

# 5 x 7 matrix display

## LM-2035 Series

The LM-2035 series are 5 x 7 matrix displays which can be used in a wide variety of applications, including alphabet, numeric, symbol, and graphic displays. Bright red, red and green are available, as a dual – color red / green type.

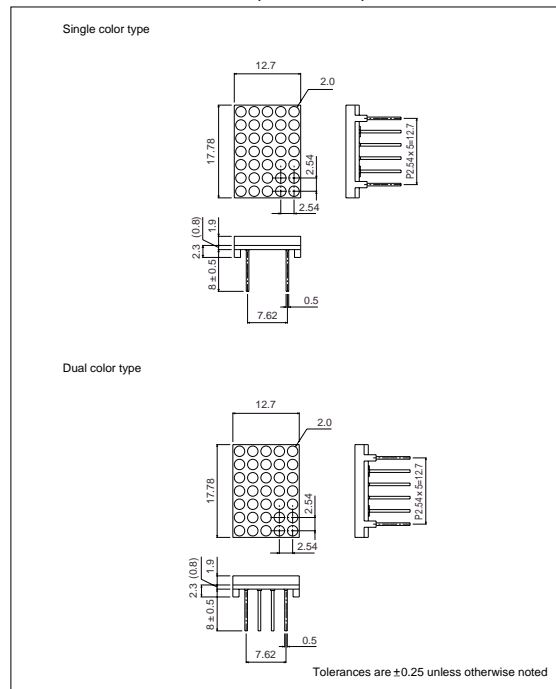
### ●Application

Light sources for displays

### ●Features

- 1) 5 x 7 dot matrix Circular emitters
- 2) External dimensions : 17.378 x 12.7 x 4.2 mm
- 3) Emitters : Circular, 2.0mm diameter
- 4) Black package

### ●External Dimensions (Units: mm)



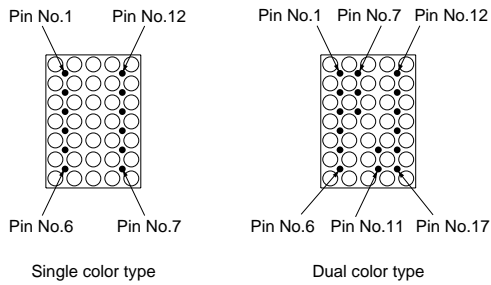
### ●Selection guide

Emitting color	Red*	Red	Green	Red / Green
Common				
Anode	LM-2035LB	LM-2035VB	LM-2035MB	-
Cathode	-	-	-	LM-2035MUM

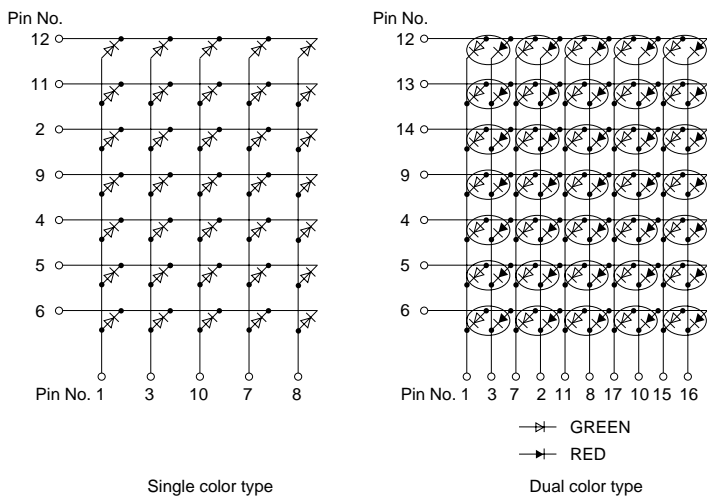
\* High-luminance red

LED displays

●Pin assignments



●Internal circuit schematic



●Absolute maximum ratings (Ta=25°C)

Single – color type

Parameter	Symbol	LB*2	VB	MB	Unit
		Red	Red	Green	
Power dissipation	P <sub>D</sub>	1.4	1.23	1.23	W
Forward current	I <sub>F</sub>	30	15	15	mA
Peak forward current	I <sub>FP</sub>	80*1	60*1	60*1	mA
Reverse voltage	V <sub>R</sub>	3	3	3	V
Operating temperature	T <sub>opr</sub>	-25~+60	-25~+75		°C
Storage temperature	T <sub>stg</sub>	-30~+85	-30~+85		°C

\*1 Pulse width 1msec duty 1 / 5

\*2 High-luminance red

## LED displays

## Dual – color type

Parameter	Symbol	MUM		Unit
		Red	Green	
Power dissipation	P <sub>D</sub>	35	35	mW/dot
Forward current	I <sub>F</sub>	15	15	mA
Peak forward current	I <sub>FP</sub>	60*	60*	mA
Reverse voltage	V <sub>R</sub>	4	4	V
Operating temperature	Topr	-20→+50		°C
Storage temperature	Tstg	-25→+75		°C

\* Pulse width 1msec duty 1 / 5

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

## Single – color type

Parameter	Symbol	Conditions	LB			VB			MB			Unit
			Red*1			Red			Green			
			Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	
Forward voltage	V <sub>F</sub>	I <sub>F</sub> = 10mA	–	1.75	2.5	–	2.0	2.8	–	2.1	2.8	V
Reverse current	I <sub>R</sub>	V <sub>R</sub> = 3V	–	–	100	–	–	100	–	–	100	μA
Peak wavelength	λ <sub>P</sub>	I <sub>F</sub> = 10mA	–	660	–	–	650	–	–	563	–	nm
Spectral line half width		I <sub>F</sub> = 10mA	–	25	–	–	40	–	–	40	–	nm

Not designed for radiation resistance.

\*1 I<sub>F</sub> = 20mA

## Dual – color type

Parameter	Symbol	Conditions	MUM						Unit
			Red			Green			
			Min.	Typ.	Max.	Min.	Typ.	Max.	
Forward voltage	V <sub>F</sub>	I <sub>F</sub> = 10mA	–	2.0	2.8	–	2.1	2.8	V
Reverse current	I <sub>R</sub>	V <sub>R</sub> = 3V	–	–	100	–	–	100	μA
Peak wavelength	λ <sub>P</sub>	I <sub>F</sub> = 10mA	–	635	–	–	563	–	nm
Spectral line half width		I <sub>F</sub> = 10mA	–	40	–	–	40	–	nm

Not designed for radiation resistance.

## ●Luminous intensity

Color	Type	Min.	Typ.	Max.	Unit
Red*1	LB	1.4	5.0	–	mcd
Red	VB	0.56	1.6	–	mcd
Green	MB	0.9	2.5	–	mcd
Red	MUM	0.56	1.6	–	mcd
Green		0.9	2.5	–	mcd

Note: Measured at I<sub>F</sub> = 10mA\*1 I<sub>F</sub> = 20mA