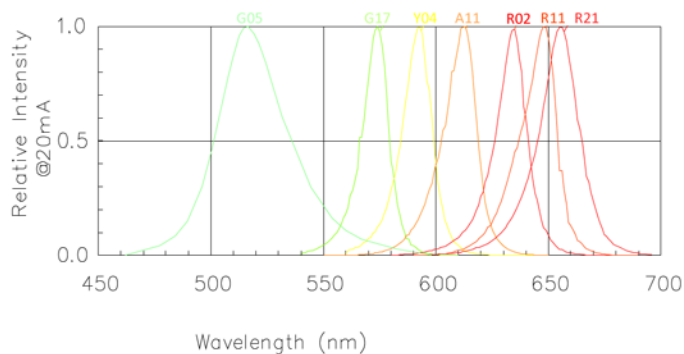


Fig 5. Relative Intensity vs. Wavelength

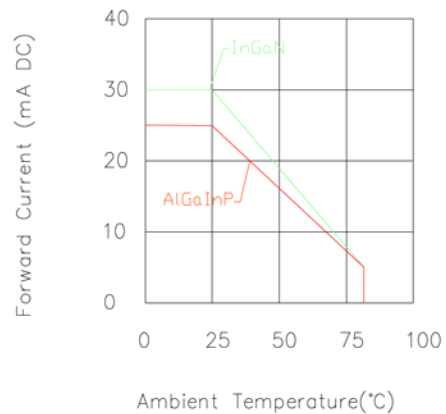


Fig 3. Forward Current vs. Ambient Temperature

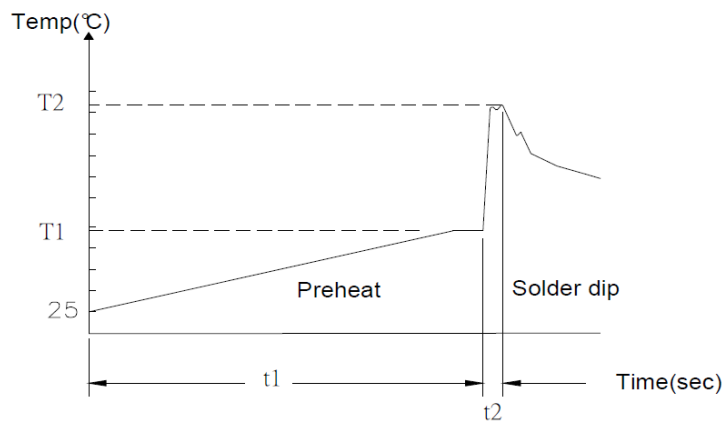
Precautions for Use

1. Recommended soldering conditions

a. Wave soldering profile

i. Distance: 1.6mm min (from seating plane)

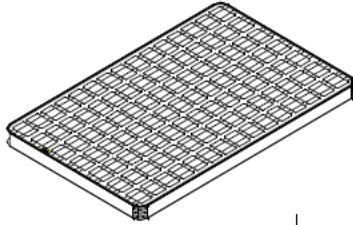
| Item | Condition | | Note |
|------------|----------------|-------------|---|
| Preheat | Temperature T1 | 80 – 120°C | PWB temperature (Soldering side surface) |
| | Time t1 | 60 – 180sec | |
| Solder Dip | Temperature T2 | 230 – 260°C | Bath temperature |
| | Time t2 | 2 – 4sec | Solder tank passage time |



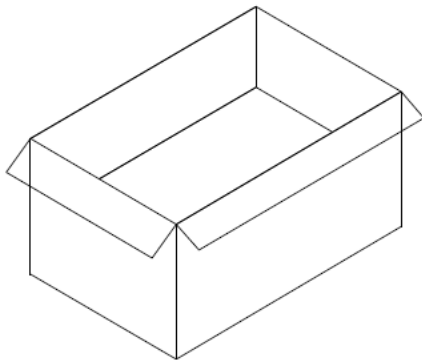
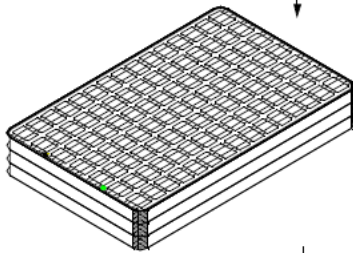
2. Hand Soldering (Iron Condition):

- a. Soldering Iron: 30W Max
- b. Temperature 350C Max
- c. Soldering Time: 3 Second Max (One Time)
- d. Distance 1.6mm min (from seating plane)

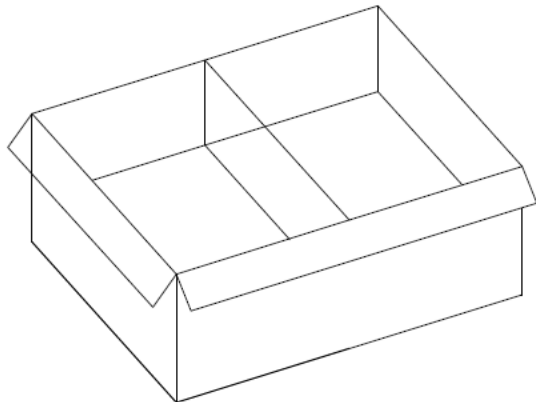
Packing Dimensions



1 Tray From Box = 72 PCS
Tray Size:
L295 x W195 x H16mm



14 Trays Per Inner Box
Q'TY: 1008 PCS.
Box Size:
L300 x W205 x H240mm



2 Inner Boxes Per Carton.
Total Q'TY: 2016 Pcs
Carton Size:
L431 x W320 x H252mm

