

# PRODUCT SPECIFICATION

*Part Number*  
**PDC300-CxDxxx**

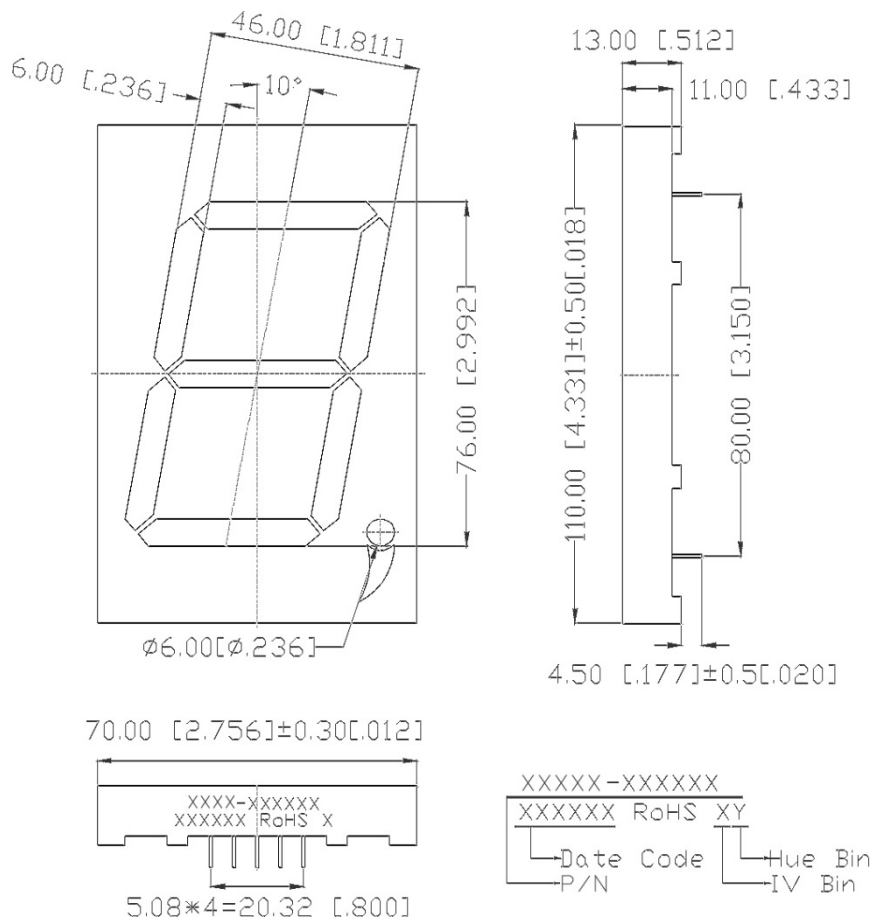
## Details

- 3.0" (76.0mm) LED Display
- 1 Digit, 7 Segment
- Common Anode and Common Cathode
- AllInGaP 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 millimeter [inch], tolerance is ±0.25 [0.010] and angle is ±1° unless otherwise noted.
2. Bending ≤ Length\*1%
3. All pins are  $\phi 0.80 [\phi 0.030] \pm 0.1 [0.004]$
4. Specifications subject to change without notice





**Device Selection Guide**

Model Number	Chip		Description	Note
	Material	Emitting Color		
PDC300-CxDG05	InGaN	Pure Green	Common Anode or Common Cathode	Add "BW" to end of part number for Black Face, White Segment version
PDC300-CxDG17	AlInGaP	Yellow Green		
PDC300-CxDY04		Yellow		
PDC300-CxDA11		Amber		
PDC300-CxDR02		Orange-Red		
PDC300-CxDR11		Red		
PDC300-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 <sub>AD</sub>	70	114	mW
Derating Liner from 25°C per Dice	--	0.33	0.4	mA/°C
Continuous Forward Current Per Dice	I <sub>AF</sub>	25	30	mA
Peak Current Per Dice (duty cycle 1/10, 1KHz)	I <sub>PF</sub>	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	--	19.2(6.4)	22.8(7.6)	V	IF=20mA
		G17/Y04/A11/ R02/R11/R21	--	12(4)	16.8(5.6)		
Luminous Intensity Per Segment	Iv	G05	--	2474	--	mcd	IF=10mA
		G17	--	150	--		
		Y04	--	440	--		
		A11	--	689	--		
		R02	--	454	--		
		R11	--	177	--		
		R21	--	154	--		
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	$\mu A$	VR=5V
Luminous Intensity Matching Ratio	Iv-m		--	--	2:1	--	IF=10mA



**Luminous General I<sub>v</sub> Bin Grade (I<sub>F</sub> = 10mA)**

**Color Rank Limits (I<sub>F</sub>=20mA)**

Remark: Unit=mcd

\*Tolerance: ±20%

Remark: Unit=nm

\*Tolerance: ±1

● Pure Green (G05)

V	W	X
1183.738	1893.982	3030.372
I	I	I
1893.981	3030.371	4848.596

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)

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

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)

R	S	T
180.623	288.997	462.397
I	I	I
288.996	462.396	739.835

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)

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

● Orange-Red (R02)

R	S	T
180.623	288.997	462.397
I	I	I
288.996	462.396	739.835

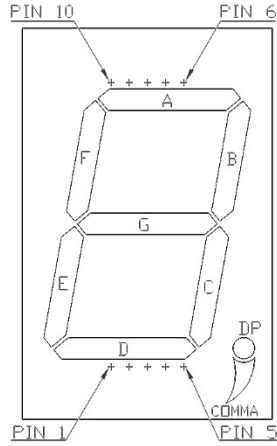
● Red (R11)

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

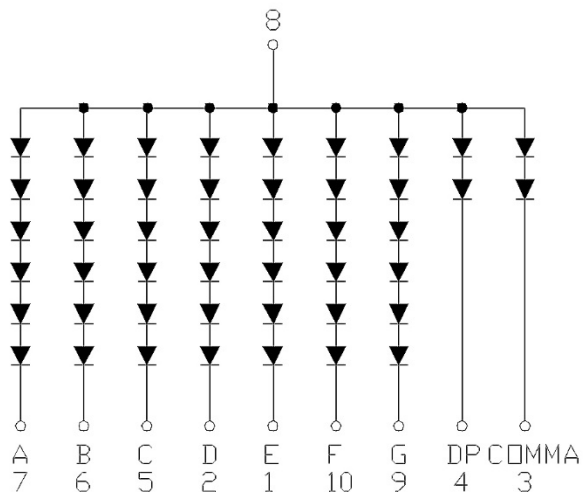
● Deep Red (R21)

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

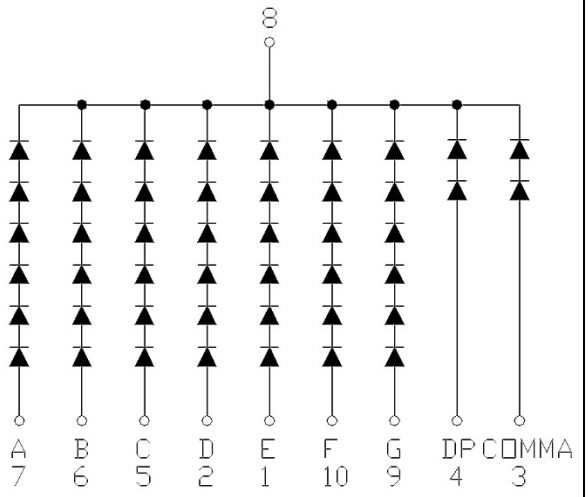
**All Light-On Segments Feature & Pad Position**



**Internal Circuit Diagram**



**Common Anode**



**Common Cathode**

### Typical Electrical / Optical Characteristic Curves

- (Ta = 25°C Unless Otherwise Noted)

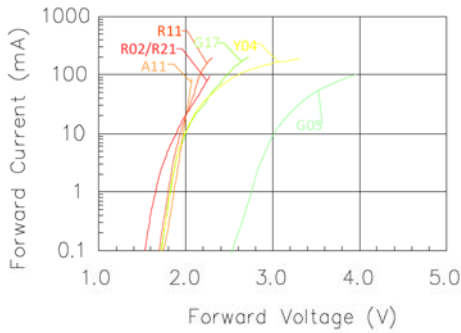


Fig 1. Forward Current vs. Forward Voltage

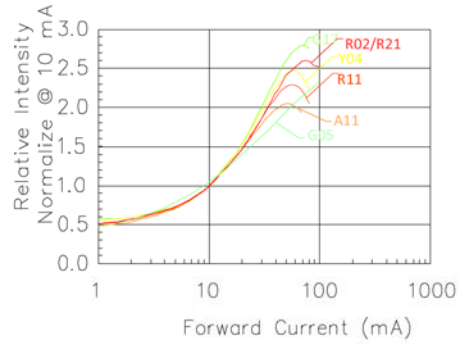


Fig 2. Relative Intensity vs. Forward Current

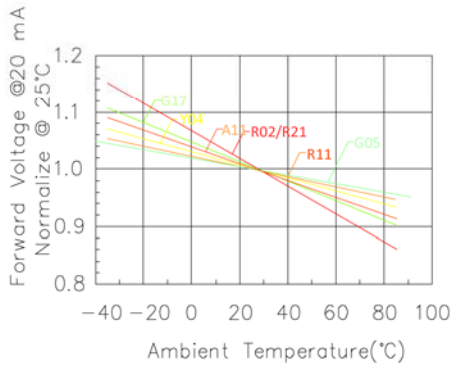


Fig 3. Forward Voltage vs. Temperature

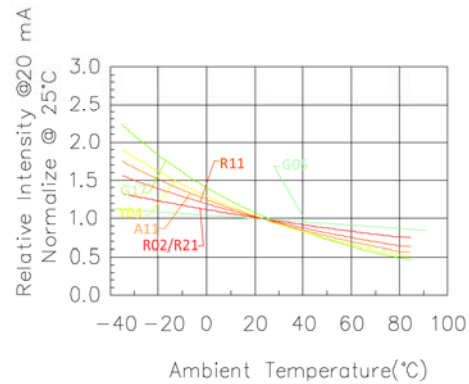


Fig 4. Relative Intensity vs. Temperature

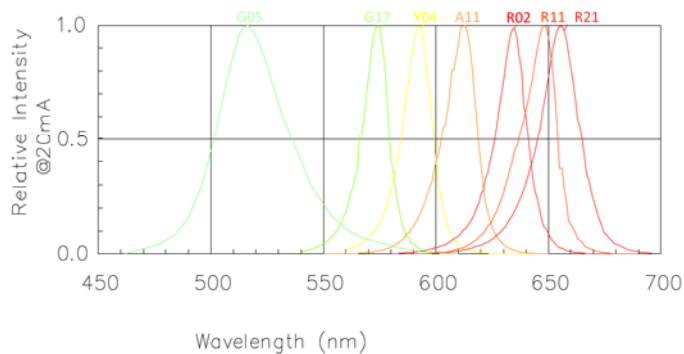


Fig 5. Relative Intensity vs. Wavelength

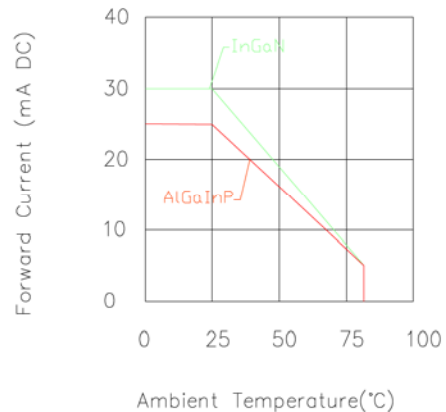


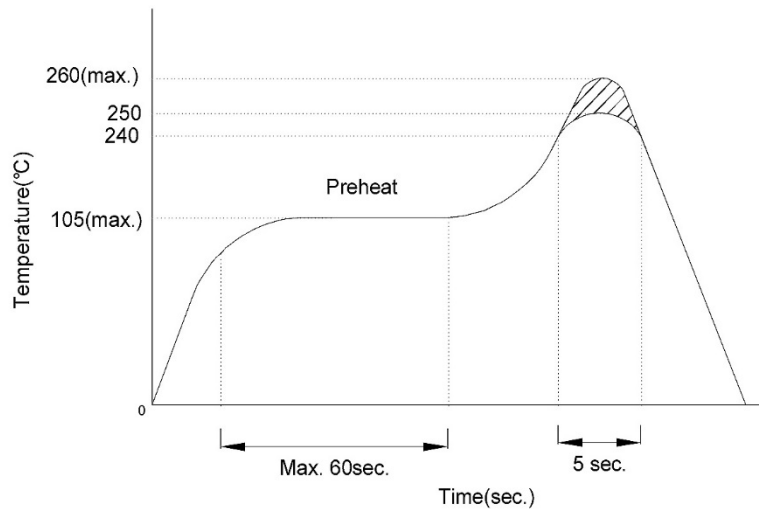
Fig 3. Forward Current vs. Ambient Temperature

### *Precautions for Use*

#### 1. Recommended soldering conditions

##### a. Wave soldering

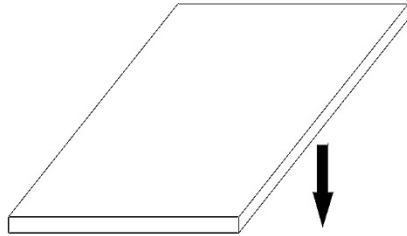
- i. Basic SPEC is  $\leq 5$ sec. When  $260^{\circ}\text{C}$ . If temperature is higher, time should be shorter ( $+10^{\circ}\text{C} \rightarrow -1$ sec.).



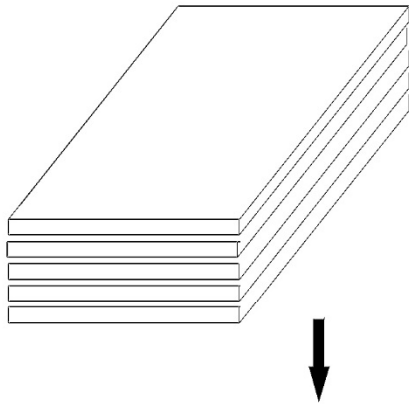
#### 2. Soldering Iron:

- a. Power dissipation of iron should be smaller than 15W and temp should be controllable. Soldering temperature should be under  $260^{\circ}\text{C}$ , time  $\leq 3$ sec.

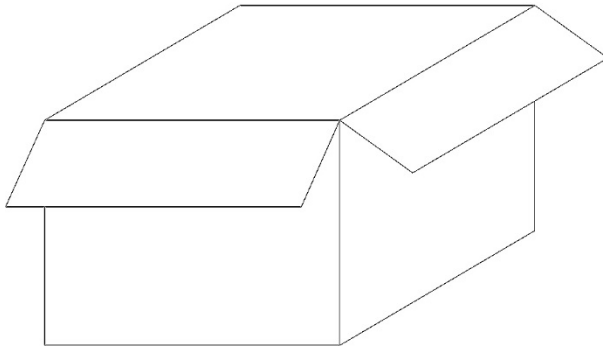
***Packing Dimensions***



4 Pcs Per PE.foam  
PE.foam Size:  
L295xW195xH15mm



8 PE.foam Per Box  
Q'TY :32 PCS  
Box Size:  
L300\*W205\*H240mm







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Record Of Revisions			
Rev.	Comments	Page	Date
0	Released Spec	--	10/30/13
1	Logo Update	All	04/07/15