

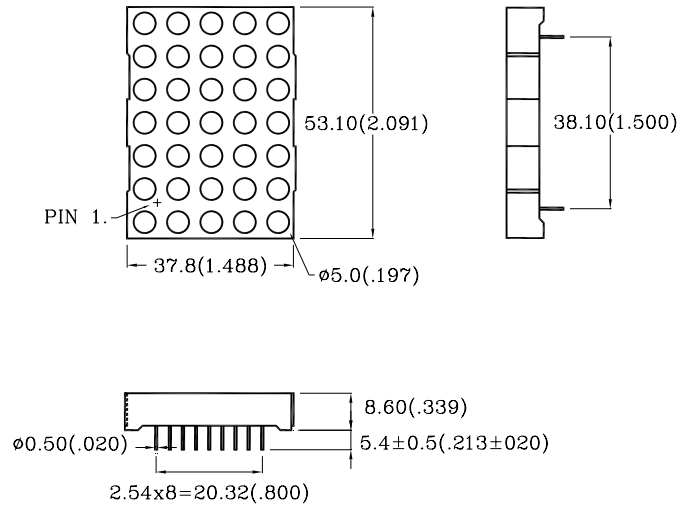
### ● Features :

1. 2.00 inch (53.2mm) matrix height.
2. Dot size 5.0 mm.
3. Low power requirement.
4. Excellent characters appearance.
5. Solid state reliability.
6. Multiplex drive , column cathode com. and row anode com.
7. Multi color available.
8. Categorized for luminous intensity.
9. Stackable vertically and horizontally.

### ● Description :

1. The BM-20EG57ND is a 53.2mm (2.00") matrix height 5×7 dot matrix display.
2. This product use hi-eff red chips and green chips ,the hi-eff red chips are made from GaAsP on GaP substrate, the green chips are made from GaP on GaP substrate.
3. This product have a black face and white dots.
4. This product doesn't contain restriction substance, comply ROHS standard.

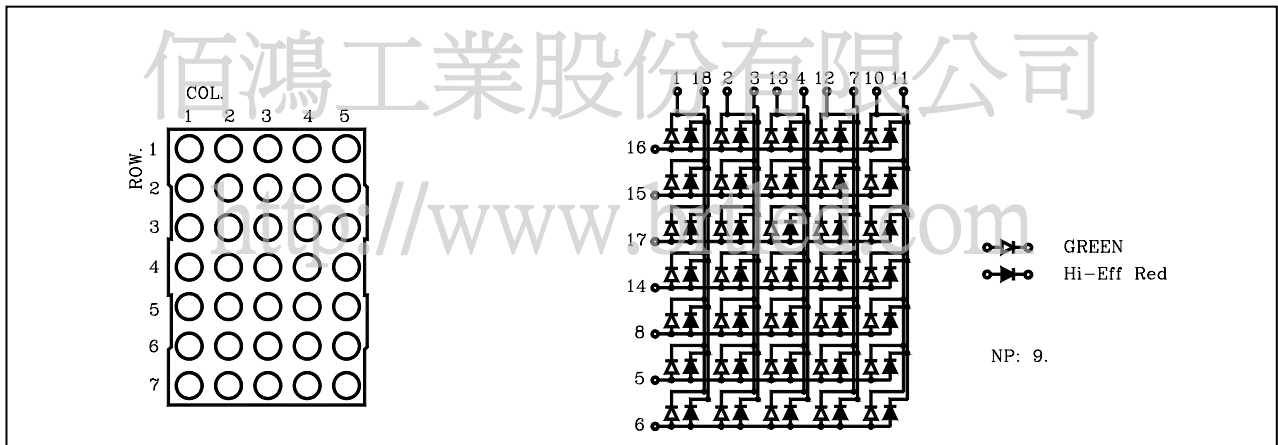
### ● Package Dimensions :



### Notes:

1. All dimensions are in millimeters(inches).
2. Tolerance is  $\pm 0.25\text{mm}(.01\text{'})$  unless otherwise specified.
3. Specifications are subject to change without notice.

### ● Internal Circuit Diagram :



● **Absolute Maximum Ratings(Ta=25°C)**

| Parameter                                  | Symbol                               | Hi-Eff Red Rating   | Green Rating | Unit |
|--|--------------------------------------|---------------------|--------------|------|
| Power Dissipation Per Dot                  | Pd                                   | 80                  | 80           | mW   |
| Forward Current Per Dot                    | I <sub>F</sub>                       | 30                  | 30           | mA   |
| Peak Forward Current Per Dot               | I <sub>FP</sub><br>(Duty 1/10, 1KHZ) | 150                 | 150          | mA   |
| Reverse Voltage Per Dot                    | V <sub>R</sub>                       | 5                   |              | V    |
| Operating Temperature                      | Topr                                 | -40°C~80°C          |              | -    |
| Storage Temperature                        | Tstg                                 | -40°C~85°C          |              | -    |
| Soldering Temperature<br>(1/16" From Body) | Tsol                                 | 260°C For 5 Seconds |              | -    |

● **Electrical And Optical Characteristics(Ta=25°C)**

Hi-Eff Red

| Parameter                  | Symbol         | Condition            | Min. | Typ. | Max. | Unit |
|----------------------------|----------------|----------------------|------|------|------|------|
| Forward Voltage Per Dot    | V <sub>F</sub> | I <sub>F</sub> =10mA | -    | 1.9  | 2.5  | V    |
| Luminous Intensity Per Dot | I <sub>v</sub> | I <sub>F</sub> =10mA | -    | 12.0 | -    | mcd  |
| Reverse Current Per Dot    | I <sub>R</sub> | V <sub>R</sub> =5V   | -    | -    | 100  | μA   |
| Peak Wave Length           | λ <sub>p</sub> | I <sub>F</sub> =10mA | -    | 640  | -    | nm   |
| Dominant Wave Length       | λ <sub>d</sub> | I <sub>F</sub> =10mA | 626  | -    | 636  | nm   |
| Spectral Line Half-width   | Δλ             | I <sub>F</sub> =10mA | -    | 40   | -    | nm   |

Green

| Parameter                  | Symbol         | Condition            | Min. | Typ. | Max. | Unit |
|----------------------------|----------------|----------------------|------|------|------|------|
| Forward Voltage Per Dot    | V <sub>F</sub> | I <sub>F</sub> =10mA | -    | 2.1  | 2.5  | V    |
| Luminous Intensity Per Dot | I <sub>v</sub> | I <sub>F</sub> =10mA | -    | 12.0 | -    | mcd  |
| Reverse Current Per Dot    | I <sub>R</sub> | V <sub>R</sub> =5V   | -    | -    | 100  | μA   |
| Peak Wave Length           | λ <sub>p</sub> | I <sub>F</sub> =10mA | -    | 568  | -    | nm   |
| Dominant Wave Length       | λ <sub>d</sub> | I <sub>F</sub> =10mA | 567  | -    | 572  | nm   |
| Spectral Line Half-width   | Δλ             | I <sub>F</sub> =10mA | -    | 30   | -    | nm   |

### ● Typical Electro-Optical Characteristics Curves

(25°C Ambient Temperature Unless Otherwise Noted)

Fig.1 Relative Radiant Intensity VS. Wavelength

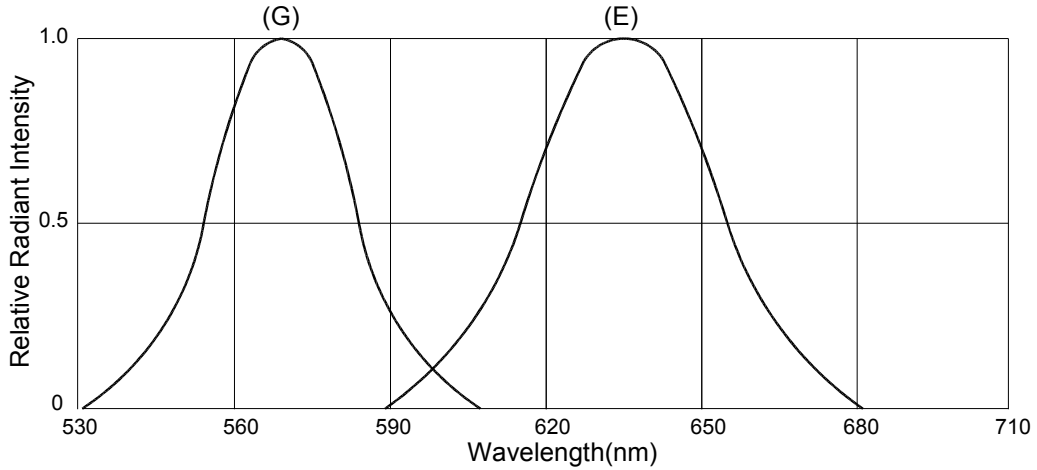


Fig.2 Forward Current VS. Forward Voltage

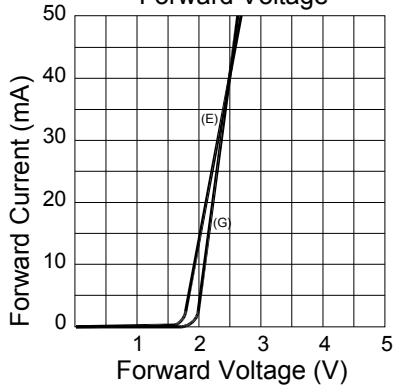


Fig.3 Relative Luminous Intensity VS. Ambient Temperature

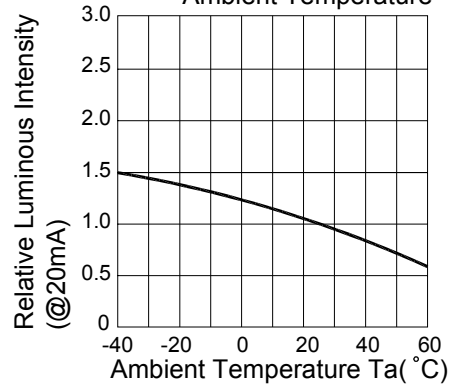


Fig.4 Relative Luminous Intensity VS. Forward Current

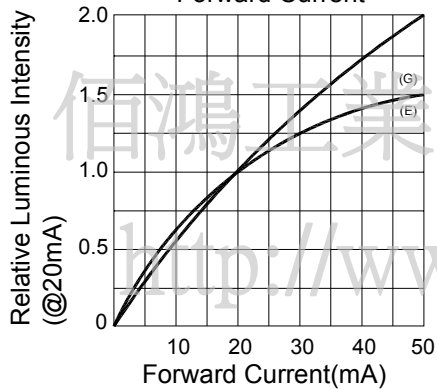


Fig.5 Forward Current Derating Curve VS. Ambient Temperature

