High efficiency, single-digit numeric displays

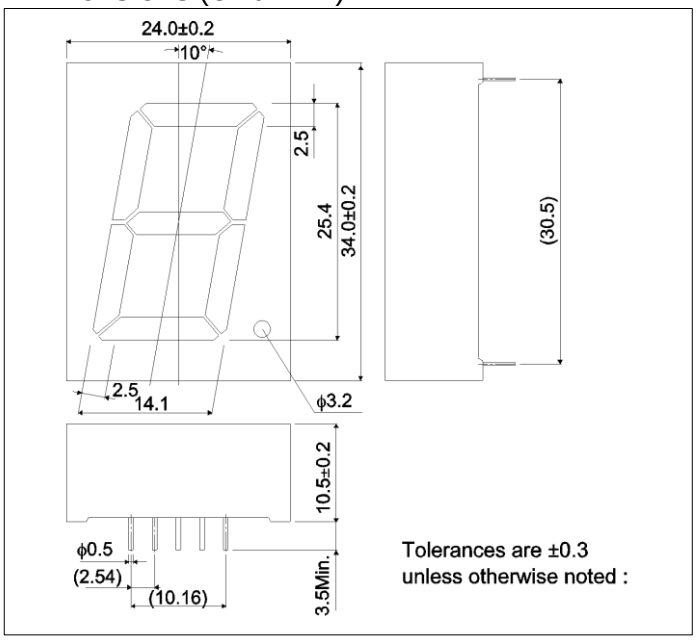
LA-101AK Series Datasheet

The LA-101AK series are LED numerical displays designed to allow use even in bright locations.
The height of the character is 25.4 mm, and two colors are available: red and green.
These displays are designed for use in large numerical displays.

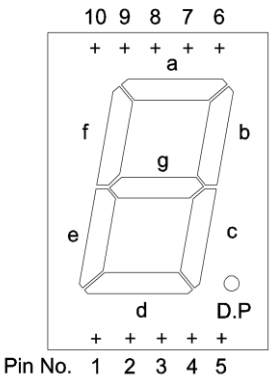
●Features

1) Height of character: 25.4 mm
2) Dimensions: 24 x 34 x 10.5 mm
3) A common anode configuration and a common cathode configuration are available for each color.
4) The package surface is painted black and the segments are colored the display color.
5) High luminance, clear display.

●Dimensions (Unit : mm)

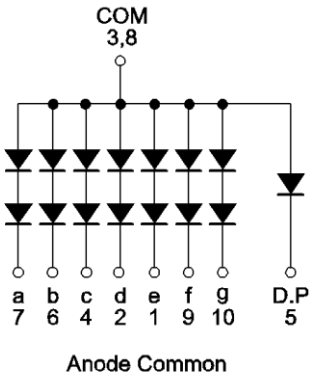


●Pin assignments

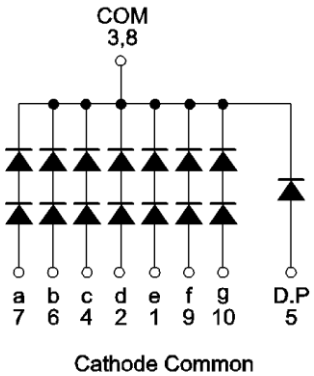


Pin No.	Function
1	Segment "e"
2	Segment "d"
3	Common
4	Segment "c"
5	D.P
6	Segment "b"
7	Segment "a"
8	Common
9	Segment "f"
10	Segment "g"

●Internal circuit schematic



Anode Common



Cathode Common

●Selection guide

Emitting color / Common	Red	Green
Anode	LA-101VA	LA-101MA
Cathode	LA-101VK	LA-101MK

●Absolute maximum ratings (T_a = 25°C)

Parameter	Symbol	Red	Green	Unit
		LA-101VA / VK	LA-101MA / MK	
Power dissipation	P_D	640	640	mW
Power dissipation	P_D / seg	85 (45)	85 (45)	mW
Forward current	I_F	15	20	mA
Peak forward current	I_{FP}	60 *	60 *	mA
Reverse voltage	V_R	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

( ) is D.P value

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

Parameter	Symbol	Conditions	Elements	Red			Green			Unit
				Min.	Typ.	Max.	Min.	Typ.	Max.	
Forward voltage	V_F	I_F =10mA	2	-	4.0	5.6	-	4.2	5.6	V
			1	-	2.0	2.8	-	2.1	2.8	
Reverse current	I_R	V_R =3V	-	-	-	100	-	-	100	μA
Peak wavelength	λ_p	I_F=10mA	-	-	650	-	-	563	-	nm
Spectral line halfwidth	$\Delta\lambda$	I_F=10mA	-	-	40	-	-	40	-	nm

◎ Not designed for radiation resistance.

The forward voltage and reverse current values are the guaranteed values per element.

●Luminous intensity

Parameter	λ_p	Type	Min.	Typ.	Max.	Unit
Red	650	LA-101VA	3.6	10	-	mcd
		LA-101VK				
Green	563	LA-101MA	5.6	16	-	mcd
		LA-101MK				

◎ Condition I_F=10mA

●Electrical and optical characteristics curves

Fig.1 Forward Current vs. Forward Voltage

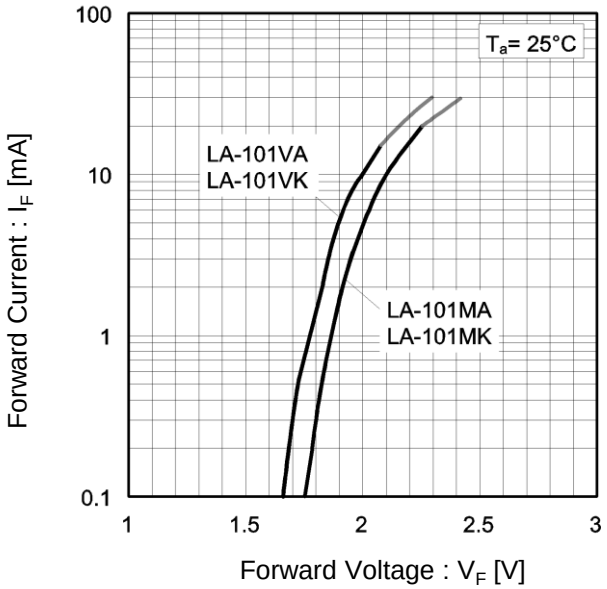


Fig.2 Relative Luminous Intensity vs. Forward Current

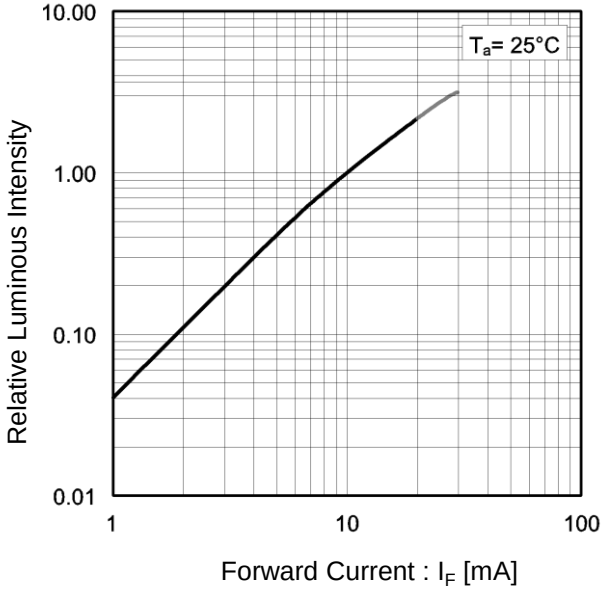


Fig.3 Relative Luminous Intensity vs. Case Temperature

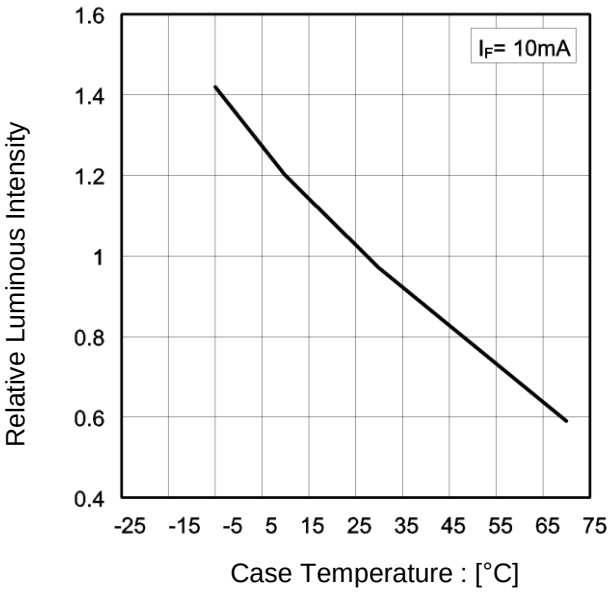
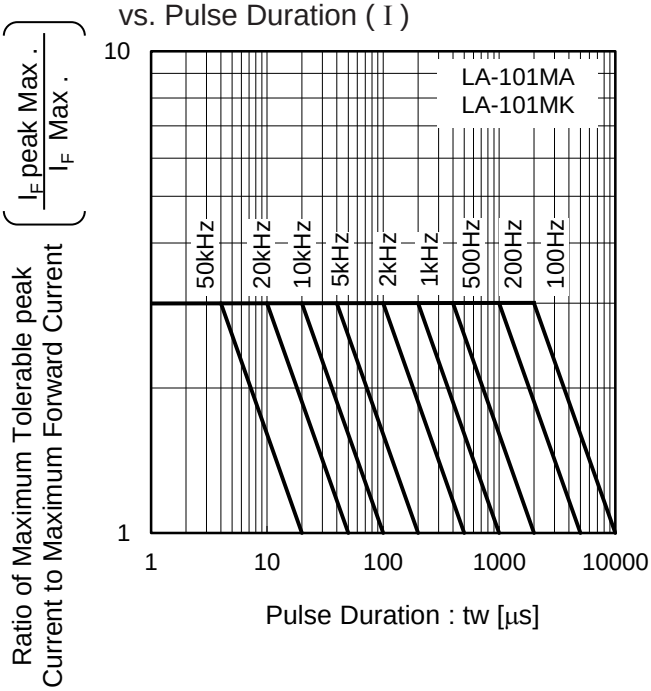


Fig.4 Ratio of Maximum Tolerable Peak Current vs. Pulse Duration (I)



●Electrical and optical characteristics curves

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

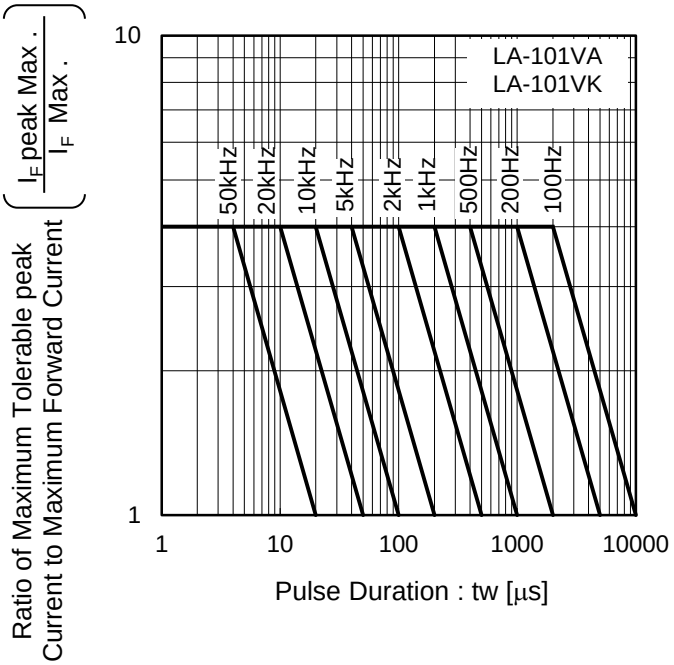
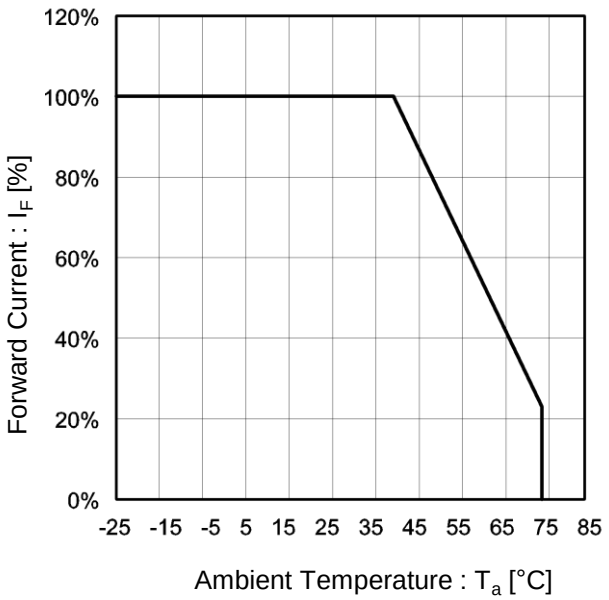


Fig.6 Derating



Notes

1) The information contained herein is subject to change without notice.

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.
Therefore, in order to prevent personal injury or fire arising from failure, please take safety measures such as complying with the derating characteristics, implementing redundant and fire prevention designs, and utilizing backups and fail-safe procedures. ROHM shall have no responsibility for any damages arising out of the use of our Poducts beyond the rating specified by ROHM.

4) Examples of application circuits, circuit constants and any other information contained herein are provided only to illustrate the standard usage and operations of the Products. The peripheral conditions must be taken into account when designing circuits for mass production.

5) The technical information specified herein is intended only to show the typical functions of and examples of application circuits for the Products. ROHM does not grant you, explicitly or implicitly, any license to use or exercise intellectual property or other rights held by ROHM or any other parties. ROHM shall have no responsibility whatsoever for any dispute arising out of the use of such technical information.

6) The Products are intended for use in general electronic equipment (i.e. AV/OA devices, communication, consumer systems, gaming/entertainment sets) as well as the applications indicated in this document.

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.

9) Do not use our Products in applications requiring extremely high reliability, such as aerospace equipment, nuclear power control systems, and submarine repeaters.

10) ROHM shall have no responsibility for any damages or injury arising from non-compliance with the recommended usage conditions and specifications contained herein.

11) ROHM has used reasonable care to ensur the accuracy of the information contained in this document. However, ROHM does not warrants that such information is error-free, and ROHM shall have no responsibility for any damages arising from any inaccuracy or misprint of such information.

12) Please use the Products in accordance with any applicable environmental laws and regulations, such as the RoHS Directive. For more details, including RoHS compatibility, please contact a ROHM sales office. ROHM shall have no responsibility for any damages or losses resulting non-compliance with any applicable laws or regulations.

13) When providing our Products and technologies contained in this document to other countries, you must abide by the procedures and provisions stipulated in all applicable export laws and regulations, including without limitation the US Export Administration Regulations and the Foreign Exchange and Foreign Trade Act.

14) This document, in part or in whole, may not be reprinted or reproduced without prior consent of ROHM.

ROHM SEMICONDUCTOR

Thank you for your accessing to ROHM product informations.
More detail product informations and catalogs are available, please contact us.

ROHM Customer Support System

http://www.rohm.com/contact/