High efficiency, three-digit Numeric Display

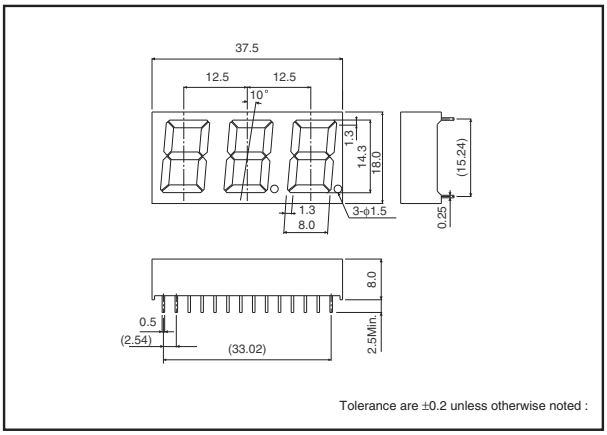
LB-603 FP Series

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 14.3mm.

●Features

1) Height of character : 14.3mm.
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.

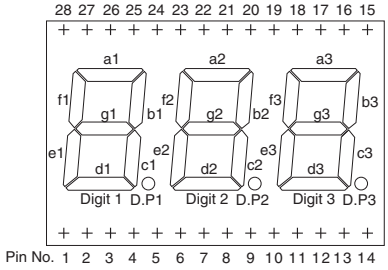
●Dimensions (Unit : mm)



●Selection guide

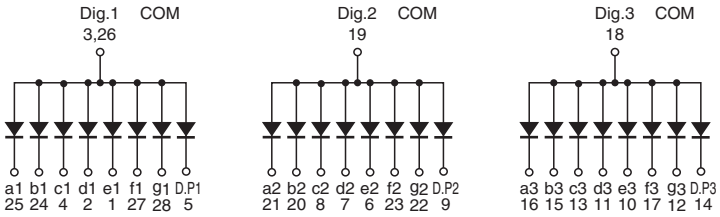
Common \ Emitting color	Red	Green
Anode	LB-603VF	LB-603MF
Cathode	LB-603VP	LB-603MP

●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 "f 3"
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 "f 2"
10	Segment "e3"	24	Segment "b1"
11	Segment "d3"	25	Segment "a1"
12	Segment "g3"	26	Digit 1 Common
13	Segment "c3"	27	Segment "f 1"
14	D.P3	28	Segment "g1"

●Equivalent circuit (anode common)



●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Red	Green	Unit
		LB-603VF/VP	LB-603MF/MP	
Power dissipation	P_D	960	1440	mW
Power dissipation	P_D / seg	40	60	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	Topr	–25 to +75		˚C
Storage temperature	Tstg	–30 to +85		˚C

* Pulse width 1ms Duty 1 / 5

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

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

◎The products are not radiations resistant.

●Luminous intensity

Color	λ_P (nm)	Type	Min.	Typ.	Max.	Unit
Red	650	LB-603VF	5.6	16	–	mcd
		LB-603VP				
Green	563	LB-603MF	9	25	–	mcd
		LB-603MP				

◎A condition of measurement is I_F=10mA.

●Electrical and optical characteristic curves

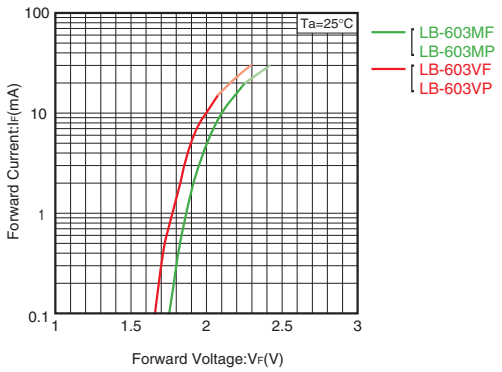


Fig.1 Forward Current - Forward Voltage

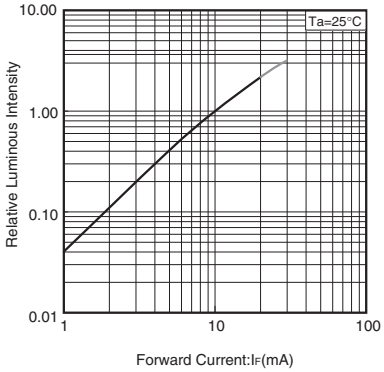


Fig.2 Relative Luminous Intensity - Forward Current

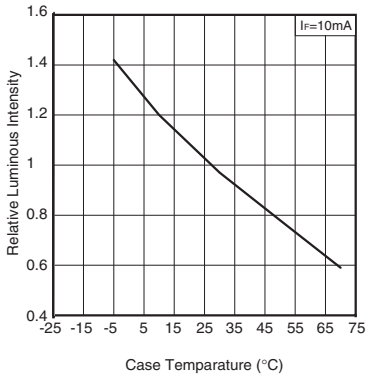


Fig.3 Relative Luminous Intensity - Case Temperature

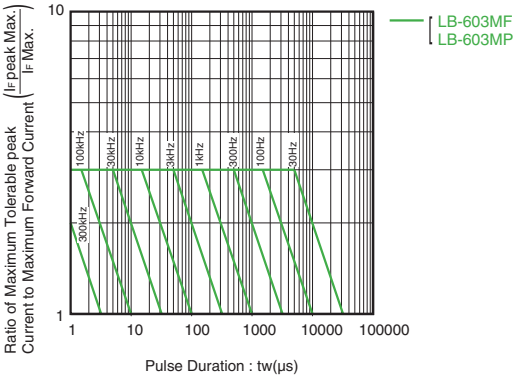


Fig.4 Ratio of Maximum Tolerable Peak Current - Pulse Duration (I)

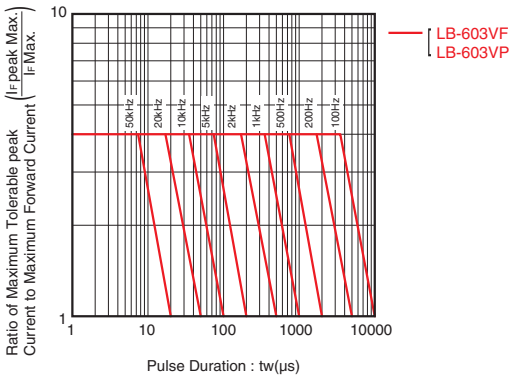


Fig.5 Ratio of Maximum Tolerable Peak Current - Pulse Duration (II)

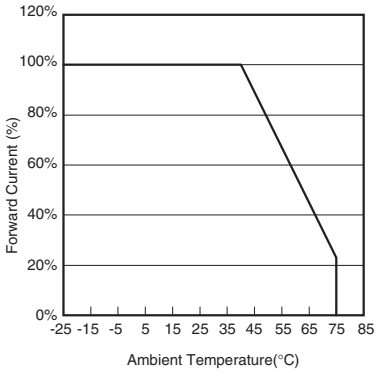


Fig.6 Derating

Notes

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