

# RAYCONN ELECTRONICS CO., LTD.

## SPECIFICATION FORM

### FEATURES

- ◇  $\Phi$ 5.0MM DOT SIZE
- ◇ 60.2MM $\times$ 60.2MM OUTLINE
- ◇ 8 $\times$ 8 FORMAT
- ◇ DUAL COLOR DOT MATRIX
- ◇ LOW POWER REQUIREMENT
- ◇ HIGH CONTRAST
- ◇ HIGH BRIGHTNESS
- ◇ SOLID STATE RELIABILITY

### DESCRIPTION

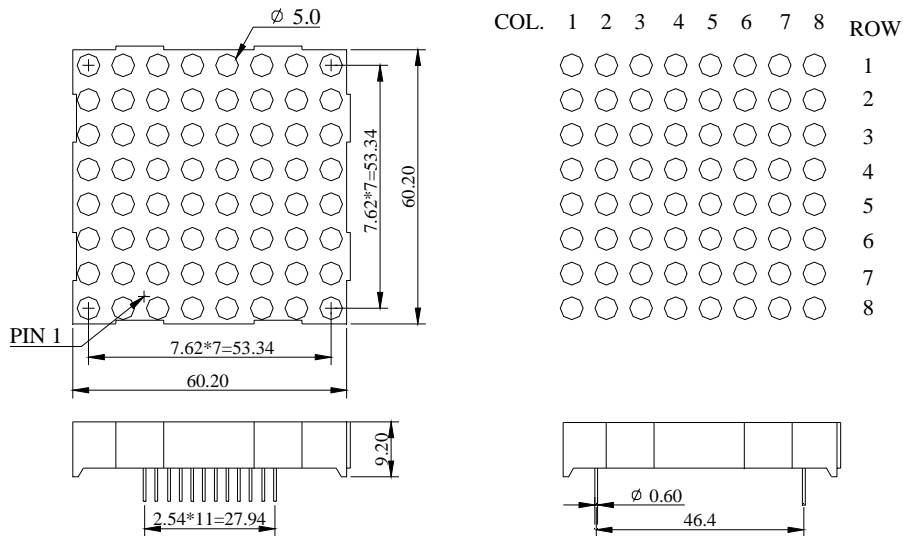
The REC-M2388ASRG is a  $\phi$ 5.0 dot size, 60.2mm $\times$ 60.2mm outline, 8 $\times$ 8 format, dual color (super-red and yellow-green), common anode, LED dot matrix display. This display utilizes super-red LED chips fabricated from GaAlAs epiwafer on GaAs substrate grown by liquid phase epitaxy and yellow green LED chips fabricated from GaP epiwafer on GaP substrate grown by liquid phase epitaxy. The devices have black face and white dots.

### DEVICE

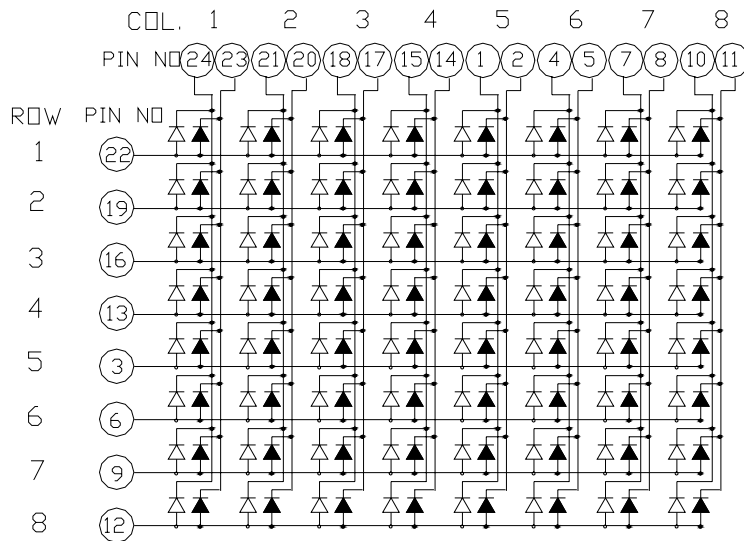
| PART NO.      | EMITTING COLOR             | DESCRIPTION                      |
|---------------|----------------------------|----------------------------------|
| REC-M2388ASRG | Super-Red and Yellow-Green | Row Anode, Black face, White dot |

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## PACKAGE DIMENSION



## INTERNAL CIRCUIT DIAGRAM



## PIN CONNECTION

| PIN NO. | CONNECTION       | PIN NO. | CONNECTION       | PIN NO. | CONNECTION       |
|---------|------------------|---------|------------------|---------|------------------|
| 1       | Cathode Col. 5 G | 9       | Anode Row 7      | 17      | Cathode Col. 3 R |
| 2       | Cathode Col. 5 R | 10      | Cathode Col. 8 G | 18      | Cathode Col. 3 G |
| 3       | Anode Row 5      | 11      | Cathode Col. 8 R | 19      | Anode Row 2      |
| 4       | Cathode Col. 6 G | 12      | Anode Row 8      | 20      | Cathode Col. 2 R |
| 5       | Cathode Col. 6 R | 13      | Anode Row 4      | 21      | Cathode Col. 2 G |
| 6       | Anode Row 6      | 14      | Cathode Col. 4 R | 22      | Anode Row 1      |
| 7       | Cathode Col. 7 G | 15      | Cathode Col. 4 G | 23      | Cathode Col. 1 R |
| 8       | Cathode Col. 7 R | 16      | Cathode Row 3    | 24      | Cathode Col. 1 G |

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## ABSOLUTE MAXIMUM RATING AT $T_A=25^\circ\text{C}$

| PARAMETER  | RED                | GREEN |
|--|--------------------|-------|
| Power Dissipation per dot, $P_{AD}$ (mW)   | 60                 | 75    |
| Peak Forward Current per dot, $I_{PF}$ (mA)<br>(1/8 duty cycle, 0.1mm pulse width) | 80                 | 80    |
| Continuous Forward Current per dot, $I_{AF}$ (mA)                                  | 20                 | 25    |
| Reverse Voltage per dot, $V_R$ (V)   | 5                  | 5     |
| Operating Temperature Range, $T_{opr}$   | - 25° C to + 85° C |       |
| Storage Temperature Range, $T_{stg}$   | - 30° C to + 90° C |       |
| Solder Temperature : 1 / 16 inch below seating plane for 3 seconds at 260° C       |                    |       |

## ELECTRO - OPTICAL CHARACTERISTICS AT $T_A=25^\circ\text{C}$

| PARAMETER  | RED  |      |       | GREEN |      |       |
|--|------|------|-------|-------|------|-------|
|  | MIN  | TYP  | MAX   | MIN   | TYP  | MAX   |
| Luminous Intensity per chip, $I_V$ (mcd, $I_F=20\text{mA}$ )       | 5    | 7.5  | 10    | 10    | 15   | 20    |
| Peak Emission Wavelength, $\lambda_P$ (nm, $I_F=20\text{mA}$ )     |      | 640  |       |       | 568  |       |
| Domonant Wavelength, $\lambda_d$ (nm, $I_F=20\text{mA}$ )          |      | 635  |       |       | 573  |       |
| Special Line Half-Width, $\Delta\lambda$ (nm, $I_F=20\text{mA}$ )  |      | 20   |       |       | 30   |       |
| Forward Voltage per dot, $V_F$ (V, $I_F=20\text{mA}$ )             | 1.60 | 1.80 | 2.20  | 1.80  | 2.15 | 2.60  |
| Reverse Current per dot, $I_R$ ( $\mu\text{A}$ , $V_R=5\text{V}$ ) |      |      | 50    |       |      | 50    |
| Luminous Intensity Matching Ratio, $I_{V-m}$ ( $I_F=20\text{mA}$ ) |      |      | 2 : 1 |       |      | 2 : 1 |