# PRODUCT SPECIFICATION

***Part Number***

**PAC100-CxDxxx**

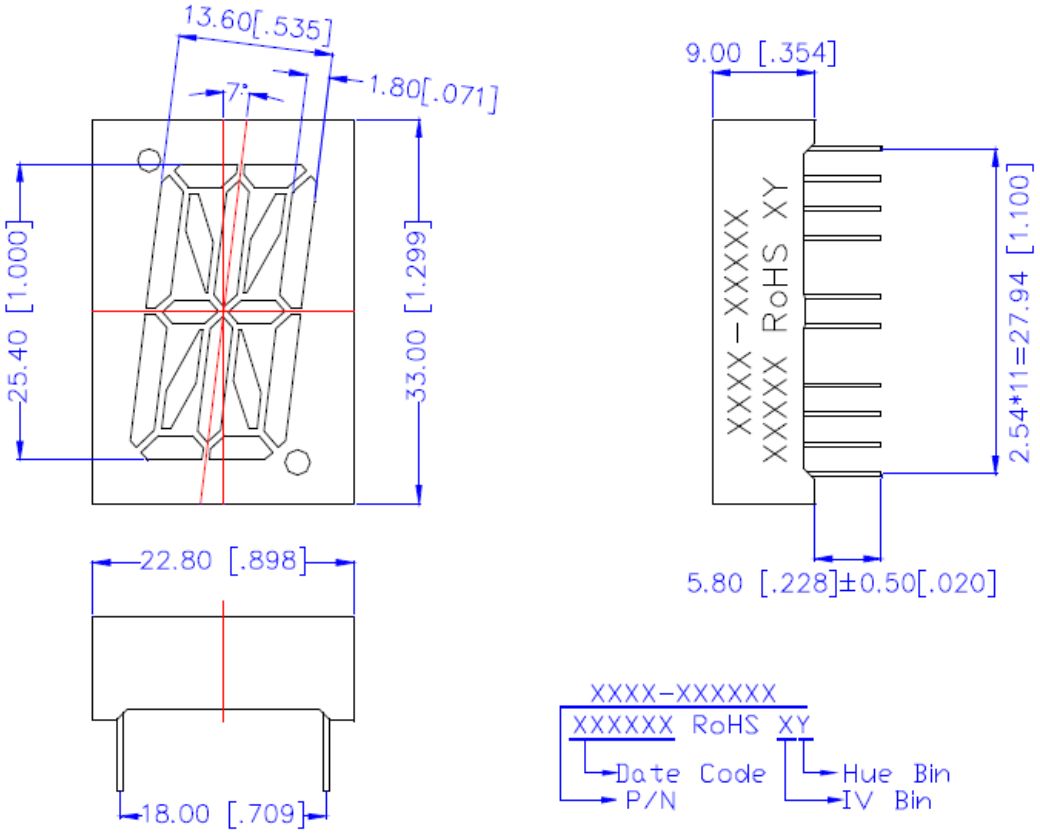
### *Details*

- 1.0” (25.4mm) Display
- 1 Digit, Alphanumeric
- Common Anode or 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 [.010] and angle is ±1° unless otherwise noted.
2. Bending ≤ Length*1%
3. All pins are Ø0.510.[020]±0.1[.004]
4. Specifications subject to change without notice

## *Device Selection Guide*

| Model Number | Chip | | Description | Note |
|---|---|---|---|---|
| | Material | Emitting Color | | |
| PAC100-CxDG05 | InGaN | True Green | Common Cathode x=C / Common Anode x=A | Add "BFWS" to end of part number for Black Face, White Segment version |
| PAC100-CxDG17 | AlInGaP | Yellow Green | | |
| PAC100-CxDY04 | | Yellow | | |
| PAC100-CxDA11 | | Amber | | |
| PAC100-CxDR02 | | Orange-Red | | |
| PAC100-CxDR11 | | Red | | |
| PAC100-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 | $P_{AD}$ | 70 | 114 | mW |
| Derating Liner from 25°C per Dice | -- | 0.33 | 0.4 | mA/°C |
| Continuous Forward Current Per Dice | $I_{AF}$ | 25 | 30 | mA |
| Peak Current Per Dice (duty cycle 1/10, 1KHz) | $I_{PF}$ | 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 | -- | 6.4(3.2) | 7.6(3.8) | V | IF=20mA |
| | | G17/Y04/A11 /R02/R11/R21 | -- | 4(2) | 5.6(2.8) | | |
| Luminous Intensity Per Segment | Iv | G05 | -- | 576 | -- | mcd | IF=10mA |
| | | G17 | -- | 32 | -- | | |
| | | Y04 | -- | 137 | -- | | |
| | | A11 | -- | 181 | -- | | |
| | | R02 | -- | 88 | -- | | |
| | | R11 | -- | 60 | | | |
| | | R21 | -- | 46 | -- | | |
| Peak Emission Wavelength / Dominant Wavelength | λP/λd | 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 | μA | VR=10(5)V |
| Luminous Intensity Matching Ratio | Iv-m | | -- | -- | 2:1 | -- | IF=10mA |

## *Typical Electrical/Optical Characteristic Curves*

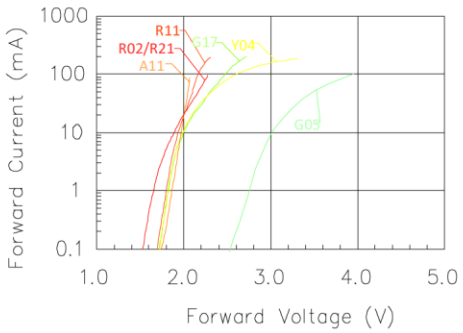



Fig 1. Forward Current vs. Forward Voltage

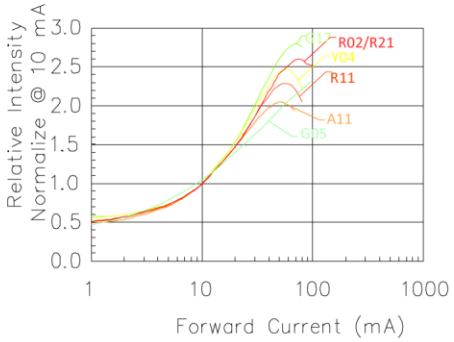



Fig 2. Relative Intensity vs. Forward Current

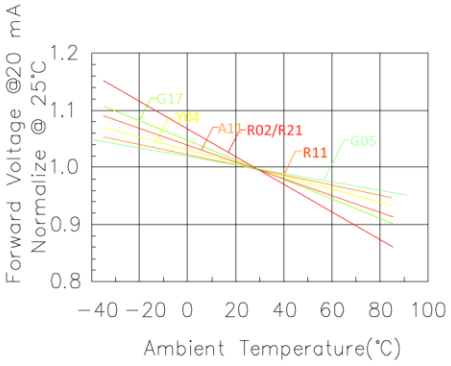



Fig 3. Forward Voltage vs. Temperature

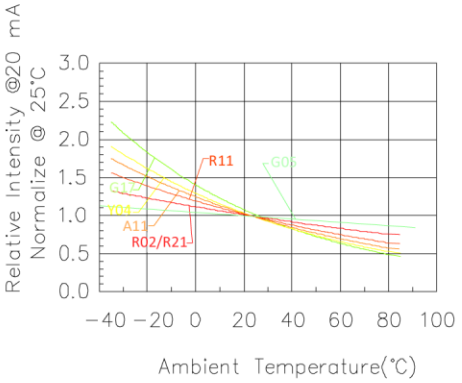



Fig 4. Relative Intensity vs. Temperature

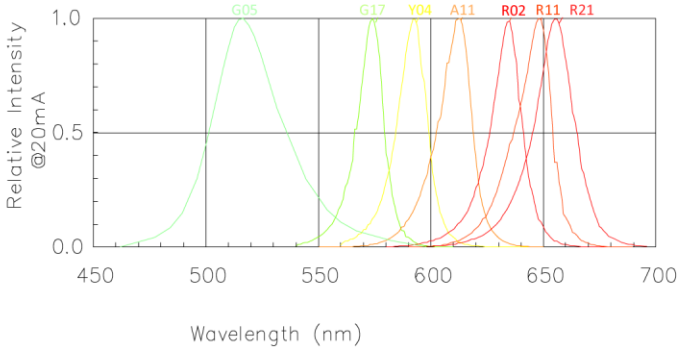



Fig 5. Relative Intensity vs. Wavelength

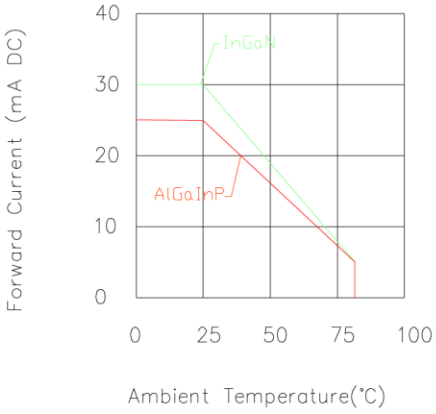



Fig 3. Forward Current vs. Ambient Temperature

## *Luminous General Iv Bin Grade ($I_F$ = 10mA)*

| ■ Luminous General Iv Bin Grade ( $I_F$ = 10mA ) | Color Rank Limits ( IF = 20mA ) |
|---|---|
| Remark： Unit=mcd<br>*Tolerance: ±20% | Remark： Unit=nm<br>*Tolerance: ±1 |

● Pure Green(G02)

| S | T | U |
|---|---|---|
| 288.997 | 462.397 | 739.836 |
| I | I | I |
| 462.396 | 739.835 | 1183.737 |

| 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)

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

| 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)

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

| 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）

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

● Orange（R02）

| N | P | Q |
|---|---|---|
| 44.096 | 70.555 | 112.889 |
| I | I | I |
| 70.554 | 112.888 | 180.622 |

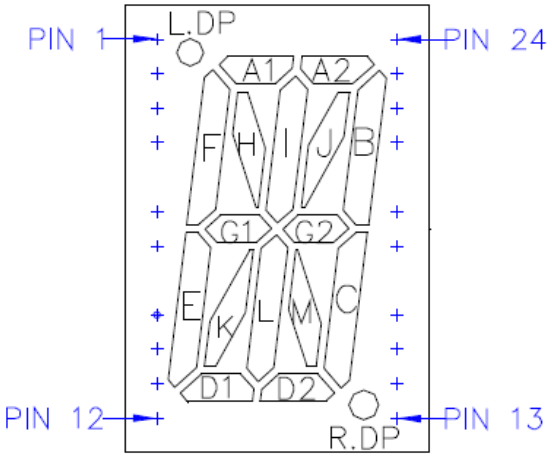
● Red（R11）

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

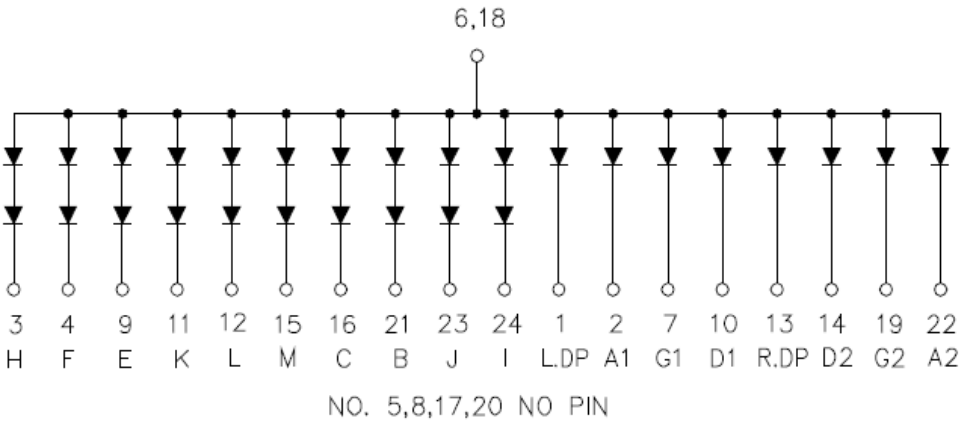
● Deep Red(R21)

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

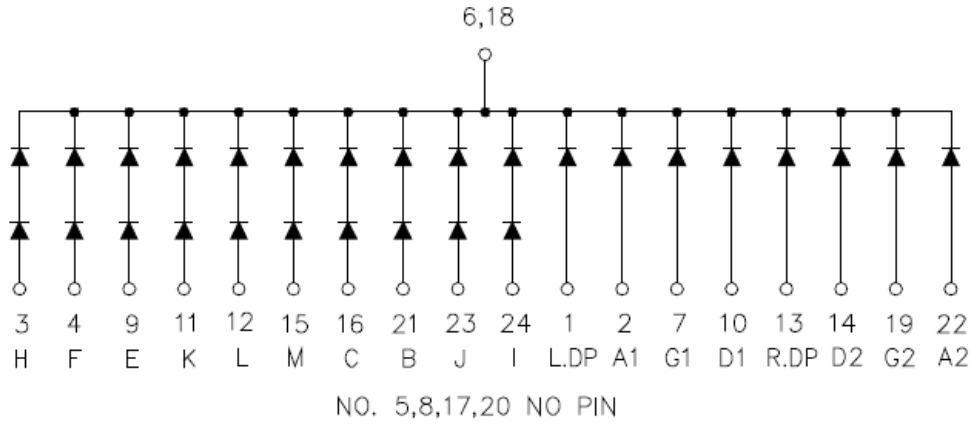
***All Light-On Segments Feature & Pad Position***




***Internal Circuit Diagram***



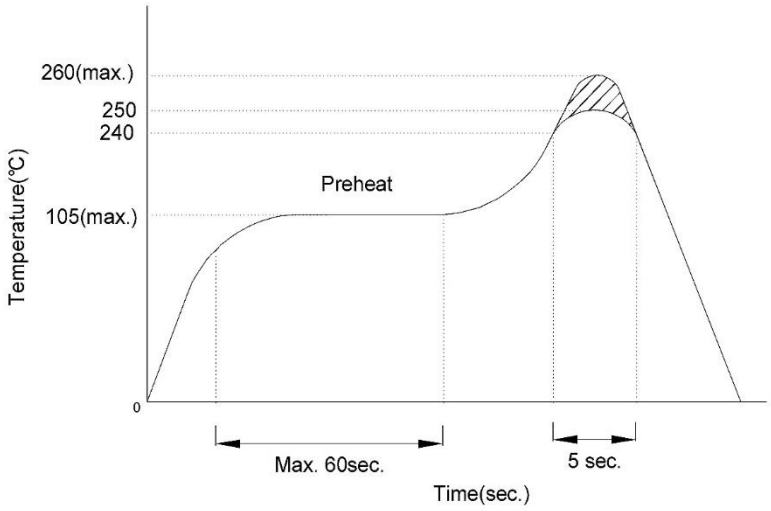

**Common Anode**



## *Precautions for Use*

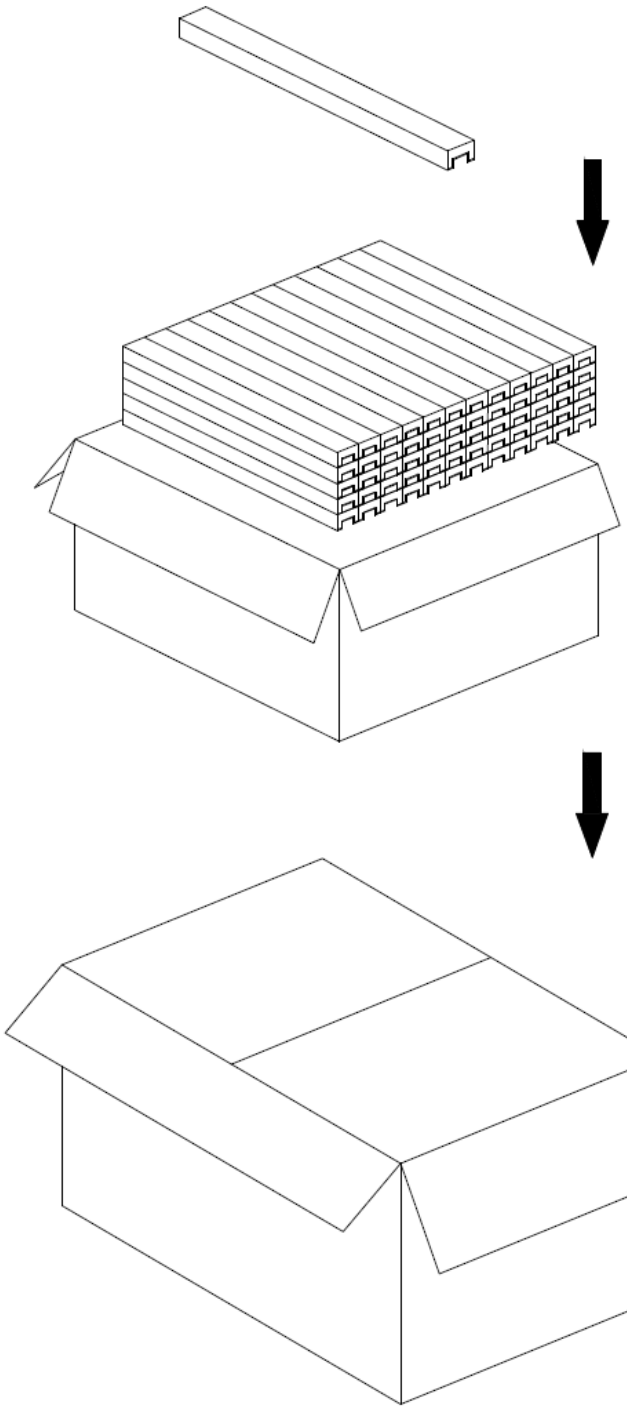
1. Recommended soldering conditions
   1.1. Wave soldering

   Basic SPEC is ≤ 5sec. When 260°C. If temperature is higher, time should be shorter (+10°C→ -1sec.).




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

***Packing Dimensions***



15 PCS Per Tube
Tube Size:
L520*W38*H21 mm

42 Tubes Per Inner Box
Total Q'TY: 630 Pcs
Box Size:
L530*W265*H155 mm

2 Inner Boxes Per Carton.
Total Q'TY: 1260 Pcs
Box Size:
L540*W345*H290 mm

Note: 1. Specifications subject to change without notice.

| | Approved By | Checked By | Prepared By |
|---|---|---|---|
| **Customer Approval Signatures** | | | |

| Record Of Revisions | | | |
|---|---|---|---|
| **Rev.** | **Comments** | **Page** | **Date** |
| 0 | Released Spec | -- | 11/12/13 |
| 1 | Logo Update | All | 04/07/15 |
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