Double Digits LED Numeric Display

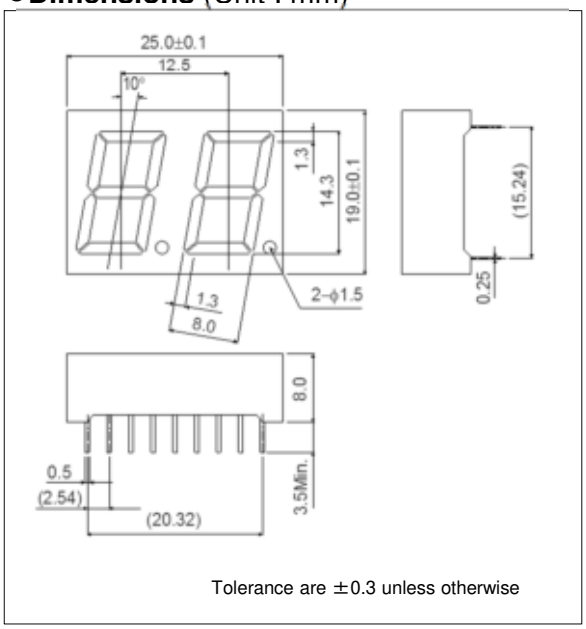
LB-602 A / K2 Series Datasheet

LB-602 A / K2 series is designed to use in the light. Materials of emission are GaAsP on GaP, AlGaInP GaP. This is the height of a letter 14.3mm, double digits LED Numeric Display that is packed by epoxy resin.

●Features

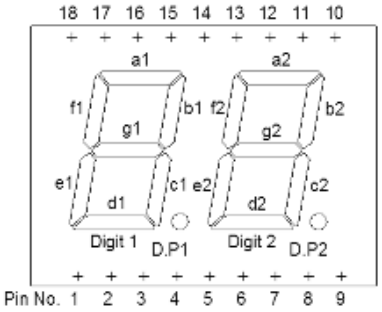
1) The height of a letter is 14.3mm.
2) Dimension is 25.0×19.0×8.0mm.
3) The package of surface color is black. Color of segment is colored in emitting color.
4) Each color has anode common and cathode common respectively.

●Dimensions (Unit : mm)



Tolerance are ±0.3 unless otherwise

●Pin assignments



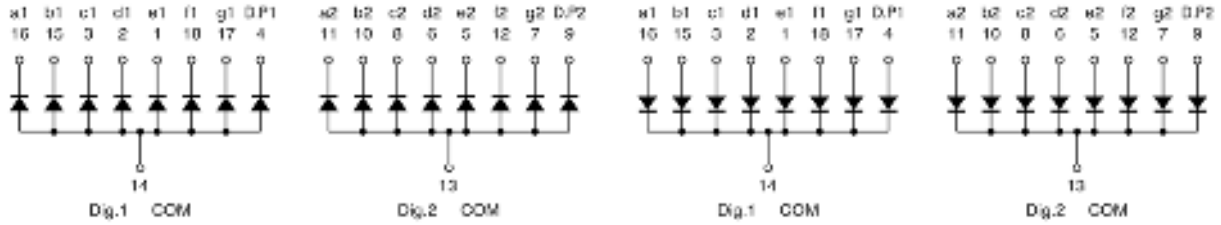
Pin No.	Function
1	Segment "e1"
2	Segment "d1"
3	Segment "c1"
4	D.P1
5	Segment "e2"
6	Segment "d2"
7	Segment "g2"
8	Segment "c2"
9	D.P2
10	Segment "b2"
11	Segment "a2"
12	Segment "f2"
13	Digit 2 Common
14	Digit 1 Common
15	Segment "b1"
16	Segment "a1"
17	Segment "g1"
18	Segment "f1"

●Selection guide

Common \ Emitting color	Red	Red (High brightness)	Orange (High brightness)	Yellow (High brightness) (NRND)	Green
Anode	LB-602VA2	LB-602AA2	LB-602EA2	LB-602XA2	LB-602MA2
Cathode	LB-602VK2	LB-602AK2	LB-602EK2	LB-602XK2	LB-602MK2

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●Internal circuit schematic



Anode common Cathode common

●Absolute maximum ratings (T_a = 25°C)

Parameter	Symbol	Red	Red (High brightness)	Orange (High brightness)	Yellow (High brightness) (NRND)	Green	Unit
		LB-602VA2 / VK2	LB-602AA2 / AK2	LB-602EA2 /EK2	LB-602XA2 / XK2	LB-602MA2 / MK2	
Power dissipation	P_D	960	1040	1040	1040	960	mW
Power dissipation	P_D / seg	60	65	65	65	60	mW
Forward current	I_F	20	25	25	25	20	mA
Peak forward current	I_{FP}	60 *1	50 *2	50 *2	50 *2	60 *1	mA
Reverse voltage	V_R	5	5	5	5	5	V
Operating temperature	T_{opr}	−25 to +75					°C
Storage temperature	T_{stg}	−30 to +85					°C

*1 Pulse width 1ms, duty 1 / 5

*2 Pulse width 0.1ms, duty 1 / 10

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

Parameter	Symbol	Conditions	Red		Red (High brightness)		Orange (High brightness)		Yellow (High brightness) (NRND)		Green		Unit
			Typ.	Max.	Typ.	Max.	Typ.	Max.	Typ.	Max.	Typ.	Max.	
Forward voltage	V_F	I_F =10mA	2.0	2.8	2.05*	2.6*	2.05*	2.6*	2.05*	2.6*	2.1	2.8	V
Reverse current	I_R	V_R =3V	-	100	-	100	-	100	-	100	-	100	μA
Peak wavelength	λ_p	I_F=10mA	650	-	626*	-	610*	-	589*	-	563	-	nm
Spectral line halfwidth	$\Delta\lambda$	I_F=10mA	40	-	18*	-	17*	-	15*	-	40	-	nm

◎ Not designed for radiation resistance.

* Shows the number on the condition of I_F=20mA.

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●**Luminous intensity**

Parameter	λ_p	Type	Min.	Typ.	Max.	Unit
Red	650	LB-602VA2	5.6	16	-	mcd
		LB-602VK2				
Red (High brightness)	626	LB-602AA2	36	90	-	mcd
		LB-602AK2				
Orange (High brightness)	610	LB-602EA2	36	90	-	mcd
		LB-602EK2				
Yellow (High brightness) (NRND)	589	LB-602XA2	36	90	-	mcd
		LB-602XK2				
Green	563	LB-602MA2	9	25	-	mcd
		LB-602MK2				

◎ Condition I_F=10mA

●**Iv classification**

Parameter	Type	Item	Iv classification	Unit
Red	LB-602VA2 LB-602VK2	" L "	5.6 to 11	mcd
		" M "	9.0 to 18	mcd
		" N "	14 to 28	mcd
		" P "	22 to 45	mcd
		" Q "	36 to (71)	mcd
Red (High brightness)	LB-602AA2 LB-602AK2	" Q "	36 to 71	mcd
		" R "	56 to 110	mcd
		" S "	90 to 180	mcd
		" T "	140 to 280	mcd
		" U "	220 to (450)	mcd
Orange (High brightness)	LB-602EA2 LB-602EK2	" Q "	36 to 71	mcd
		" R "	56 to 110	mcd
		" S "	90 to 180	mcd
		" T "	140 to 280	mcd
		" U "	220 to (450)	mcd
Green	LB-602MA2 LB-602MK2	" M "	9.0 to 18	mcd
		" N "	14 to 28	mcd
		" P "	22 to 45	mcd
		" Q "	36 to 71	mcd
		" R "	56 to (110)	mcd

◎ Condition I_F=10mA

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●Electrical and optical characteristics curves

Fig.1 Forward Current vs. Forward Voltage

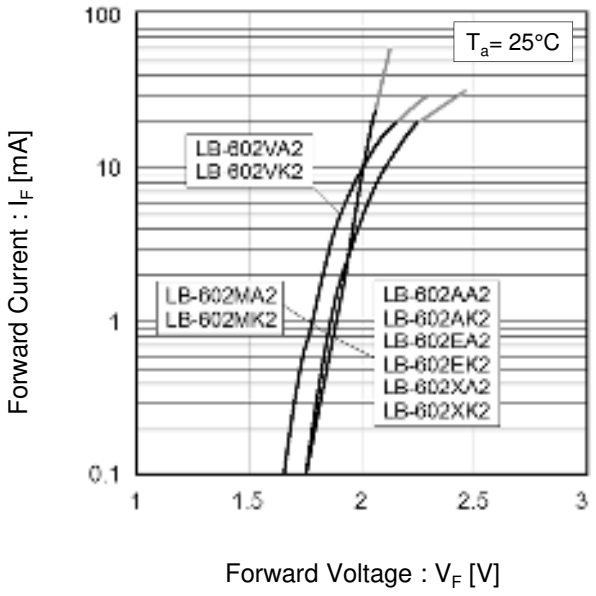


Fig.2 Relative Luminous Intensity vs. Forward Current

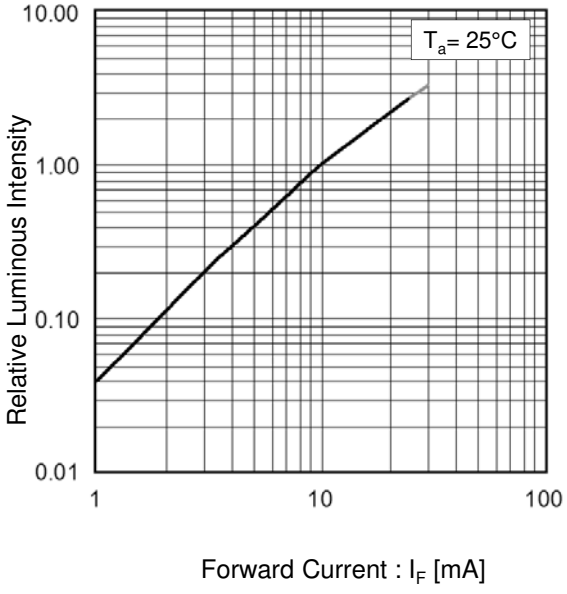


Fig.3 Relative Luminous Intensity vs. Case Temperature

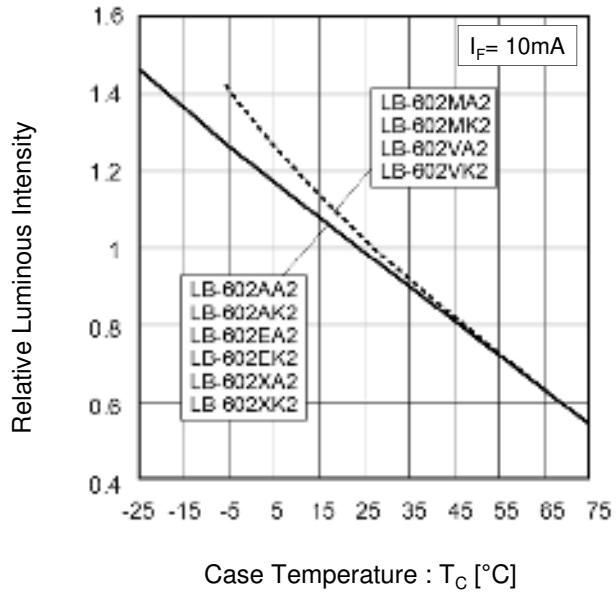
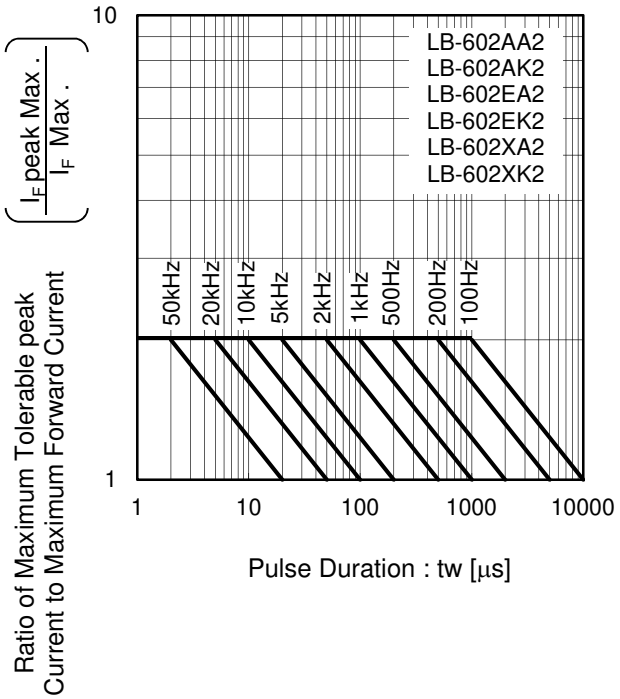


Fig.4 Ratio of Maximum Tolerable Peak Current vs. Pulse Duration



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●Electrical and optical characteristics curves

Fig.5 Ratio of Maximum Tolerable Peak Current vs. Pulse Duration

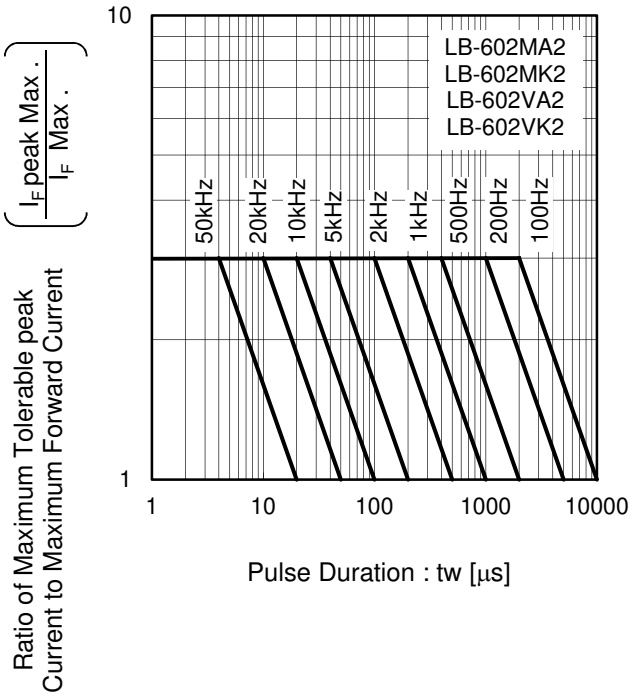
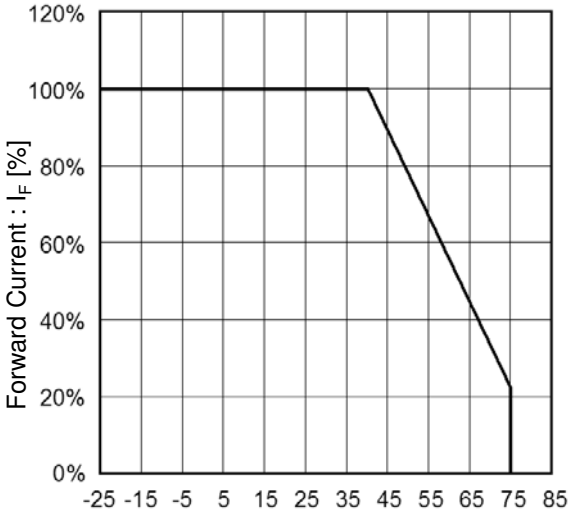


Fig.6 Derating



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lb-602ak2 - Web Page

Distribution Inventory

Part Number	lb-602ak2
Package	LB-602AK2
Unit Quantity	300
Minimum Package Quantity	
Packing Type	Filmpack
Constitution Materials List	inquiry
RoHS	Yes