

# High efficiency, three-digit numeric displays

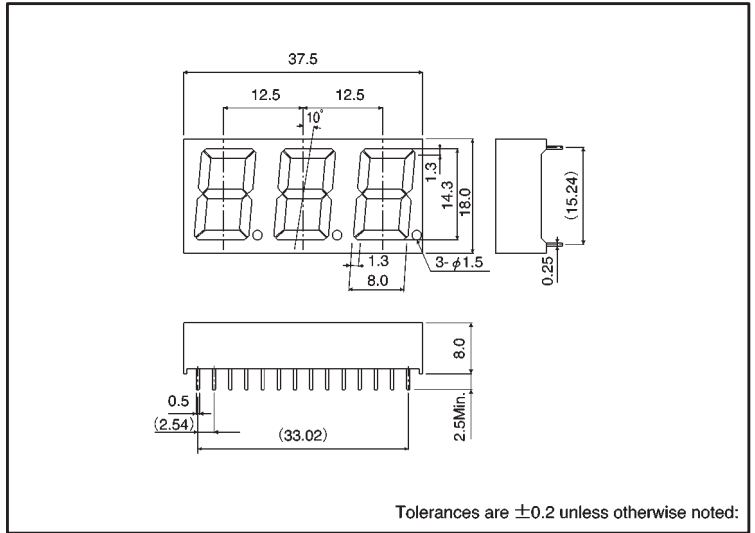
## LB-603 FP Series

The LB-603 FP series were designed to meet the need for multi-digit numeric displays. These LED numeric displays use GaAsP on GaP 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 14.3 mm.

●Features

- 1) Height of character : 14.3 mm.
- 2) The package surface is painted black and the segments are colored the display color.
- 3) High efficiency reflectors are used to achieve a bright, clear display.

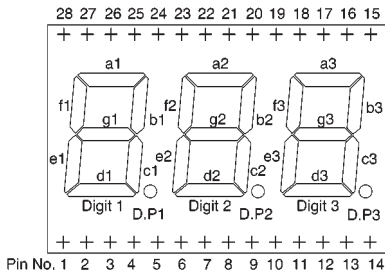
●External dimensions (Units: mm)



●Selection guide

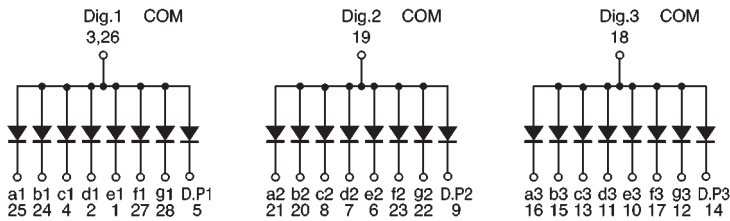
Emitting color	Red	Green
	Common	
Anode	LB-603VF	LB-603MF
Cathode	LB-603VP	LB-603MP

●Pin assignments



Pin No.	Function	Pin No.	Function
1	Segment "e1"	15	Segment "b3"
2	Segment "d1"	16	Segment "a3"
3	Digit 1 Common	17	Segment "f3"
4	Segment "c1"	18	Digit 3 Common
5	D.P1	19	Digit 2 Common
6	Segment "e2"	20	Segment "b2"
7	Segment "d2"	21	Segment "a2"
8	Segment "c2"	22	Segment "g2"
9	D.P2	23	Segment "f2"
10	Segment "e3"	24	Segment "b1"
11	Segment "d3"	25	Segment "a1"
12	Segment "g3"	26	Digit 1 Common
13	Segment "c3"	27	Segment "f1"
14	D.P3	28	Segment "g1"

● Internal circuit schematic (example of common anode)



● Absolute maximum ratings ( $T_a = 25^\circ\text{C}$ )

Parameter	Symbol	Red	Green	Unit
		LB-603VF / VP	LB-603MF / MP	
Power dissipation	$P_D$	960	1440	mW
Power dissipation	$P_D / \text{seg}$	40	60	mW
Forward current	$I_F$	15	20	mA
Peak forward current	$I_{FP}$	60*	60*	mA
Reverse voltage	$V_R$	3	3	V
Operating temperature	$T_{opr}$	-25~+75		$^\circ\text{C}$
Storage temperature	$T_{stg}$	-30~+85		$^\circ\text{C}$

\* Pulse width 1ms duty 1 / 5

● Electrical and optical characteristics ( $T_a = 25^\circ\text{C}$ )

Parameter	Symbol	Conditions	Red			Green			Unit
			Min.	Typ.	Max.	Min.	Typ.	Max.	
Forward voltage	$V_F$	$I_F=10\text{mA}$	—	2.0	2.8	—	2.1	2.8	V
Reverse current	$I_R$	$V_R=3\text{V}$	—	—	100	—	—	100	$\mu\text{A}$
Peak wavelength	$\lambda_P$	$I_F=10\text{mA}$	—	650	—	—	563	—	nm
Spectral line half width	$\Delta\lambda$	$I_F=10\text{mA}$	—	40	—	—	40	—	nm

Ⓞ Not designed for radiation resistance.

● Luminous intensity

Color	$\lambda_P$	Type	Min.	Typ.	Max.	Unit
Red	650	LB-603VF	5.6	16	—	mcd
		LB-603VP				
Green	563	LB-603MF	9	25	—	mcd
		LB-603MP				

Note: Measured at  $I_F = 10\text{mA}$

### 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 use silicon as a basic material.  
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.

#### About Export Control Order in Japan

Products described herein are the objects of controlled goods in Annex 1 (Item 16) of Export Trade Control Order in Japan.

In case of export from Japan, please confirm if it applies to "objective" criteria or an "informed" (by MITI clause) on the basis of "catch all controls for Non-Proliferation of Weapons of Mass Destruction.