

# PRODUCT SPECIFICATION

*Part Number*  
**PAC50A-CxDxxx**

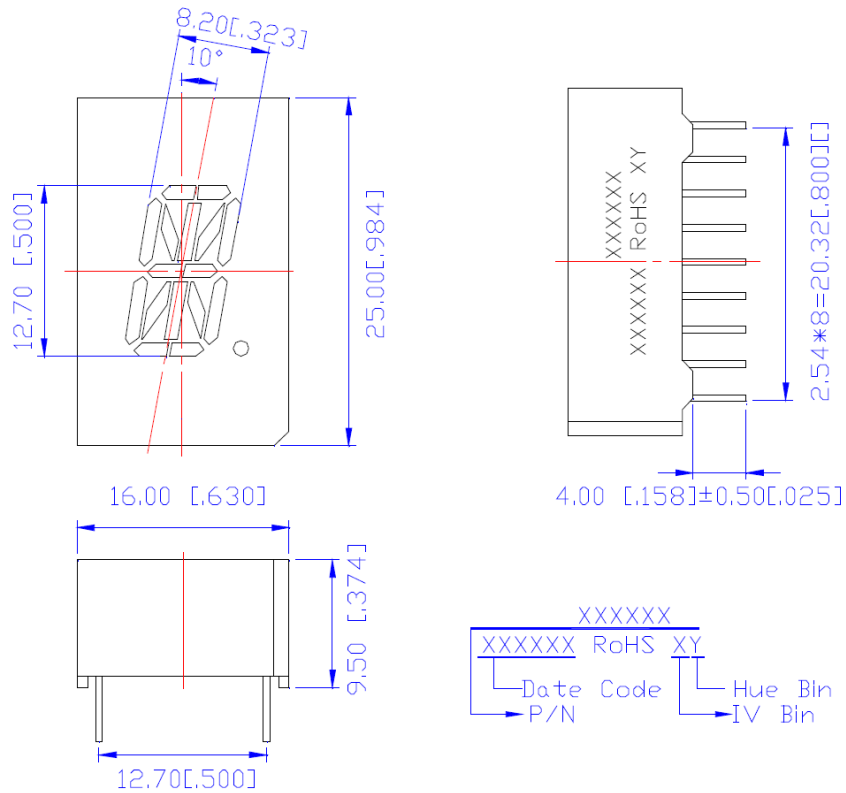
## Details

- 0.50" Alphanumeric LED Display
- 1 Digit, 16 Segments
- Common Anode or Common Cathode
- AlInGaP or InGaN chip material

## Features

- Low power consumption
- RoHS Compliant
- Gray or Black Face with 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		Description	Note
Common Anode	Common Cathode	Material	Emitting Color	Common Anode or Common Cathode	Add "BW" to end of part number for Black Face, White Segment version
PAC50A-CADG05	PAC50A-CCDG05	InGaN	Pure Green		
PAC50A-CADG17	PAC50A-CCDG17	AlInGaP	Yellow Green		
PAC50A-CADY04	PAC50A-CCDY04		Yellow		
PAC50A-CADA11	PAC50A-CCDA11		Amber		
PAC50A-CADR02	PAC50A-CCDR02		Orange-Red		
PAC50A-CADR11	PAC50A-CCDR11		Red		
PAC50A-CADR21	PAC50A-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	--	10	--		
		Y04	--	43	--		
		A11	--	59	--		
		R02	--	30	--		
		R11	--	20	--		
		R21	--	15	--		
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	--		
		R21	--	660/645	--		
Reverse Current	IR		--	--	100	$\mu$ A	VR=5V
Luminous Intensity Matching Ratio	Iv-m		--	--	2:1	--	IF=10mA



**Luminous General lv Bin Grade (IF = 10mA)**

**Color Rank Limits (IF=20mA)**

Remark: Unit=mcd

\*Tolerance: ±20%

Remark: Unit=nm

\*Tolerance: ±1

● Pure Green(G05)

Q	R	S
112.889	180.623	288.997
180.622	288.996	462.396

1	2	3	4	5
515.0	518.0	520.0	522.0	524.0
518.0	520.0	522.0	524.0	527.0

● Yellow Green(G17)

H	J	K
4.204	6.727	10.764
6.726	10.763	17.223

0	1	2	3	4
567.5	569.5	570.5	571.5	573.0
569.5	570.5	571.5	573.0	575.0

● Yellow (Y04)

L	M	N
17.224	27.559	44.096
27.558	44.095	70.554

1	2	3	4	5
583.0	585.0	587.0	589.0	591.0
585.0	587.0	589.0	591.0	593.0

● Amber (A11)

M	N	P
27.559	44.096	70.555
44.095	70.554	112.888

● Orange-Red (R02)

L	M	N
17.224	27.559	44.096
27.558	44.095	70.554

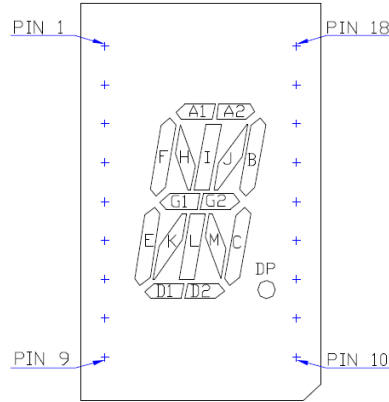
● Red (R11)

K	L	M
10.764	17.224	27.559
17.223	27.558	44.095

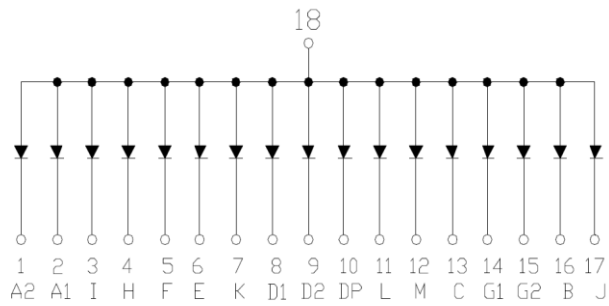
● Deep Red(R21)

J	K	L
6.727	10.764	17.224
10.763	17.223	27.558

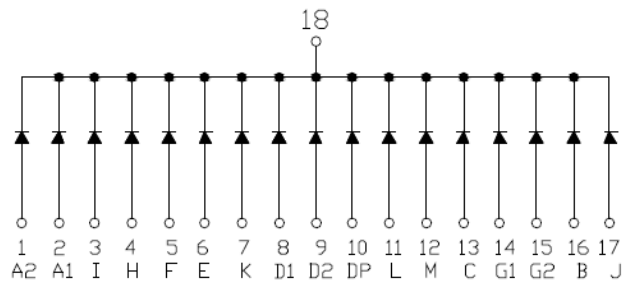
**All Light-On Segments Feature & Pad Position**



**Internal Circuit Diagram**



**Common Anode**



**Common Cathode**

### Typical Electrical / Optical Characteristic Curves

- (Ta = 25°C Unless Otherwise Noted)

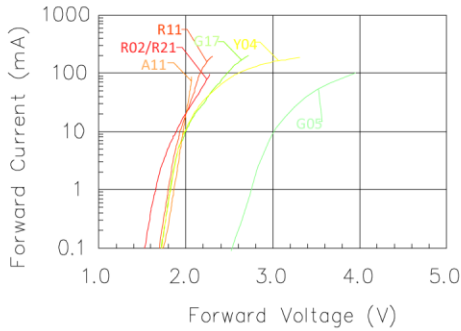


Fig 1. Forward Current vs. Forward Voltage

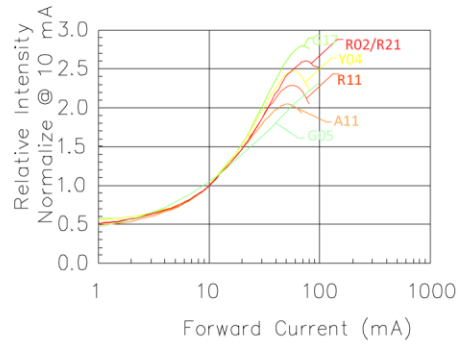


Fig 2. Relative Intensity vs. Forward Current

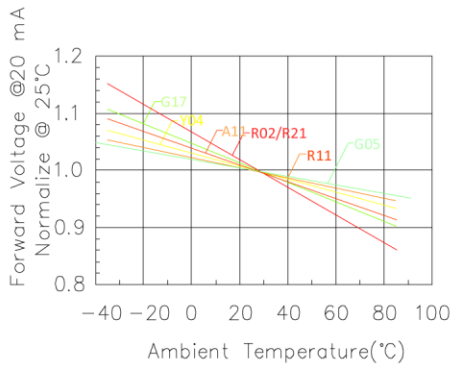


Fig 3. Forward Voltage vs. Temperature

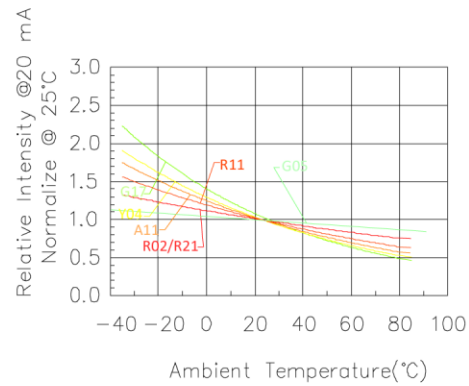


Fig 4. Relative Intensity vs. Temperature

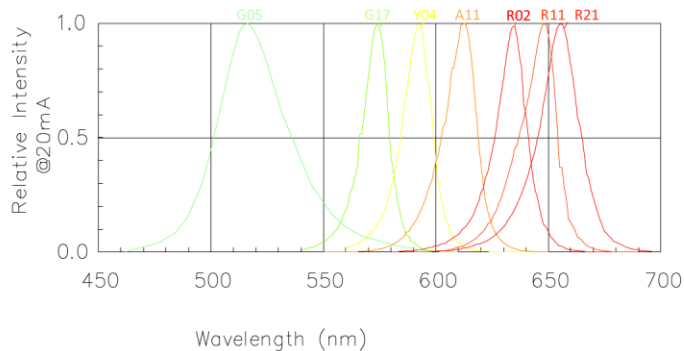


Fig 5. Relative Intensity vs. Wavelength

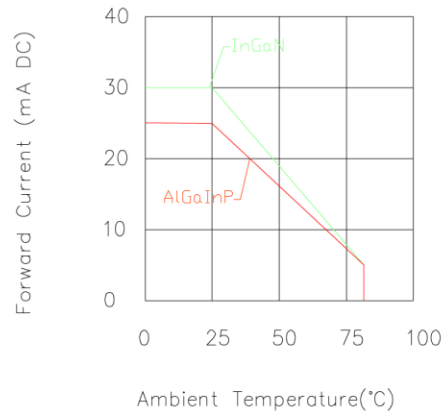


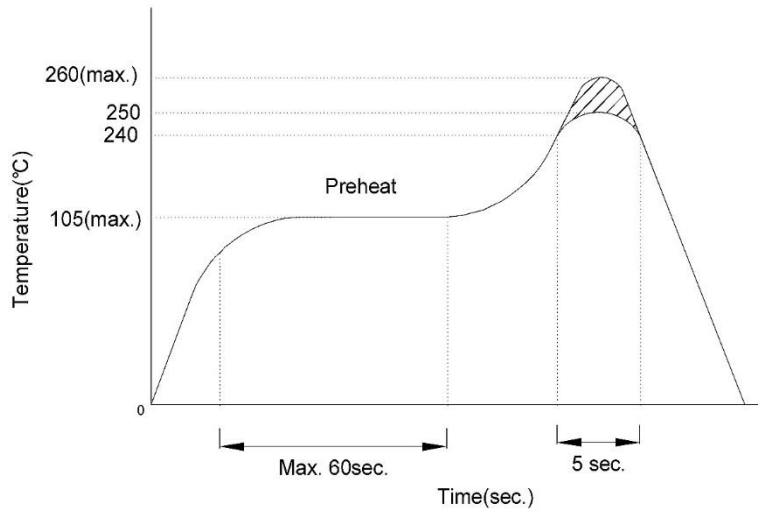
Fig 3. Forward Current vs. Ambient Temperature

### *Precautions for Use*

#### 1. Recommended soldering conditions

##### a. Wave soldering

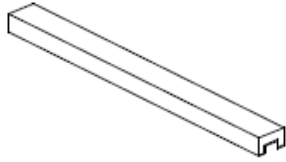
- i. Basic SPEC is  $\leq 5$ sec. When 260°C. If temperature is higher, time should be shorter (+10°C → -1sec.).



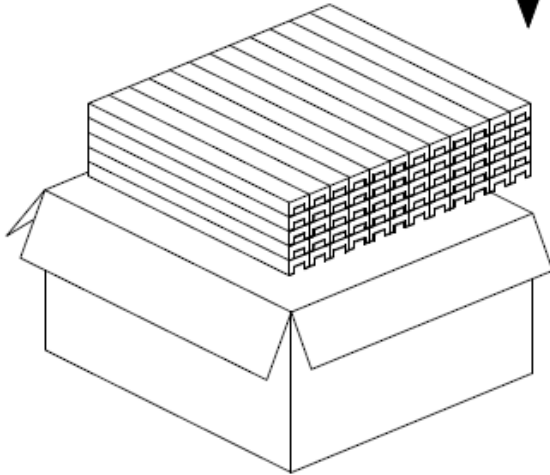
#### 2. Soldering Iron:

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

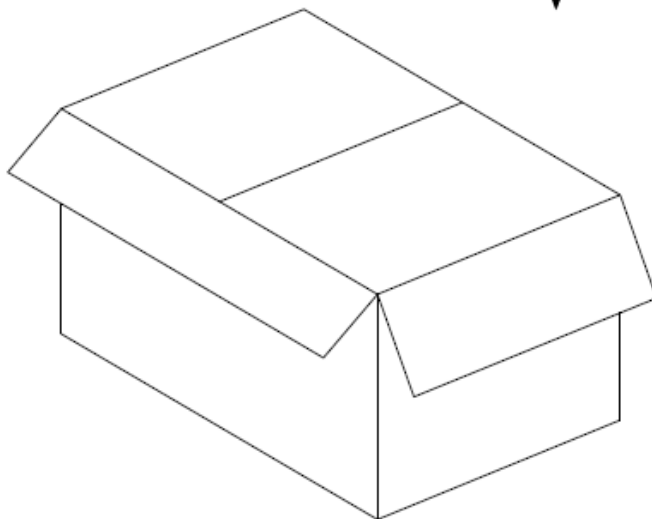
### *Packing Dimensions*



20 PCS Per Tube  
Tube Size:  
L520\*W23\*H21 mm



60 Tubes Per Inner Box  
Total Q'TY: 1200 Pcs  
Box Size:  
L530\*W265\*H155 mm



2 Inner Boxes Per Carton.  
Total Q'TY: 2400 Pcs  
Box Size:  
L530\*W345\*H290 mm



