Single Digit LED Numeric Display

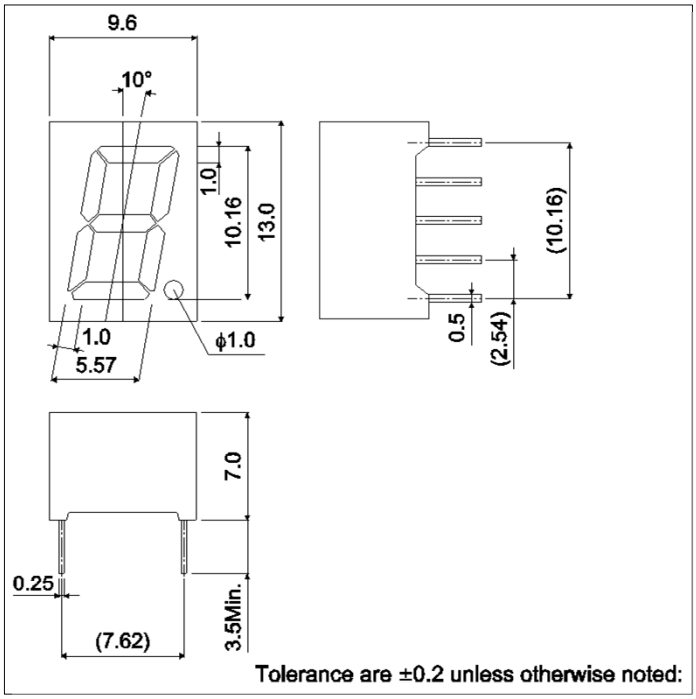
LA-401 D / N Series Datasheet

LA-401 D / N series is developed because of the demand for small single digit LED Numeric Display. Materials of emission are GaAsP on GaP, AlGaInP and GaP. This is the height of a letter 10.16mm, single digit LED Numeric Display that is packed by EPOXY resin.

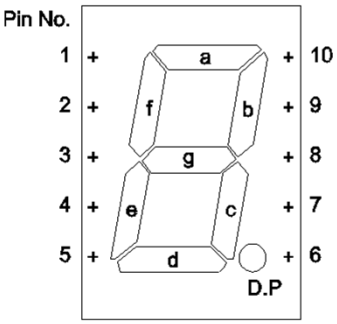
●Features

1) The height of a letter is 10.16mm.
2) Dimension is 9.6×13.0×7.0mm.
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)

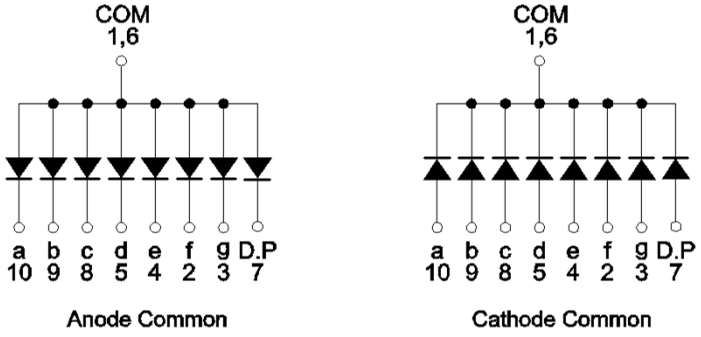


●Pin assignments



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

●Internal circuit schematic



●Selection guide

Emitting color / Common	Red	Red (High brightness)	Orange (High brightness)	Yellow (High brightness) (NRND)	Green
Anode	LA-401VD	LA-401AD	LA-401ED	LA-401XD	LA-401MD
Cathode	LA-401VN	LA-401AN	LA-401EN	LA-401XN	LA-401MN

© 2004 ROHM Co., Ltd. All rights reserved.

●Absolute maximum ratings (T_a = 25°C)

Parameter	Symbol	Red	Red (High brightness)	Orange (High brightness)	Yellow (High brightness) (NRND)	Green	Unit
		LA-401VD / VN	LA-401AD / AN	LA-401ED / EN	LA-401XD / XN	LA-401MD / MN	
Power dissipation	P_D	320	520	520	520	480	mW
Power dissipation	P_D / seg	40	65	65	65	60	mW
Forward current	I_F	15	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.

© 2004 ROHM Co., Ltd. All rights reserved.

●Luminous intensity

Parameter	λ_p	Type	Min.	Typ.	Max.	Unit
Red	650	LA-401VD LA-401VN	5.6	16	-	mcd
Red (High brightness)	626	LA-401AD LA-401AN	36	90	-	mcd
Orange (High brightness)	610	LA-401ED LA-401EN	36	90	-	mcd
Yellow (High brightness) (NRND)	589	LA-401XD LA-401XN	36	90	-	mcd
Green	563	LA-401MD LA-401MN	5.6	16	-	mcd

◎ Condition I_F=10mA

●Iv classification

Parameter	Type	Item	Iv classification	Unit
Red	LA-401VD LA-401VN	“ 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)	LA-401AD LA-401AN	“ 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)	LA-401ED LA-401EN	“ 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	LA-401MD LA-401MN	“ 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

◎ Condition I_F=10mA

© 2004 ROHM Co., Ltd. All rights reserved.

●Electrical and optical characteristics curves

Fig.1 Forward Current vs. Forward Voltage

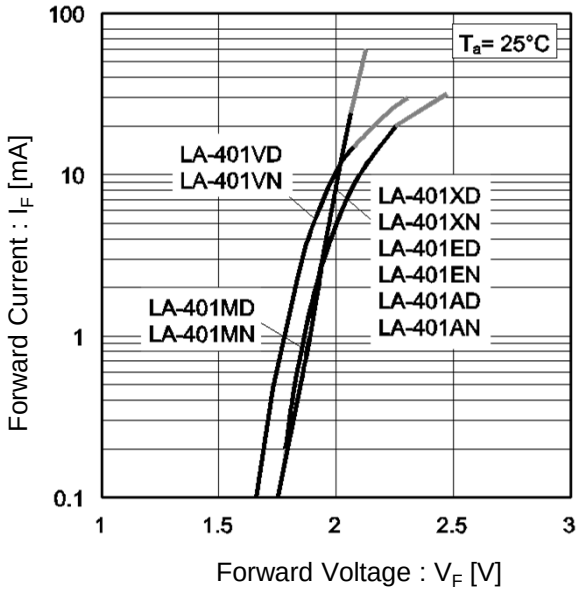


Fig.2 Relative Luminous Intensity vs. Forward Current

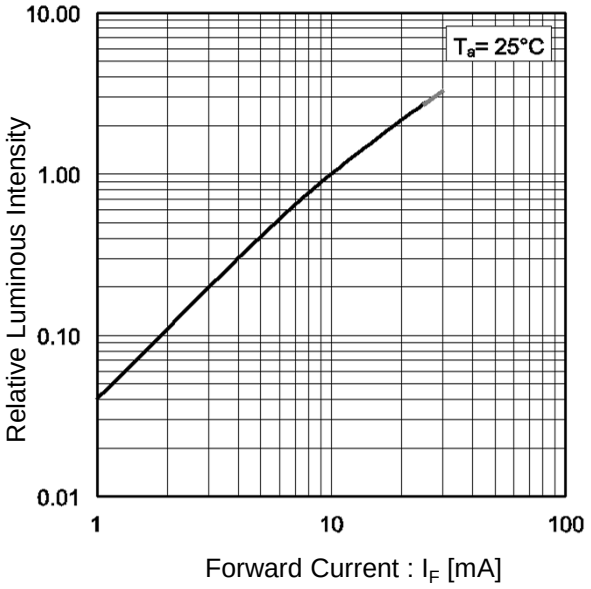


Fig.3 Relative Luminous Intensity vs. Case Temperature

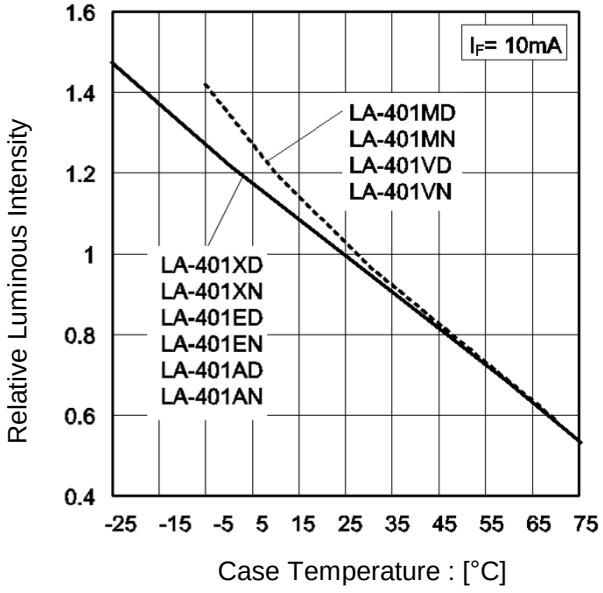
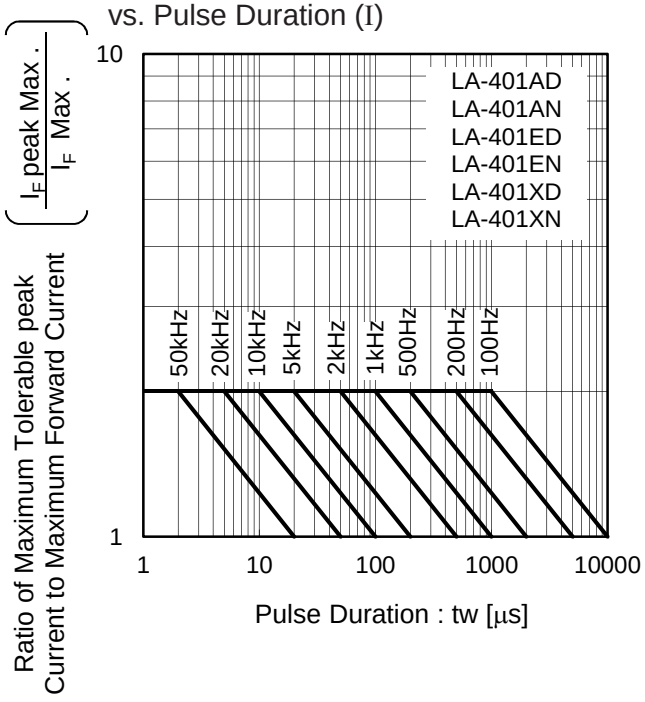


Fig.4 Ratio of Maximum Tolerable Peak Current vs. Pulse Duration (I)



© 2004 ROHM Co., Ltd. All rights reserved.

●Electrical and optical characteristics curves

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

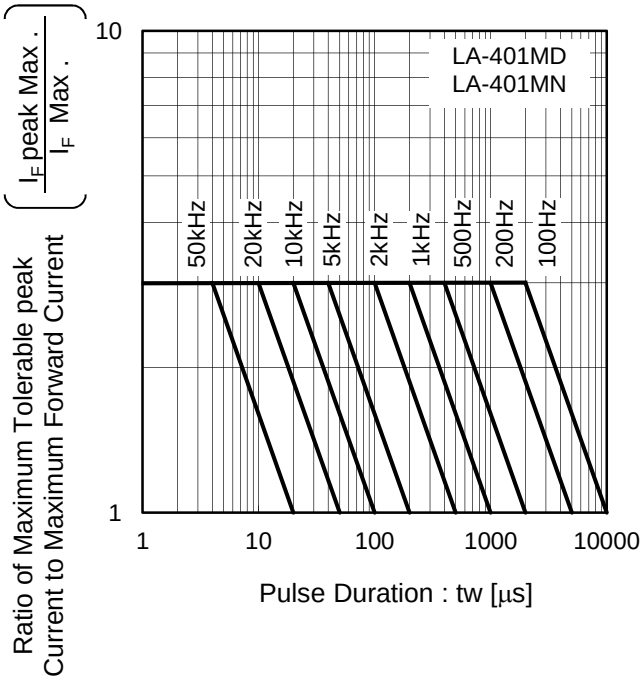


Fig.6 Ratio of Maximum Tolerable Peak Current vs. Pulse Duration (III)

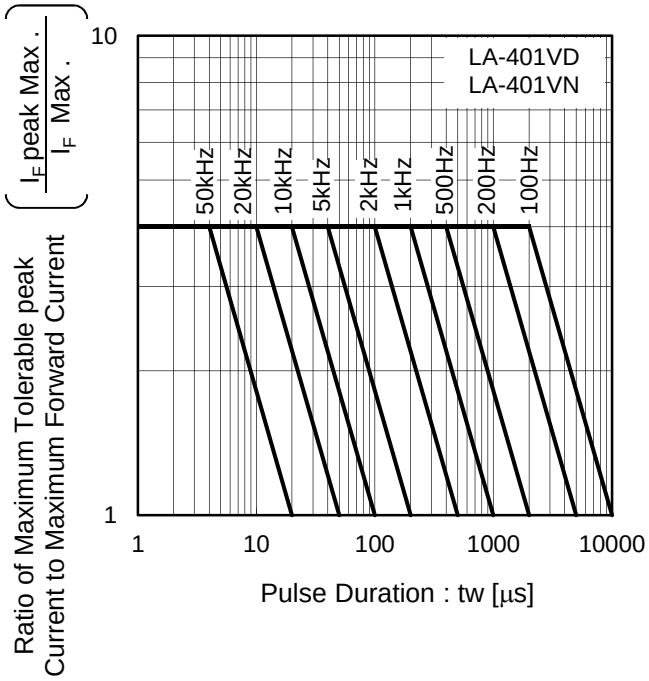
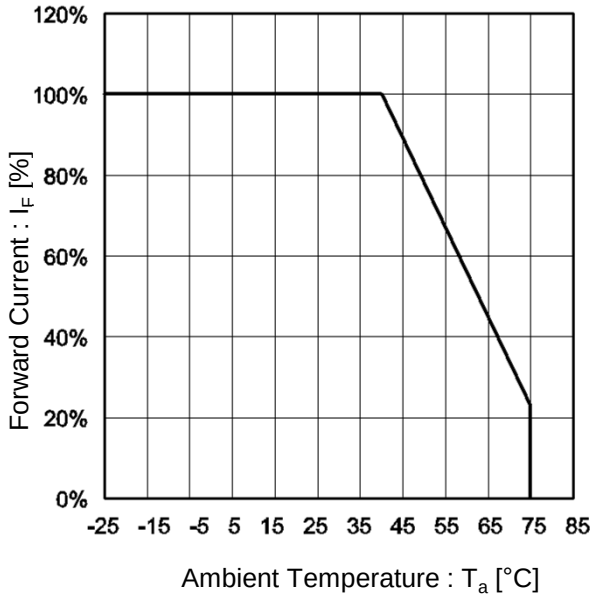


Fig.7 Derating



© 2004 ROHM Co., Ltd. All rights reserved.

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 ensure 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/

© 2012 ROHM Co., Ltd. All rights reserved.

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

ROHM Semiconductor:

LA-401AD LA-401AN LA-401ED LA-401EN LA-401MD LA-401MN LA-401VD LA-401VN