

# Single Digit LED Numeric Display

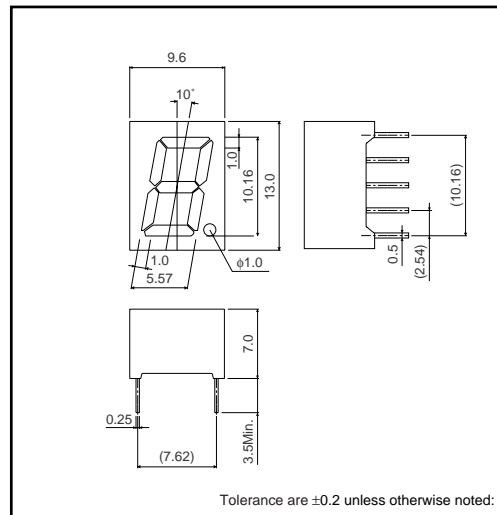
## LA-401 D / N Series

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 GaP and GaN. 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. (Blue color is only milky white)
- 4) Each color has anode common and cathode common respectively.

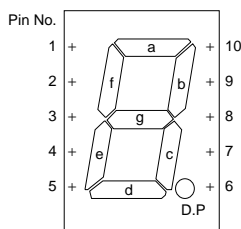
**●Dimensions (Unit : mm)**



**●Selection guide**

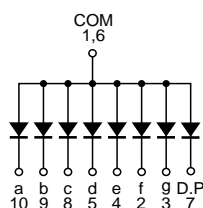
Emitting color	Red	Red High brightness	Orange High brightness	Yellow High brightness	Green	Blue
Anode	LA-401VD	LA-401AD	LA-401ED	LA-401XD	LA-401MD	LA-401BD
Cathode	LA-401VN	LA-401AN	LA-401EN	LA-401XN	LA-401MN	LA-401BN

**●Pin assignments**

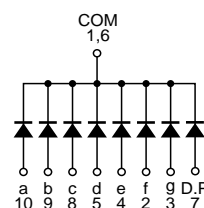


Pin No.	Function
1	Common
2	Segment "f"
3	Segment "g"
4	Segment "e"
5	Segment "d"
6	Common
7	D.P
8	Segment "c"
9	Segment "b"
10	Segment "a"

**●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-401VD / VN	LA-401AD / AN	LA-401ED / EN	LA-401XD / XN	LA-401MD / MN	LA-401BD / BN	
Power dissipation	P <sub>D</sub>	320	520	520	520	480	336	mW
Power dissipation	P <sub>D</sub> / seg	40	65	65	65	60	42	mW
Forward current	I <sub>F</sub>	15	25	25	25	20	10	mA
Peak forward current	I <sub>FP</sub>	60 *1	50 *2	50 *2	50 *2	60 *1	50 *2	mA
Reverse voltage	V <sub>R</sub>	5	5	5	5	5	5	V
Operating temperature	Topr	-25 to +75						°C
Storage temperature	Tstg	-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 <sub>F</sub>	I <sub>F</sub> =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 <sub>R</sub>	V <sub>R</sub> =3V	-	100	-	100	-	100	-	100	-	100	-	100	μA
Peak wavelength	λ <sub>P</sub>	I <sub>F</sub> =10mA	650	-	626*	-	610*	-	589*	-	563	-	470	-	nm
Spectral line half width	Δλ	I <sub>F</sub> =10mA	40	-	18*	-	17*	-	15*	-	40	-	26	-	nm

© The products are not radiations resistant.

\*Shows the number on the condition of I<sub>F</sub>=20mA.

## ●Luminous intensity

Color	λ <sub>P</sub> (nm)	Type	Min.	Typ.	Unit
Red	650	LA-401VD	5.6	16	mcd
		LA-401VN			
High brightness red	626	LA-401AD	36	90	mcd
		LA-401AN			
High brightness orange	610	LA-401ED	36	90	mcd
		LA-401EN			
High brightness yellow	589	LA-401XD	36	90	mcd
		LA-401XN			
Green	563	LA-401MD	5.6	16	mcd
		LA-401MN			
Blue	470	LA-401BD	14	56	mcd
		LA-401BN			

© A condition of measurement is I<sub>F</sub>=10mA.

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●Electrical and optical characteristic curves

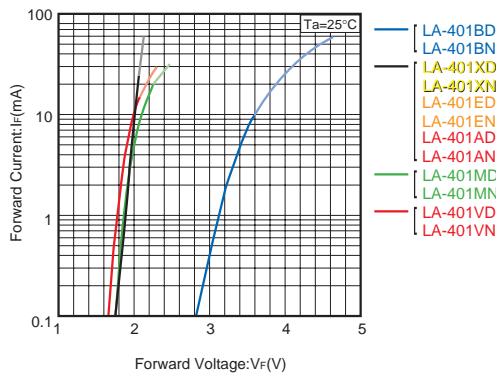


Fig.1 Forward Current - Forward Voltage

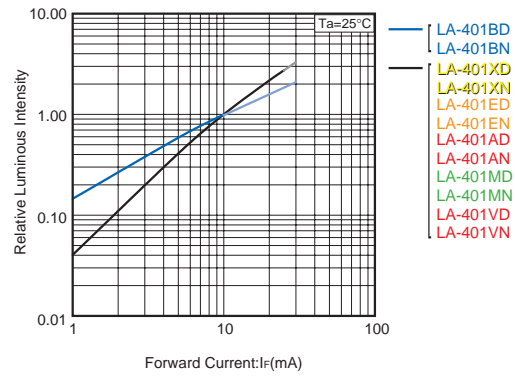


Fig.2 Relative Luminous Intensity - Forward Current

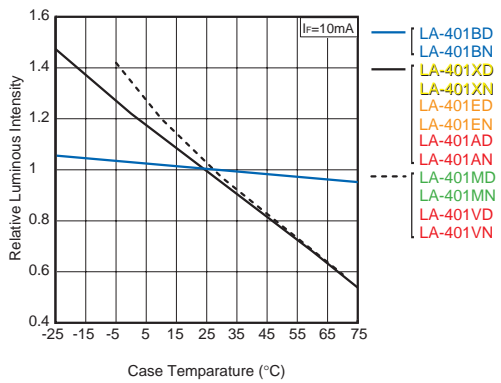


Fig.3 Relative Luminous Intensity - Case Temperature

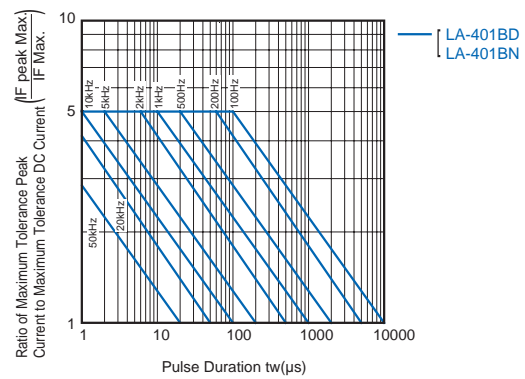


Fig.4 Ratio of Maximum Tolerable Peak Current - Pulse Duration ( I )

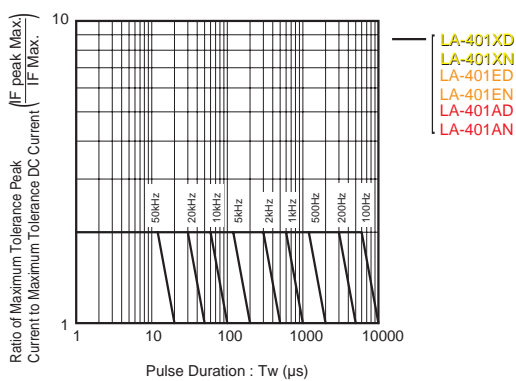


Fig.5 Ratio of Maximum Tolerable Peak Current - Pulse Duration ( II )

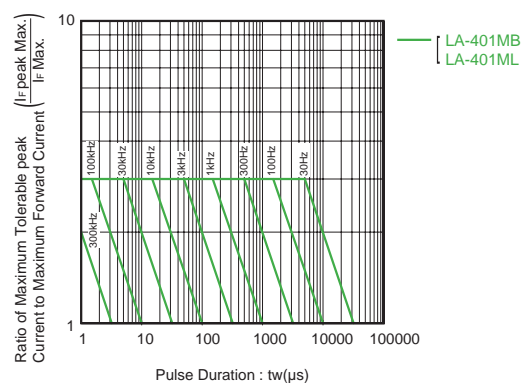


Fig.6 Ratio of Maximum Tolerable Peak Current - Pulse Duration ( III )

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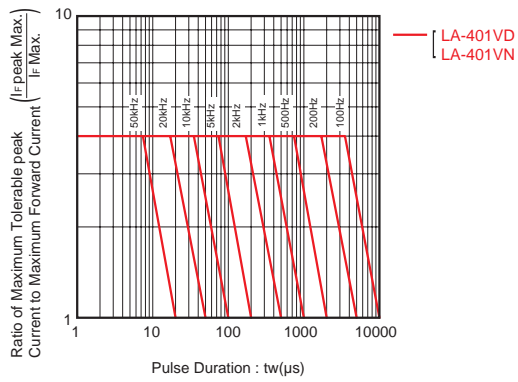


Fig.7 Ratio of Maximum Tolerable Peak Current - Pulse Duration ( IV )

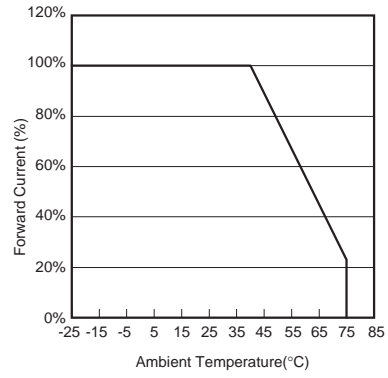


Fig.8 Derating

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