

## DESCRIPTION:

The KWM-19881 series is 20.00mm (0.79") height 8 x 8 dot matrix display. This series is suitable for use in single/multi-line message display, large area graphics display and electronic games. All devices are available as either common row anode or common row cathode.

## ABSOLUTE MAXIMUM RATINGS: (Ta=25°C)

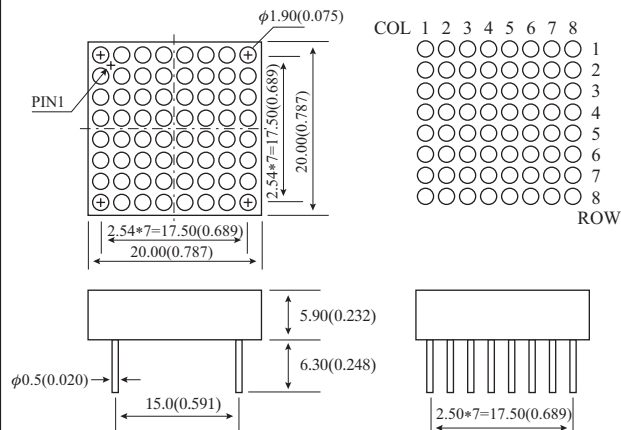
| Parameter                                                        | Max            |
|------------------------------------------------------------------|----------------|
| Reverse Voltage per segment                                      | 5 V            |
| Reverse Current per segment (Vr = 5V)                            | 100μA          |
| Derating Linear from 25°C per segment                            | 0.4mA/°C       |
| Operating Temperature Range                                      | -40°C To 85°C  |
| Storage Temperature Range                                        | -40°C To 100°C |
| Soldering Temperature 1.6mm(1/16") from body for 5 sec. at 260°C |                |

NOTES : 1. All dimensions are in millimeters (inches).  
2. Tolerance is ±0.25mm(0.010) unless otherwise specified.  
3. Specifications are subject to change without notice.  
4. NP: No Pin.  
5. NC: No Connect.

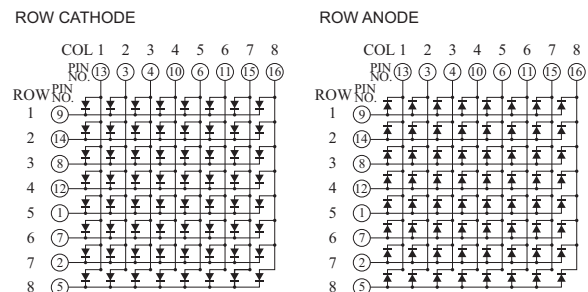
## TESTING CONDITION FOR EACH PARAMETER :

| Parameter                  | Symbol | Unit | Test Condition |
|----------------------------|--------|------|----------------|
| Forward Voltage            | Vf     | V    | If=20mA        |
| Peak Emission Wave Length  | λp     | nm   | If=20mA        |
| Spectral Line Half-Width   | Δλ     | nm   | If=20mA        |
| Reverse Current            | Ir     | μA   | Vr=5V          |
| Average Luminous Intensity | Iv     | μ cd | If=10mA        |

## PACKAGE DIMENSIONS



## INTERNAL CIRCUIT DIAGRAM



## PART NO. SELECTION AND APPLICATION INFORMATION (RATINGS AT 25°C AMBIENT)

| Part No.    | Chip            |                  | C.C<br>or<br>C.A      | Wave<br><br>Length<br>$\lambda_p$ (nm) | Absolute Maximum Ratings |            |            |                      | Electro-optical Characteristic |      |      |                   |                           |      |
|-------------|-----------------|------------------|-----------------------|----------------------------------------|--------------------------|------------|------------|----------------------|--------------------------------|------|------|-------------------|---------------------------|------|
|             | Raw<br>Material | Emitted<br>Color |                       |                                        | $\Delta\lambda$<br>(nm)  | Pd<br>(mW) | If<br>(mA) | If<br>(Peak)<br>(mA) | Vf (V)<br>Per Dot              |      |      | If<br>(Rec)<br>mA | Iv ( $\mu$ cd)<br>Per Dot |      |
|             |                 |                  |                       |                                        |                          |            |            |                      | Min.                           | Typ. | Max. |                   | Min.                      | Typ. |
| KWM-19881A5 | GaP             | Bright Red       | Common<br><br>Anode   | 700                                    | 90                       | 100        | 50         | 100                  | 1.7                            | 2.4  | 2.8  | 10-20             | 400                       | 600  |
| KWM-19881A3 | GaAsP/GaP       | Hi-Eff Red       |                       | 635                                    | 45                       | 100        | 50         | 100                  | 1.7                            | 1.9  | 2.6  | 10-20             | 850                       | 1500 |
| KWM-19881AS | GaAlAs          | Super Red        |                       | 660                                    | 20                       | 100        | 50         | 100                  | 1.5                            | 1.9  | 2.6  | 10-20             | 1500                      | 2800 |
| KWM-19881A2 | GaP             | Green            |                       | 565                                    | 30                       | 100        | 50         | 100                  | 1.7                            | 2.2  | 2.6  | 10-20             | 750                       | 1400 |
| KWM-19881AG | GaP             | Super Green      |                       | 570                                    | 30                       | 100        | 50         | 100                  | 1.7                            | 2.2  | 2.6  | 10-20             | 800                       | 1600 |
| KWM-19881A6 | GaAsP/GaP       | Yellow           |                       | 585                                    | 30                       | 100        | 50         | 100                  | 1.7                            | 1.9  | 2.6  | 10-20             | 750                       | 1400 |
| KWM-19881C5 | GaP             | Bright Red       | Common<br><br>Cathode | 700                                    | 90                       | 100        | 50         | 100                  | 1.7                            | 2.4  | 2.8  | 10-20             | 400                       | 600  |
| KWM-19881C3 | GaAsP/GaP       | Hi-Eff Red       |                       | 635                                    | 45                       | 100        | 50         | 100                  | 1.7                            | 1.9  | 2.6  | 10-20             | 850                       | 1500 |
| KWM-19881CS | GaAlAs          | Super Red        |                       | 660                                    | 20                       | 100        | 50         | 100                  | 1.5                            | 1.9  | 2.6  | 10-20             | 1500                      | 2800 |
| KWM-19881C2 | GaP             | Green            |                       | 565                                    | 30                       | 100        | 50         | 100                  | 1.7                            | 2.2  | 2.6  | 10-20             | 750                       | 1400 |
| KWM-19881CG | GaP             | Super Green      |                       | 570                                    | 30                       | 100        | 50         | 100                  | 1.7                            | 2.2  | 2.6  | 10-20             | 800                       | 1600 |
| KWM-19881C6 | GaAsP/GaP       | Yellow           |                       | 585                                    | 30                       | 100        | 50         | 100                  | 1.7                            | 1.9  | 2.6  | 10-20             | 750                       | 1400 |

REMARKS : 1. The average luminous intensity is obtained by summing the luminous intensity of each segment and dividing by the total number of segments.  
2. Luminous intensity is measured with a light sensor and filter combination that approximates the CIE (International Commission on Illumination) eye-response curve.  
3. Clean only by pure water, isopropanol, ethanol, Freon TF (or equivalent).