

# PRODUCT SPECIFICATION

*Part Number*  
**PDC56A-CxDW01**

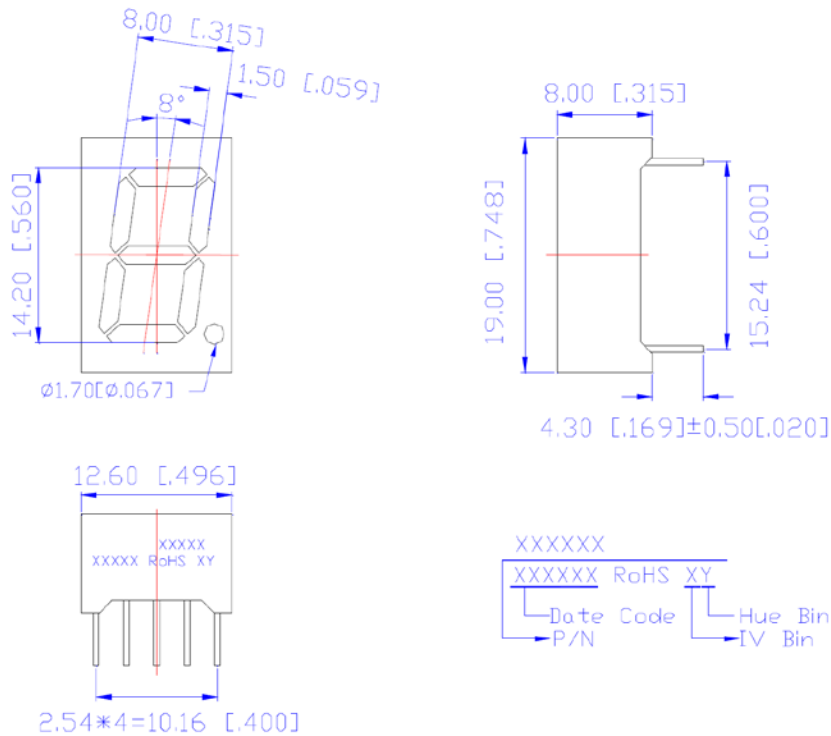
## Details

- 0.56" (14.20mm) LED Display
- 1 Digit, 7 Segment
- Common Anode or Common Cathode
- InGaN Chip Material
- Emitting Color: White

## 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  $\pm 0.25$  [0.010] unless otherwise noted.
2. Bending  $\leq$  Length\*1%
3. All pins are  $\varnothing 0.51$  [0.020]  $\pm 0.1$  [0.004]
4. Specifications subject to change without notice





**Device Selection Guide**

Model Number		Chip		Note
Common Anode	Common Cathode	Material	Emitting Color	
PDC56A-CADW01	PDC56A-CCDW01	InGaN	White	Add “-BW” to end of part number for Black Face, White Segment version

**Absolute Maximum Ratings at Ta=25 °C**

Parameter	Symbol	Rating	Unit
Power Dissipation per Dice	PAD	114	mW
Derating Liner from 25°C per Dice	--	0.4	mA/°C
Continuous Forward Current Per Dice	IAF	30	mA
Peak Current Per Dice (duty cycle 1/10, 1KHz)	IPF	100	mA
Reverse Voltage Per Dice	VR	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	Min.	Typ.	Max.	Unit	Condition
Forward Voltage Per Segment	VF	--	3.2	3.8	V	IF=20mA
Luminous Intensity Per Segment	Iv	--	130	--	mcd	IF=10mA
Chromaticity Coordinates	X	--	0.27	--	--	IF=10mA
	Y	--	0.25	--	--	
Reverse Current	IR	--	--	50	µA	VR=5V
Luminous Intensity Matching Ratio	Iv-m	--	--	2:1	--	IF=10mA

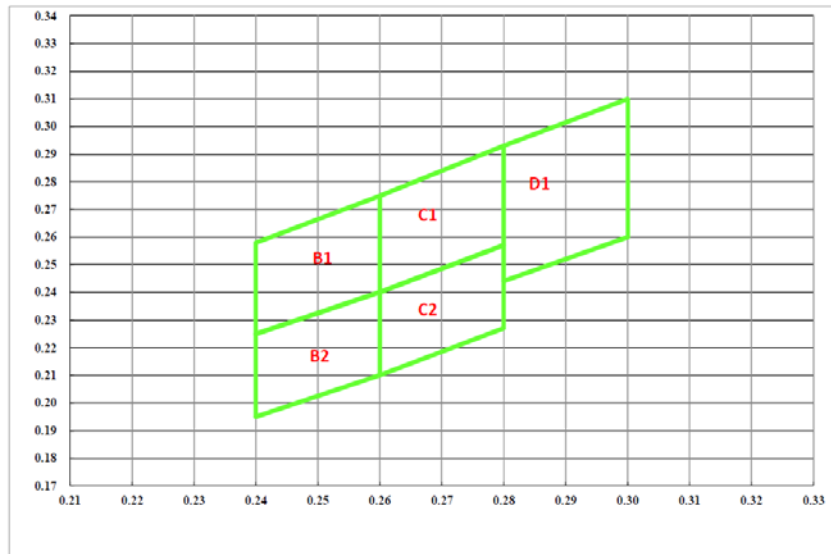
### Luminous General I<sub>v</sub> Bin Grade (I<sub>F</sub>=10mA)

A	B	C	D	E	F	G	H	J	K	L	M
0.155	0.249	0.399	0.640	1.025	1.641	2.627	4.204	6.727	10.764	17.224	27.559
}		}		}		}		}		}	
0.248	0.398	0.639	1.024	1.640	2.626	4.203	6.726	10.763	17.223	27.558	44.095
N	P	Q	R	S	T	U	V	W	X	Y	1
44.096	70.555	112.889	180.622	288.997	462.397	739.836	1183.738	1893.982	3030.372	4848.597	7757.756
}		}		}		}		}		}	
70.554	112.888	180.622	288.996	462.396	739.835	1183.737	1893.981	3030.371	4848.596	7757.755	12412.409
2	3	4	5	6	7	8	9				
4034.034	19859.858	31775.773	50841.238	81345.982	130153.573	208245.718	333193.149				
}		}		}		}					
19859.857	31775.772	50841.237	81345.981	130153.572	208245.717	333193.148	533109.039				

Remark: Unit=mcd

\*Tolerance: ±20%

### Color Rank Limits (I<sub>F</sub>=10mA)



B1				
X	0.240	0.240	0.260	0.260
Y	0.225	0.258	0.275	0.240

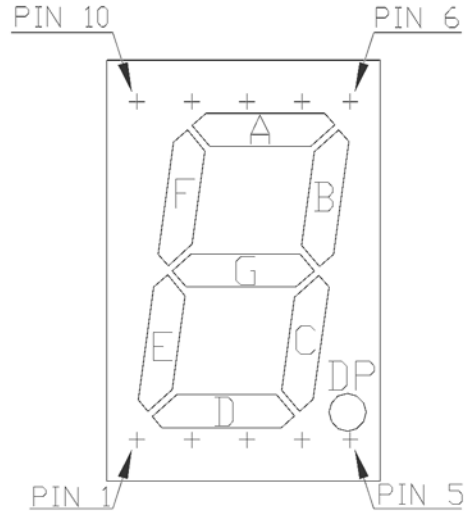
B2				
X	0.240	0.240	0.260	0.260
Y	0.195	0.225	0.240	0.210

C1				
X	0.260	0.260	0.280	0.280
Y	0.240	0.275	0.293	0.257

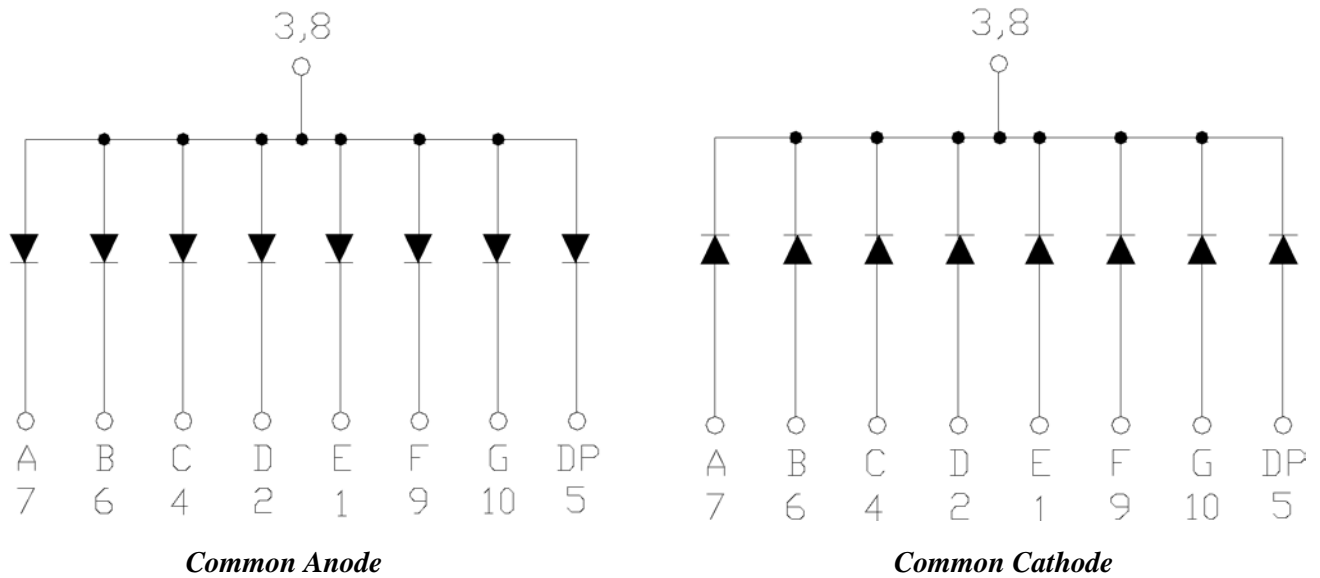
C2				
X	0.260	0.260	0.280	0.280
Y	0.210	0.240	0.257	0.227

D1				
X	0.280	0.280	0.300	0.300
Y	0.244	0.293	0.310	0.260

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



**Internal Circuit Diagram**



### Typical Electrical / Optical Characteristic Curves

- (Ta = 25°C Unless Otherwise Noted)

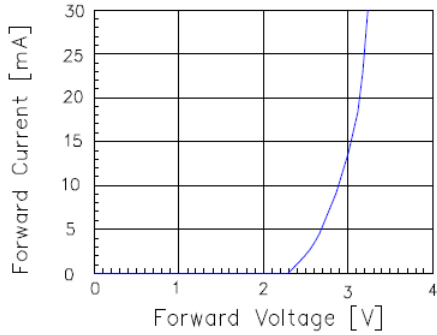


Fig 1. Forward Current vs. Forward Voltage

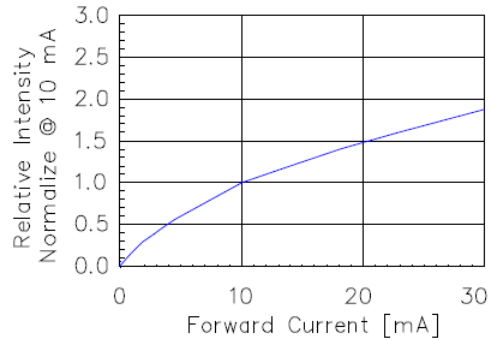


Fig 2. Relative Intensity vs. Forward Current

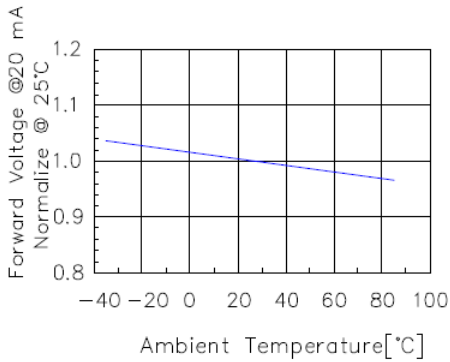


Fig 3. Forward Voltage vs. Temperature

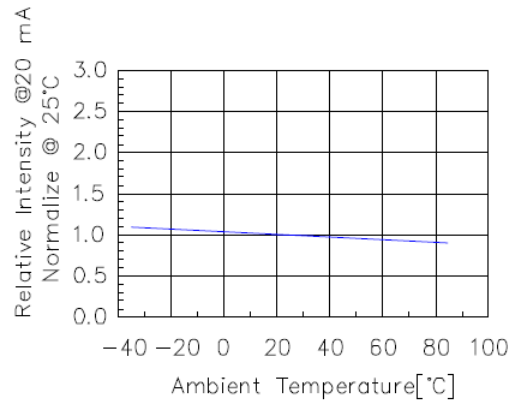


Fig 4. Relative Intensity vs. Temperature

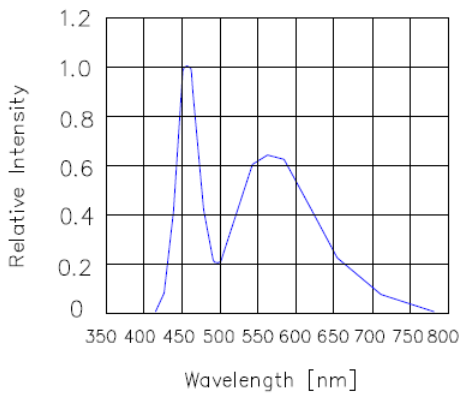


Fig 5. Relative Intensity vs. Wavelength

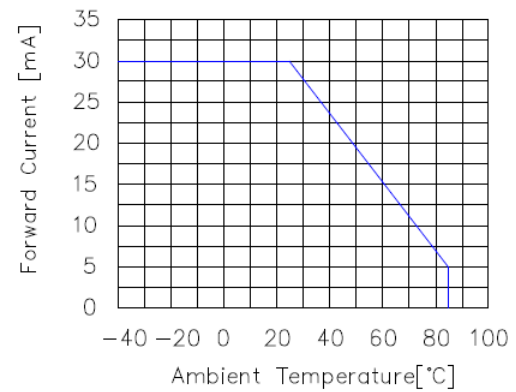


Fig 6. Forward current vs. Temperature

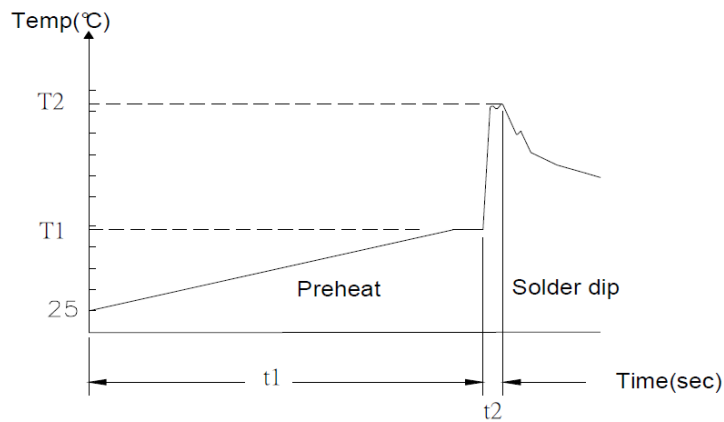
### *Precautions for Use*

1. Recommended soldering conditions

a. Wave soldering profile

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

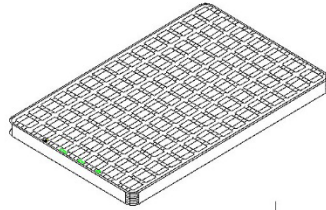
Item	Condition		Note
Preheat	Temperature T1	80 – 120°C	PWB temperature (Soldering side surface)
	Time t1	60 – 180sec	
Solder Dip	Temperature T2	230 – 260°C	Bath temperature
	Time t2	2 – 4sec	Solder tank passage time



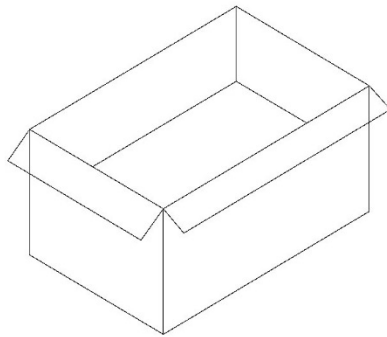
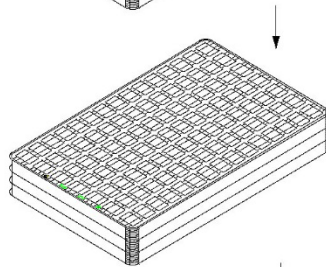
2. Hand Soldering (Iron Condition):

- 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)

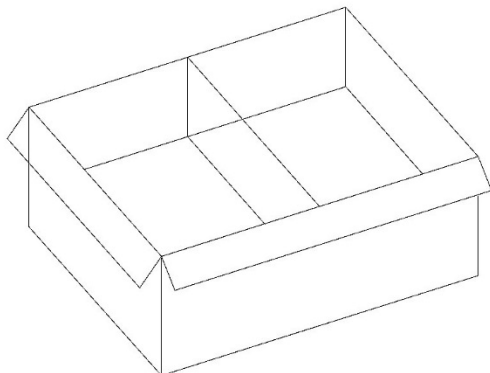
***Packing Dimensions***



1 Tray From Box = 105 PCS  
Tray Size:  
L300 x W190 x H16mm



14 Trays Per Inner Box  
Q'TY: 1470 PCS.  
Box Size:  
L300 x W205 x H240mm



2 Inner Boxes Per Carton.  
Total Q'TY: 2940 Pcs  
Carton Size:  
L431 x W320 x H252mm

