# Three-digit LED numeric displays

LB-303AK Series Datasheet

The LB-303AK series were designed to meet the need for multi-digit numeric displays.

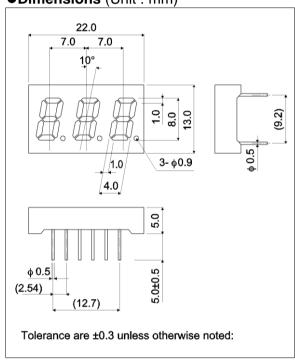
These LED numeric displays use GaAsP on GaP (red) , GaP (green) for the emitting material (with the exception of green) and are housed in an epoxy resin package.

They are three-digit displays with a character height of 8.0 mm.

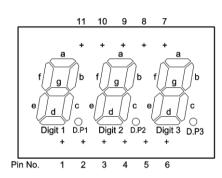
### Features

- 1) Height of character: 8.0 mm
- 2) High efficiency in a compact package.
- 3) Common anode and common cathode configurations are available for red and green.
- 4) The package surface is painted black and the segments are colored the display color.

### ● Dimensions (Unit: mm)

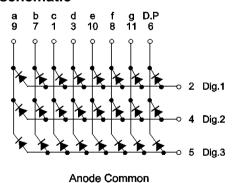


### Pin assignments



Pin No.	Function
1	Segment "c"
2	Digit 1 Common
3	Segment "d"
4	Digit 2 Common
5	Digit 3 Common
6	Segment D.P
7	Segment "b"
8	Segment "f"
9	Segment "a"
10	Segment "e"
11	Segment "g"

#### Internal circuit schematic



a b c d e f g D.P 9 7 1 3 10 8 11 6 2 Dig.1 2 Dig.2 Cathode Common

## Selection guide

Emitting color Common	Red	Green
Anode	LB-303VA	LB-303MA
Cathode	LB-303VK	LB-303MK

# ●Absolute maximum ratings (T<sub>a</sub> = 25°C)

Parameter	Symbol	Red	Green	Unit	
		LB-303VA / VK LB-303MA / MK		<u> </u>	
Power dissipation	$P_D$	960	1440	mW	
Power dissipation	P <sub>D</sub> / seg	40	60	mW	
Forward current	l <sub>F</sub>	15	20	mA	
Peak forward current	I <sub>FP</sub>	60 *	60 *	mA	
Reverse voltage	$V_R$	5	5	V	
Operating temperature	$T_{opr}$	−25 t	°C		
Storage temperature	T <sub>stg</sub>	–30 t	°C		

<sup>\*</sup> Pulse width 1ms, duty 1 / 5

# ●Electrical and optical characteristics (T<sub>a</sub> = 25°C)

Parameter Symbol	Symbol	Conditions	Red		Green			Unit	
			Min.	Тур.	Max.	Min.	Тур.	Max.	
Forward voltage	$V_{F}$	I <sub>F</sub> =10mA	-	2.0	2.8	-	2.1	2.8	V
Reverse current	I <sub>R</sub>	$V_R = 3V$	-	-	100	-	-	100	μΑ
Peak wavelength	$\lambda_{p}$	I <sub>F</sub> =10mA	-	650	-	-	563	1	nm
Spectral line halfwidth	Δλ	I <sub>F</sub> =10mA	-	40	-	1	40	-	nm

O Not designed for radiation resistance.

# Luminous intensity

Parameter	$\lambda_{p}$	Туре	Min.	Тур.	Max.	Unit
Red 650	650	LB-303VA	1.4	4.0		mad
	LB-303VK	1.4	4.0	-	mcd	
Green 563	LB-303MA	2.2	6.3		mad	
	363	LB-303MK	2.2	0.3		mcd

© Condition I<sub>F</sub>=10mA

## •Electrical and optical characteristics curves

Fig.1 Forward Current vs. Forward Voltage

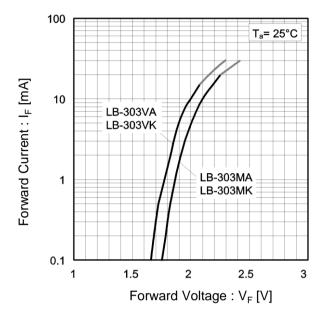


Fig.2 Relative Luminous Intensity vs. Forward Current

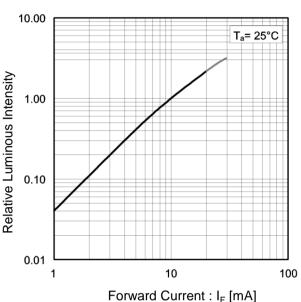


Fig.3 Relative Luminous Intensity vs. Case Temperature

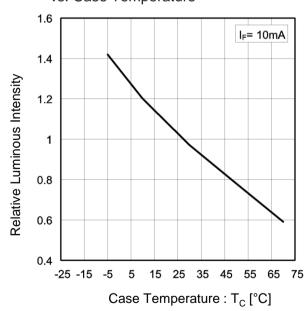
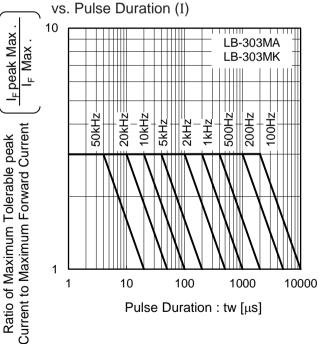


Fig.4 Ratio of Maximum Tolerable Peak Current



# •Electrical and optical characteristics curves

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

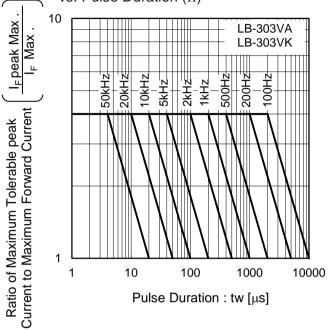
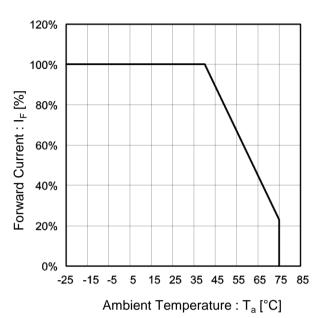


Fig.6 Derating



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