Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

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Double Digits High Brightness, LED Numeric Display

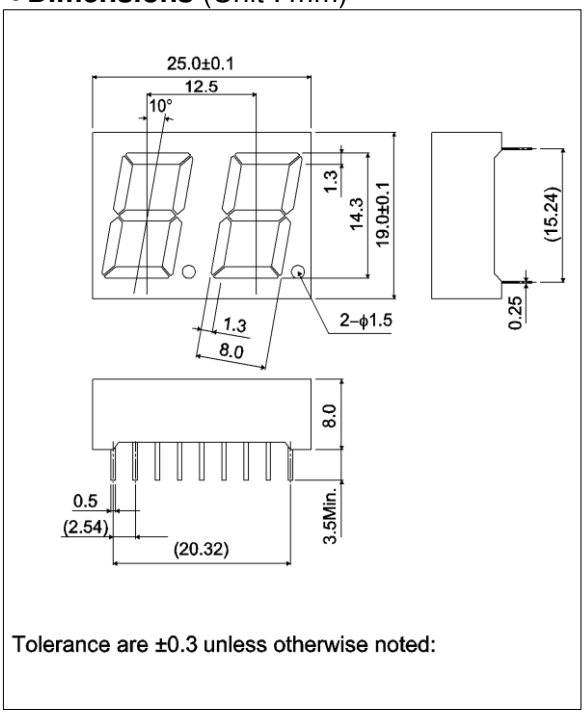
LBP-602 A / K2 Series Datasheet

LBP-602 A / K2 series are the numberical display units featuring ROHM's in-house 4-element (AlGaInP) high-brightness LED dies.Their luminous intensity is top class in the industry while degradation is considerably slow, which helps to keep illumination vividness almost unchanged and the image of sets high over a long period of time.

●Features

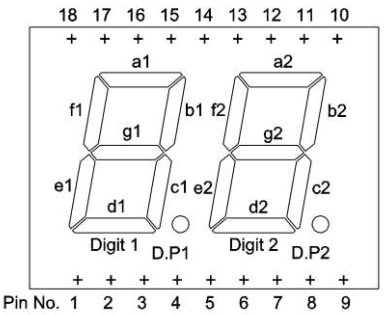
1) 14.3mm for letter height, two-lines LED numerical displays.
2) About 10 times more luminous intensity than the conventional products by use of 4-element LED dies. (in case of orange color)
3) The same luminous intensity as the conventional products at their 1/10 of current, which contributes lots to energy-saving of sets.
4) Light-leakage from segments probable with the small display packages is very rare.
5) Both anode common type and cathode common type are available in lineup for each color.

●Dimensions (Unit : mm)



Tolerance are ±0.3 unless otherwise noted:

●Pin assignments

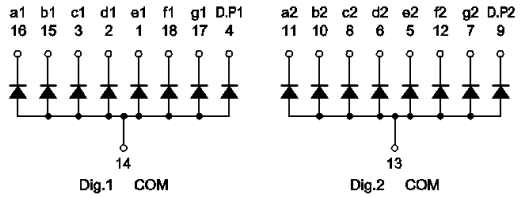


Pin No.	Function
1	Segment "e1"
2	Segment "d1"
3	Segment "c1"
4	D.P1
5	Segment "e2"
6	Segment "d2"
7	Segment "g2"
8	Segment "c2"
9	D.P2
10	Segment "b2"
11	Segment "a2"
12	Segment "f2"
13	Digit 2 Common
14	Digit 1 Common
15	Segment "b1"
16	Segment "a1"
17	Segment "g1"
18	Segment "f1"

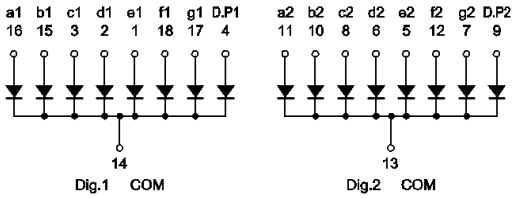
●Selection guide

Common \ Emitting color	Red	Orange	Yellow	Green
Anode	LBP-602VA2	LBP-602DA2	LBP-602YA2	LBP-602MA2
Cathode	LBP-602VK2	LBP-602DK2	LBP-602YK2	LBP-602MK2

●Internal circuit schematic



Anode Common



Cathode Common

●Absolute maximum ratings (T_a = 25°C)

Parameter	Symbol	Red	Orange	Yellow	Green	Unit
		LBK2 -602VA2 / VK2	LBK2 -602DA2 / DK2	LBK2 -602YA2 / YK2	LBK2 -602MA2 / MK2	
Power dissipation	P_D	896	896	896	896	mW
Power dissipation	P_D / seg	56	56	56	56	mW
Forward current	I_F	20	20	20	20	mA
Peak forward current	I_{FP}	60 *	60 *	60 *	60 *	mA
Reverse voltage	V_R	5	5	5	5	V
Operating temperature	T_{opr}	−25 to +75				°C
Storage temperature	T_{stg}	−30 to +85				°C

* Pulse width 1ms, duty 1 / 5

●Electrical and optical characteristics (T_a = 25°C)

Parameter	Symbol	Conditions	Red		Orange		Yellow		Green		Unit
			Typ.	Max.	Typ.	Max.	Typ.	Max.	Typ.	Max.	
Forward voltage	V_F	I_F =10mA	1.9	2.6	1.9	2.6	1.9	2.6	1.9	2.6	V
Reverse current	I_R	V_R =3V	-	100	-	100	-	100	-	100	μA
Peak wavelength	λ_p	I_F=10mA	650	-	605	-	590	-	572	-	nm
Spectral line halfwidth	$\Delta\lambda$	I_F=10mA	20	-	20	-	20	-	20	-	nm

◎ Not designed for radiation resistance.

●Luminous intensity

Parameter	λ_p	Type	Min.	Typ.	Max.	Unit
Red	650	LBK2 -602VA2	14	36	-	mcd
		LBK2 -602VK2				
Orange	605	LBK2 -602DA2	56	250	-	mcd
		LBK2 -602DK2				
Yellow	590	LBK2 -602YA2	90	450	-	mcd
		LBK2 -602YK2				
Green	572	LBK2 -602MA2	36	100	-	mcd
		LBK2 -602MK2				

◎ Condition I_F=10mA

●Electrical and optical characteristics curves

Fig.1 Forward Current vs. Forward Voltage

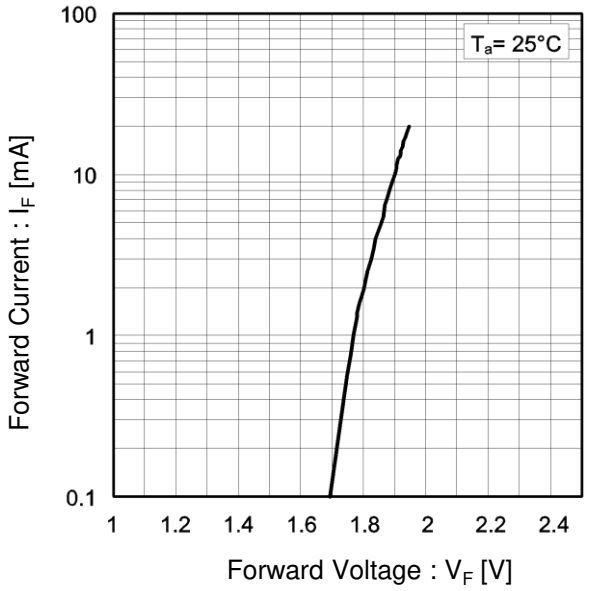


Fig.2 Relative Luminous Intensity vs. Forward Current

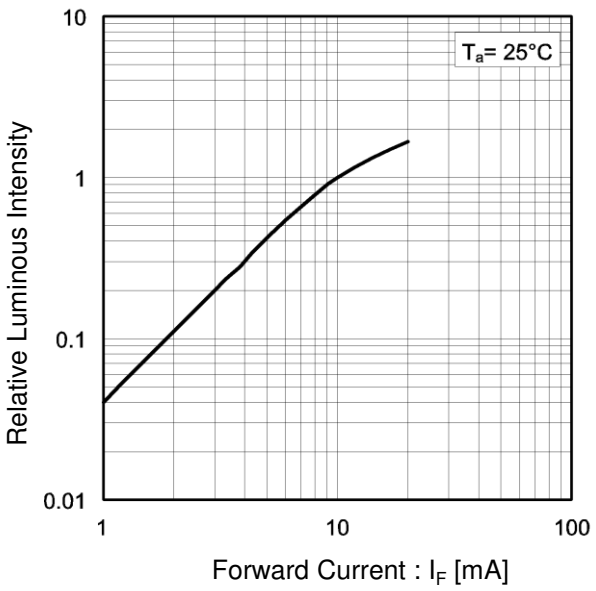


Fig.3 Relative Luminous Intensity vs. Case Temperature

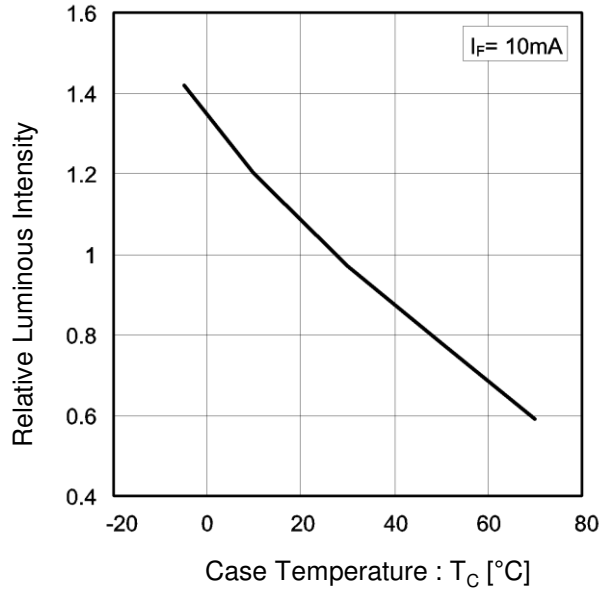
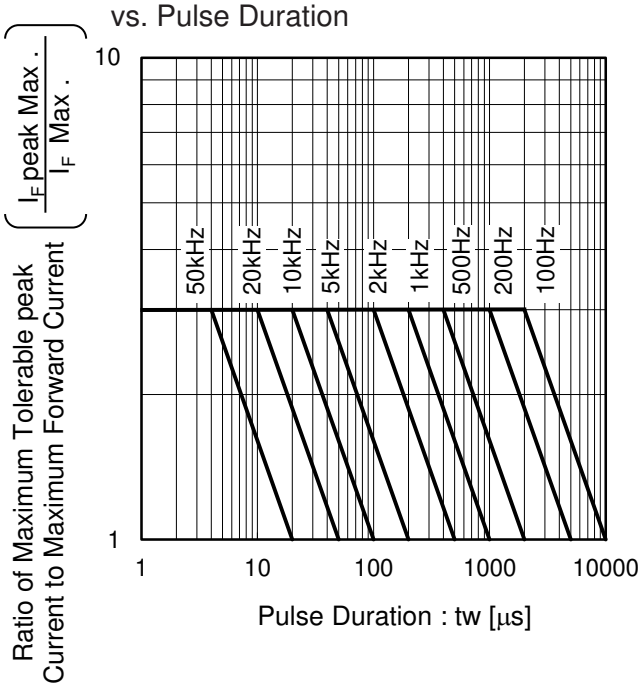
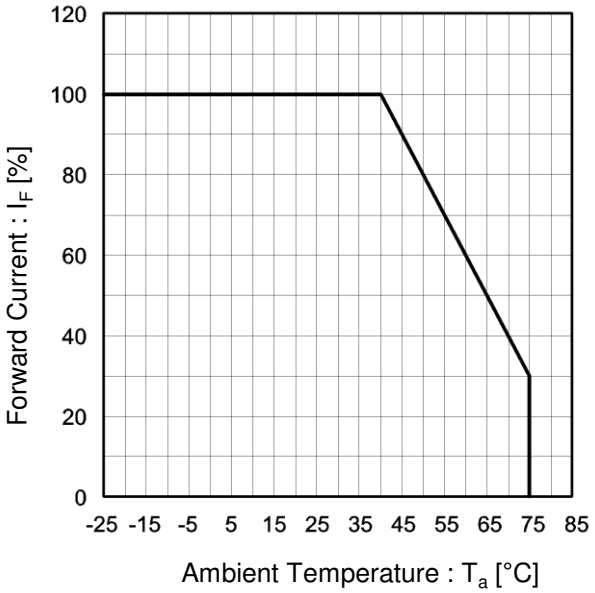


Fig.4 Ratio of Maximum Tolerable Peak Current vs. Pulse Duration



●Electrical and optical characteristics curves

Fig.5 Derating



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2) Before you use our Products, please contact our sales representative and verify the latest specifications :

3) Although ROHM is continuously working to improve product reliability and quality, semiconductors can break down and malfunction due to various factors.
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7) The Products specified in this document are not designed to be radiation tolerant.

8) For use of our Products in applications requiring a high degree of reliability (as exemplified below), please contact and consult with a ROHM representative : transportation equipment (i.e. cars, ships, trains), primary communication equipment, traffic lights, fire/crime prevention, safety equipment, medical systems, servers, solar cells, and power transmission systems.

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