

PRODUCT SPECIFICATION

Part Number
PDC31-CxDxxx

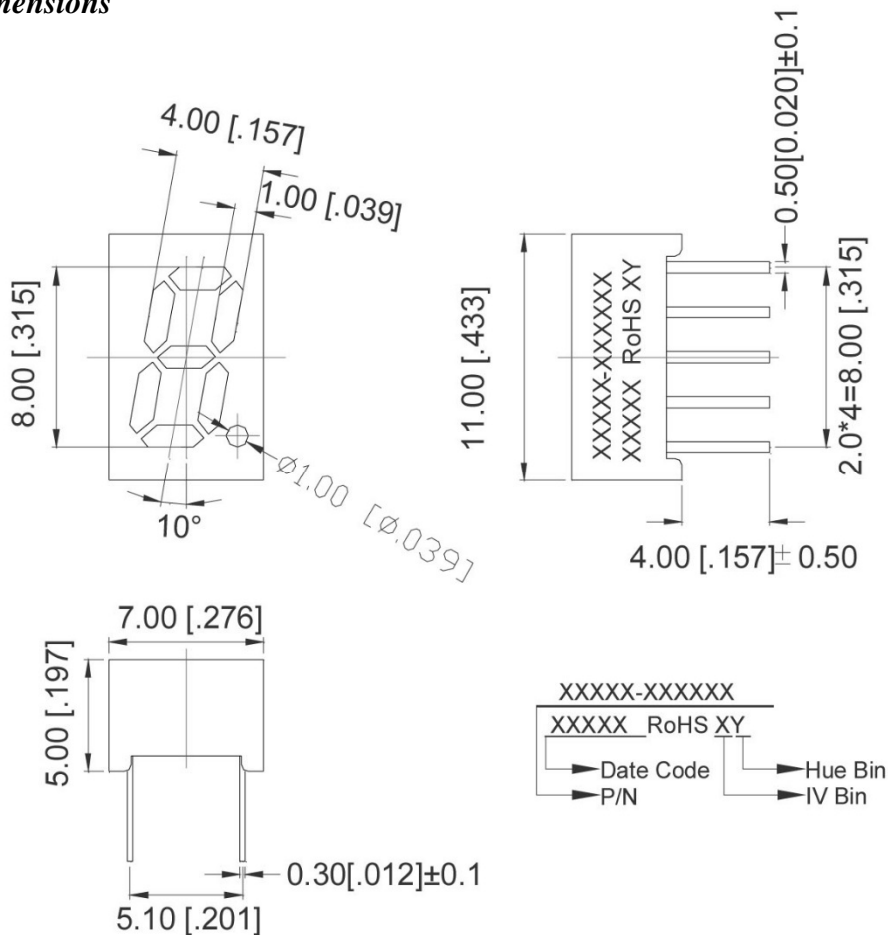
Details

- 0.31" (8.00mm) LED Display
- 1 Digit, 7 Segment
- Common Anode and 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. Dimension in millimeter [inch], tolerance is ± 0.25 [.010] and angle is $\pm 1^\circ$ unless otherwise noted
2. Bending \leq Length*1%
3. All pins are 0.5*0.3
4. Specifications subject to change without notice





Device Selection Guide

Model Number	Chip		Description	Note
	Material	Emitting Color		
PDC31-CxDG05	InGaN	Pure Green	Common Anode or Common Cathode	Add "BW" to end of part number for Black Face, White Segment version
PDC31-CxDG17	AlInGaP	Yellow Green		
PDC31-CxDY04		Yellow		
PDC31-CxDA11		Amber		
PDC31-CxDR02		Orange-Red		
PDC31-CxDR11		Red		
PDC31-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	--	120	--	mcd	IF=10mA
		G17	--	6	--		
		Y04	--	30	--		
		A11	--	45	--		
		R02	--	20	--		
		R11	--	12	--		
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=mcld

*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

G	H	J
2.627	4.204	6.727
I	I	I
4.203	6.726	10.763

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

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

● Orange-Red R02

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

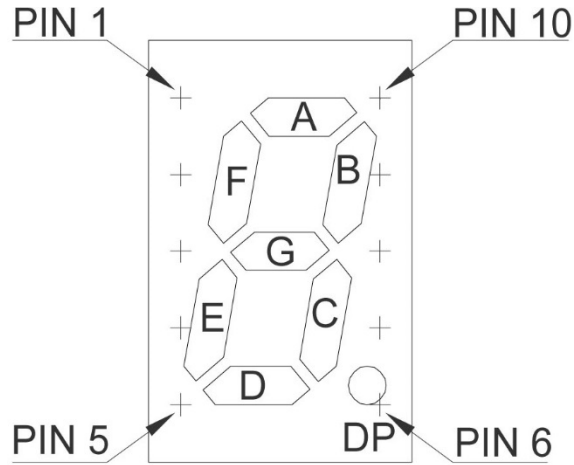
● Red R11

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

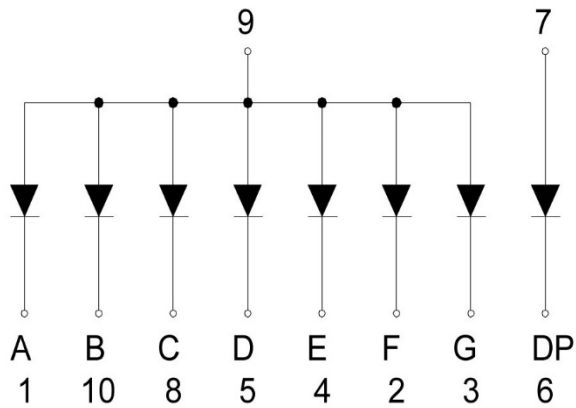
● Deep Red R21

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

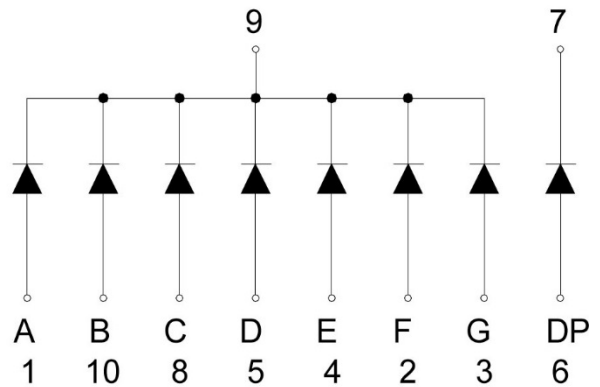
All Light-On Segments Feature & Pad Position



Internal Circuit Diagram



Common Anode



Common Cathode

Typical Electrical / Optical Characteristic Curves

- (Ta = 25°C Unless Otherwise Noted)

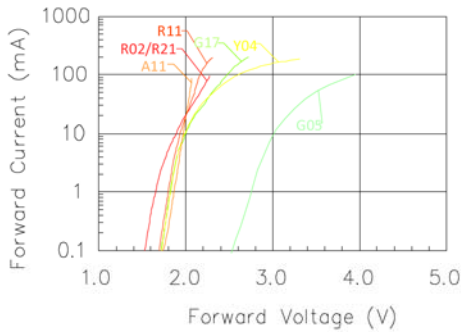


Fig 1. Forward Current vs. Forward Voltage

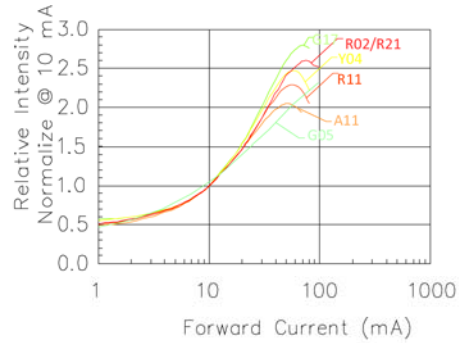


Fig 2. Relative Intensity vs. Forward Current

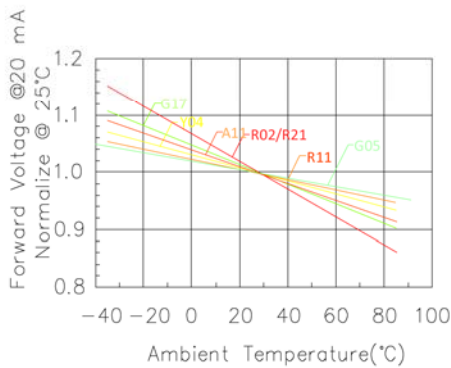


Fig 3. Forward Voltage vs. Temperature

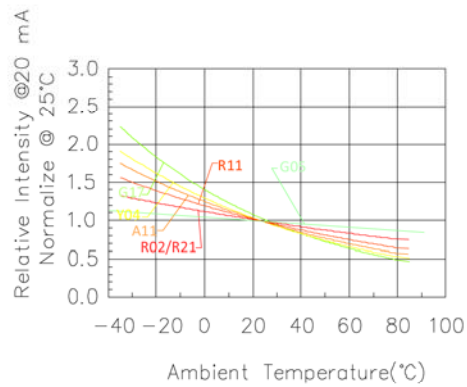


Fig 4. Relative Intensity vs. Temperature

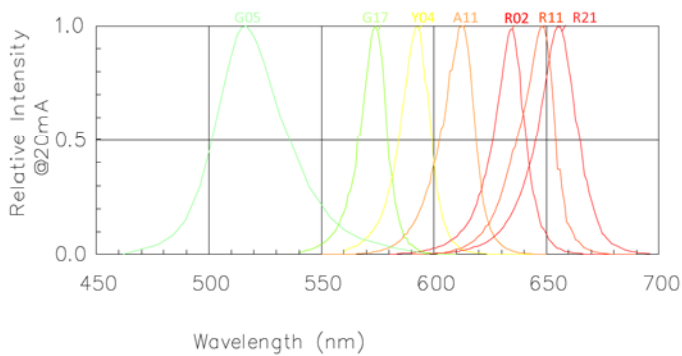


Fig 5. Relative Intensity vs. Wavelength

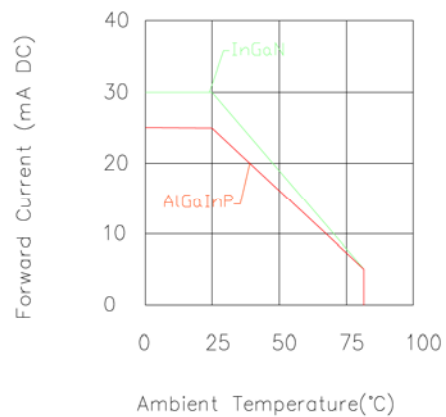


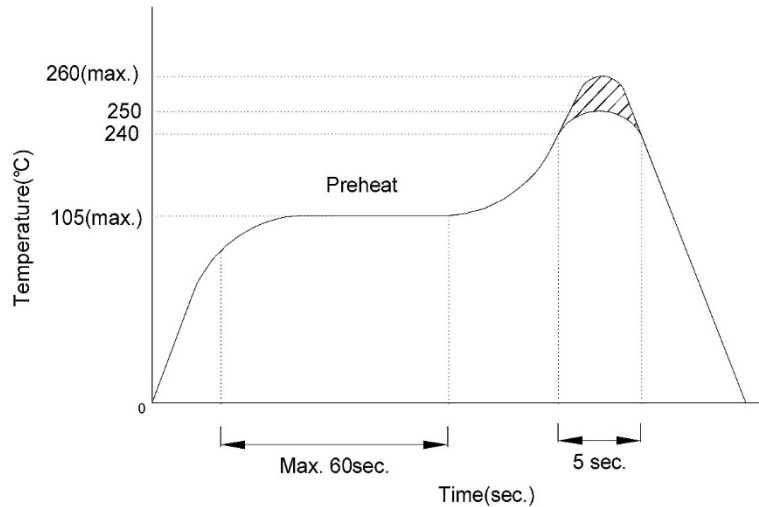
Fig 3. Forward Current vs. Ambient Temperature

Precautions for Use

1. Recommended soldering conditions

a. Wave soldering

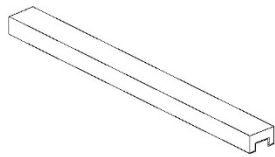
- i. Basic SPEC is ≤ 5 sec. When 260°C . If temperature is higher, time should be shorter ($+10^{\circ}\text{C} \rightarrow -1\text{sec.}$).



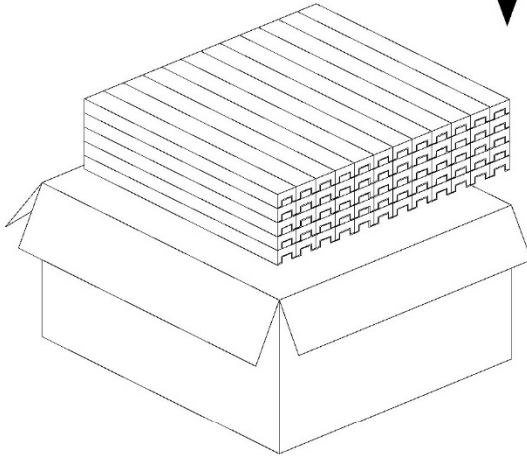
2. Soldering Iron:

- 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.

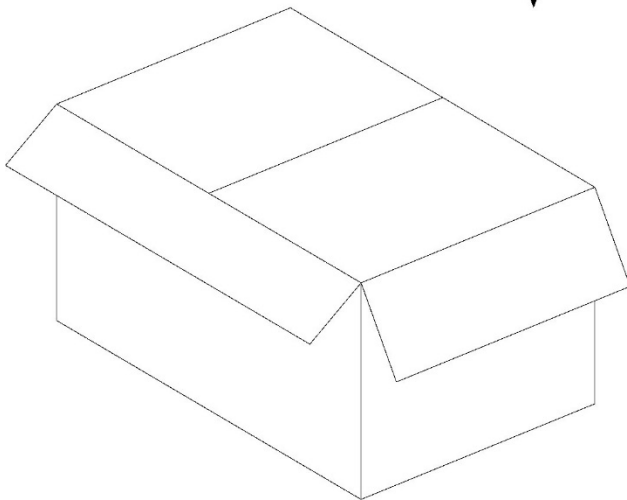
Packing Dimensions



45 PCS Per Tube
Tube Size:
L520*W8.2*H13.8 mm



208 Tubes Per Inner Box
Total Q'TY: 9360 Pcs
Box Size:
L530*W265*H155 mm



2 Inner Boxes Per Carton.
Total Q'TY: 18720 Pcs
Box Size:
L530*W345*H290 mm



Customer Approval Signatures	Approved By	Checked By	Prepared By

Record Of Revisions

Rev.	Comments	Page	Date
0	Released Spec	--	11/07/13