

Single Digit LED Numeric Display

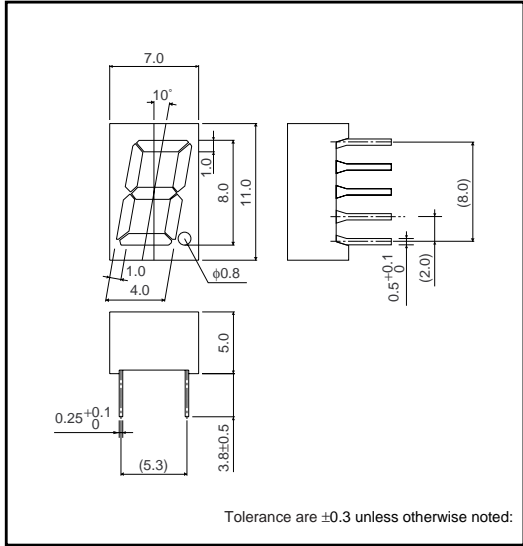
LA-301 B / L Series

LA-301 B / L series is developed because of the demand for small single digit LED Numeric Display. Materials of emission are GaAsP on GaP, AlGaInP, GaP and GaN. This is the height of a letter 8mm, single digit LED Numeric Display that is packed by epoxy resin.

●Features

- 1) The height of a letter is 8mm.
- 2) The light don't leak from the segment in spite of the small package.
- 3) The package of surface color is black. Color of segment is colored in emitting color. (Blue color is only milky white)
- 4) Each color has anode common and cathode common respectively.

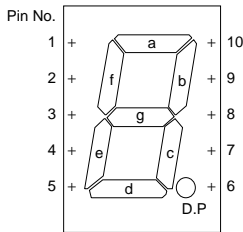
●Dimensions (Unit : mm)



●Selection guide

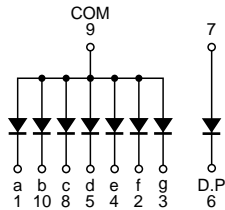
Emitting color Common	Red	Red (High brightness)	Orange (High brightness)	Yellow (High brightness)	Green	Blue
	Anode	LA-301VB	LA-301AB	LA-301EB	LA-301XB	LA-301MB
Cathode	LA-301VL	LA-301AL	LA-301EL	LA-301XL	LA-301ML	LA-301BL

●Pin assignments

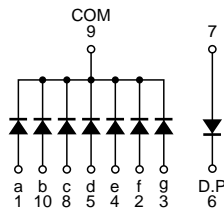


Pin No.	Function
1	Segment "a"
2	Segment "f"
3	Segment "g"
4	Segment "e"
5	Segment "d"
6	D.P Cathode
7	D.P Anode
8	Segment "c"
9	Common
10	Segment "b"

●Equivalent circuit (anode common)



(cathode common)



LED displays

●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Red	Red (High brightness)	Orange (High brightness)	Yellow (High brightness)	Green	Blue	Unit
		LA-301VB / VL	LA-301AB / AL	LA-301EB / EL	LA-301XB / XL	LA-301MB / ML	LA-301BB / BL	
Power dissipation	P _D	320	520	520	520	480	336	mW
Power dissipation	P _D / seg	40	65	65	65	60	42	mW
Forward current	I _F	15	25	25	25	20	10	mA
Peak forward current	I _{FP}	60 *1	50 *2	50 *2	50 *2	60 *1	50 *2	mA
Reverse voltage	V _R	5	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 characteristics (Ta=25°C)

Parameter	Symbol	Conditions	Red		Red (High brightness)		Orange (High brightness)		Yellow (High brightness)		Green		Blue		Unit
			Typ.	Max.	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	3.6	4.2	V
Reverse current	I _R	V _R =3V	—	100	—	100	—	100	—	100	—	100	—	100	μA
Peak wavelength	λ _P	I _F =10mA	650	—	626*	—	610*	—	589*	—	563	—	470	—	nm
Spectral line half width	Δλ	I _F =10mA	40	—	18*	—	17*	—	15*	—	40	—	26	—	nm

©The products are not radiations resistant.

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

●Luminous intensity

Color	λ _P (nm)	Type	Min.	Typ.	Unit
Red	650	LA-301VB	3.6	10	mcd
		LA-301VL			
Red (High brightness)	626	LA-301AB	36	90	mcd
		LA-301AL			
Orange (High brightness)	610	LA-301EB	36	90	mcd
		LA-301EL			
Yellow (High brightness)	589	LA-301XB	36	90	mcd
		LA-301XL			
Green	563	LA-301MB	3.6	10	mcd
		LA-301ML			
Blue	470	LA-301BB	14	56	mcd
		LA-301BL			

© A condition of measurement is I_F=10mA.

LED displays

●Electrical and optical characteristic curve

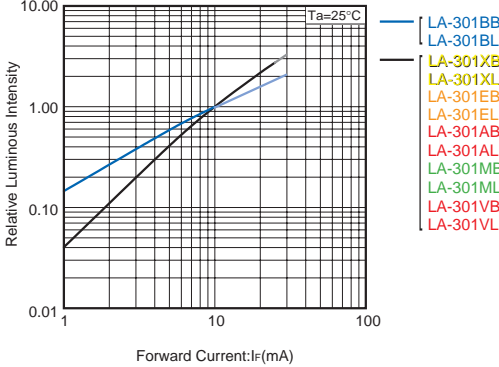
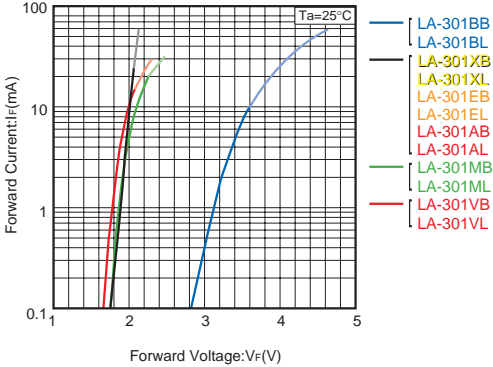


Fig.1 Forward Current - Forward Voltage

Fig.2 Relative Luminous Intensity - Forward Current

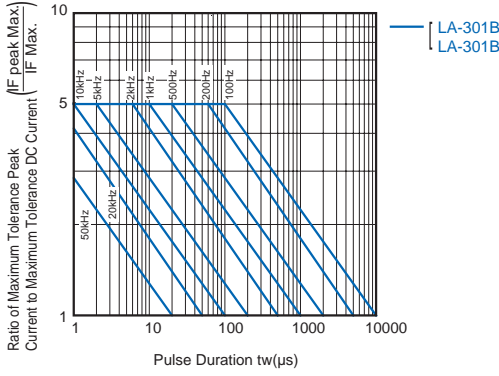
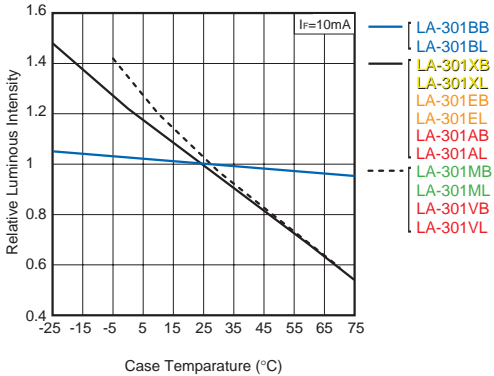


Fig.3 Relative Luminous Intensity - Case Temperature

Fig.4 Ratio of Maximum Tolerable Peak Current - Pulse Duration (I)

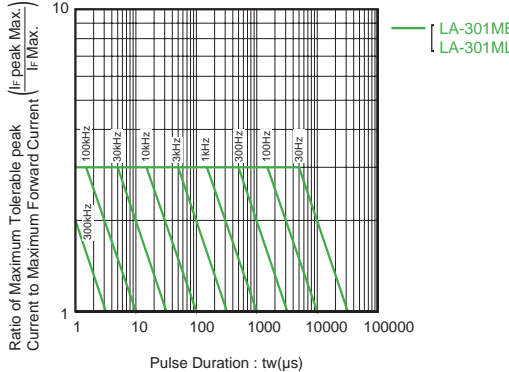
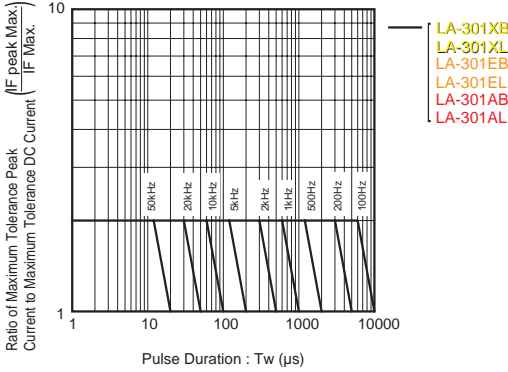


Fig.5 Ratio of Maximum Tolerable Peak Current - Pulse Duration (II)

Fig.6 Ratio of Maximum Tolerable Peak Current - Pulse Duration (III)

LED displays

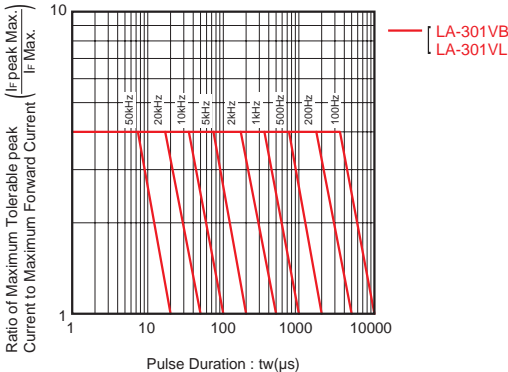


Fig.7 Ratio of Maximum Tolerable Peak Current - Pulse Duration (IV)

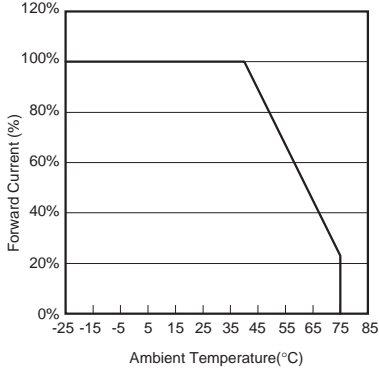


Fig.8 Derating

Notes

- No technical content pages of this document may be reproduced in any form or transmitted by any means without prior permission of ROHM CO.,LTD.
- The contents described herein are subject to change without notice. The specifications for the product described in this document are for reference only. Upon actual use, therefore, please request that specifications to be separately delivered.
- Application circuit diagrams and circuit constants contained herein are shown as examples of standard use and operation. Please pay careful attention to the peripheral conditions when designing circuits and deciding upon circuit constants in the set.
- Any data, including, but not limited to application circuit diagrams information, described herein are intended only as illustrations of such devices and not as the specifications for such devices. ROHM CO.,LTD. disclaims any warranty that any use of such devices shall be free from infringement of any third party's intellectual property rights or other proprietary rights, and further, assumes no liability of whatsoever nature in the event of any such infringement, or arising from or connected with or related to the use of such devices.
- Upon the sale of any such devices, other than for buyer's right to use such devices itself, resell or otherwise dispose of the same, no express or implied right or license to practice or commercially exploit any intellectual property rights or other proprietary rights owned or controlled by
- ROHM CO., LTD. is granted to any such buyer.
- Products listed in this document are no antiradiation design.

The products listed in this document are designed to be used with ordinary electronic equipment or devices (such as audio visual equipment, office-automation equipment, communications devices, electrical appliances and electronic toys).

Should you intend to use these products with equipment or devices which require an extremely high level of reliability and the malfunction of which would directly endanger human life (such as medical instruments, transportation equipment, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices), please be sure to consult with our sales representative in advance.

It is our top priority to supply products with the utmost quality and reliability. However, there is always a chance of failure due to unexpected factors. Therefore, please take into account the derating characteristics and allow for sufficient safety features, such as extra margin, anti-flammability, and fail-safe measures when designing in order to prevent possible accidents that may result in bodily harm or fire caused by component failure. ROHM cannot be held responsible for any damages arising from the use of the products under conditions out of the range of the specifications or due to non-compliance with the NOTES specified in this catalog.

Thank you for your accessing to ROHM product informations.

More detail product informations and catalogs are available, please contact your nearest sales office.

ROHM Customer Support System

THE AMERICAS / EUROPE / ASIA / JAPAN

www.rohm.com

Contact us : webmaster@rohm.co.jp