

# High efficiency, three-digit numeric displays

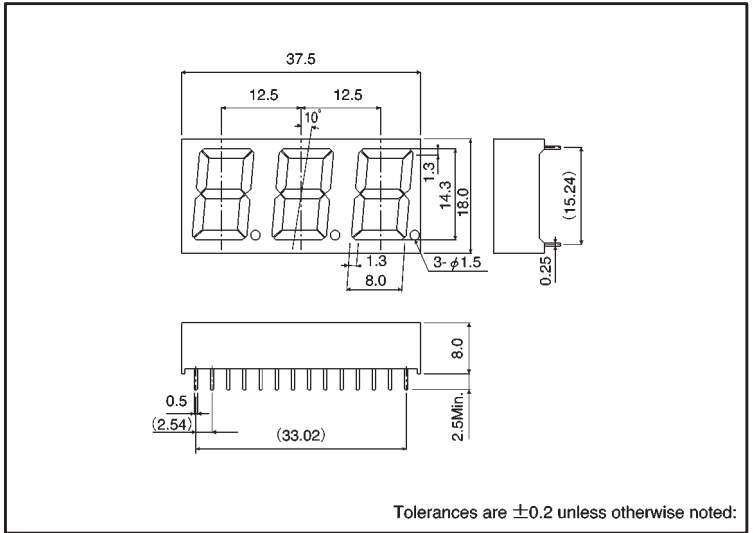
## LB-603 FP Series

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.

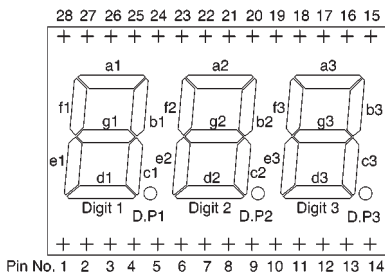
●External dimensions (Units: mm)



●Selection guide

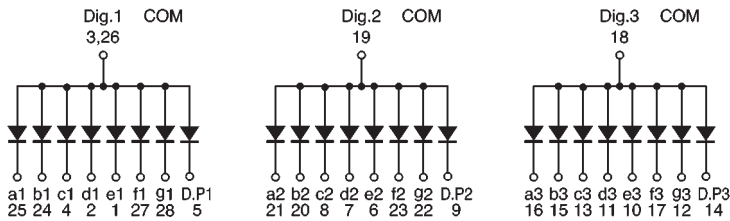
Emitting color	Red	Green
	Common	
Anode	LB-603VF	LB-603MF
Cathode	LB-603VP	LB-603MP

●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  $I_F = 10\text{mA}$