

# High Brightness 3.0-inch Dual-Color 7-Segment Numeric LED Displays

## SND-3012 SND-3019

### GENERAL DESCRIPTION

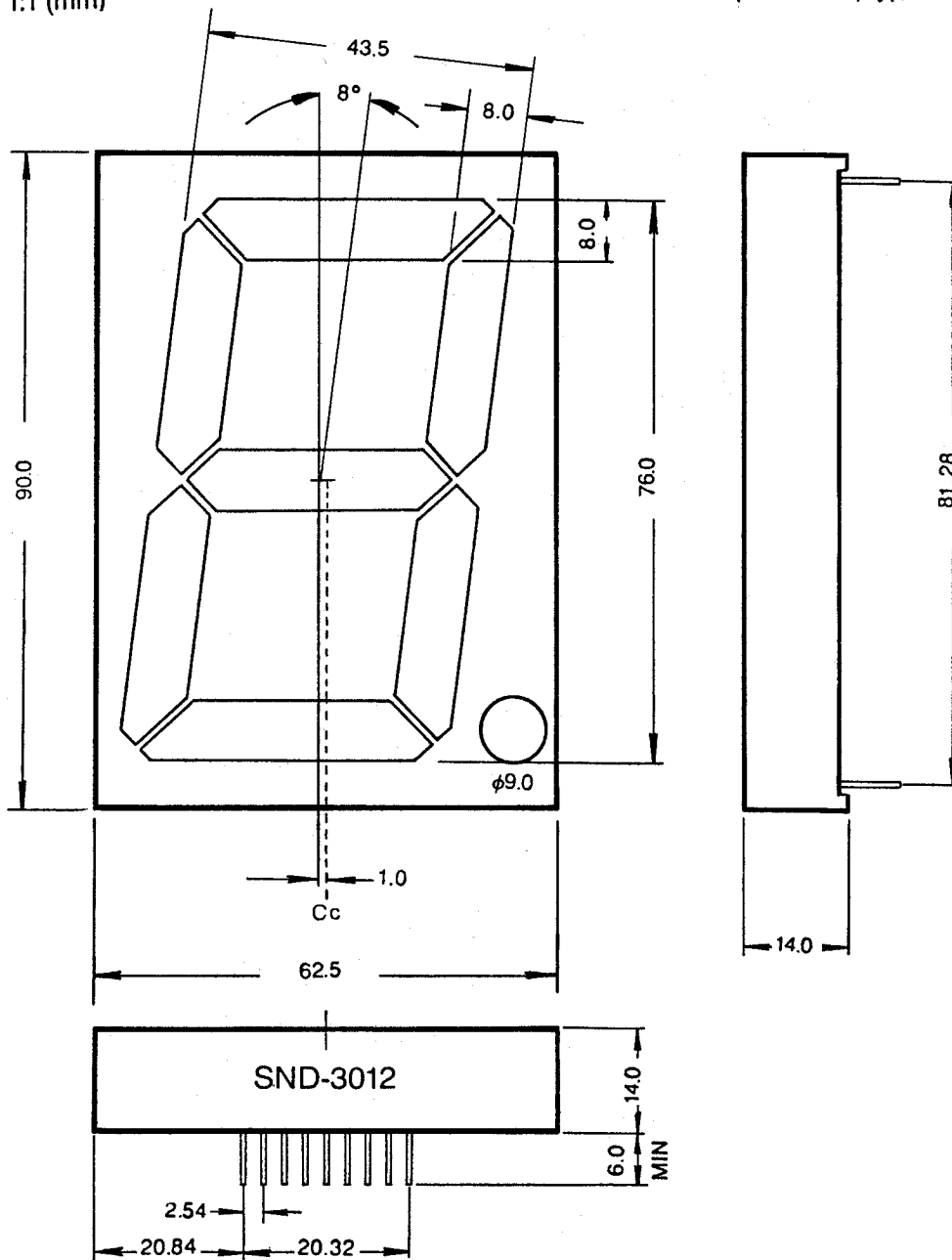
The SND-3012 and SND-3019 are high performance dual color 7 segment numeric LED displays of which character height is 3.0 inch (76.0mm). Four red and green chips are contained in each segment and it could be displayed in red or green color separately and appears in amber color when drive to red and green side in the same time.

### FEATURES

1. High brightness with high contrast
2. Uniform brightness and wide angle viewing
3. Solid state stability and long operation life
4. Cathode common (SND-3012) and anode common (SND-3019) types available.

### PACKAGE DIMENSIONS

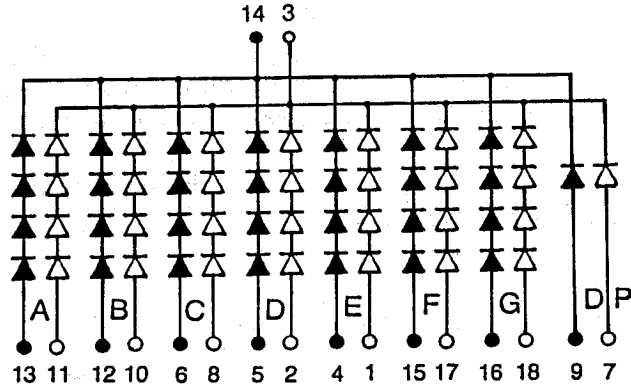
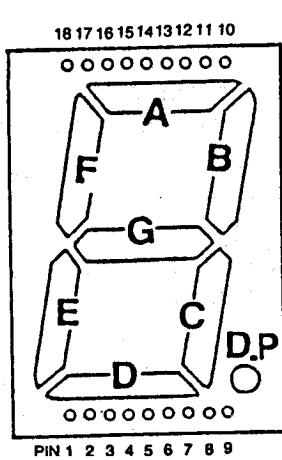
SCALE 1:1 (mm)



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## CONNECTIONS GUIDE (Top View)



SND-3012  
(Cathode Common)      Red  
   Green

Anode common (SND-3019) All diodes are reversed polarity

### SND 3012/3019UR-UG (GaAlAs-GaP) Absolute Maximum Ratings ( $T_a = 25^\circ\text{C}$ )

|                         |            |                  |
|-------------------------|------------|------------------|
| Power dissipation/Total | 2320       | mW               |
| Power dissipation/Seg   | 320        | mW               |
| Forward current         | 40         | mA               |
| Peak forward current    | 120*       | mA               |
| Reverse voltage         | 20         | V                |
| Operating temperature   | -25 ~ +85  | $^\circ\text{C}$ |
| Storage temperature     | -55 ~ +100 | $^\circ\text{C}$ |

### Electrical/Optical Characteristics ( $T_a = 25^\circ\text{C}$ )

| Parameter                | Symbol          | Chip | Conditions          | Min | Typ | Max. | Unit           |
|--------------------------|-----------------|------|---------------------|-----|-----|------|----------------|
| Forward voltage/Seg      | $V_F$           | UR   | $I_F = 15\text{mA}$ |     | 7.2 | 8.0  | V              |
|                          |                 | UG   |                     |     | 8.4 | 9.2  |                |
| Reverse current/Seg      | $I_R$           | ALL  | $V_R = 20\text{V}$  |     |     | 20   | $\mu\text{A}$  |
| Luminous intensity/digit | $I_V$           | UR   | $I_F = 15\text{mA}$ | 400 |     |      | $\mu\text{cd}$ |
|                          |                 | UG   |                     | 300 |     |      |                |
| Peak wavelength          | $\lambda_P$     | UR   | $I_F = 15\text{mA}$ |     | 660 |      | nm             |
|                          |                 | UG   |                     |     | 565 |      |                |
| Spectral line halfwidth  | $\Delta\lambda$ | UR   | $I_F = 15\text{mA}$ |     | 20  |      | nm             |
|                          |                 | UG   |                     |     | 30  |      |                |

### SND 3012/3019SR-UG (GaAsP/GaP-GaP) Absolute Maximum Ratings ( $T_a = 25^\circ\text{C}$ )

|                         |            |                  |
|-------------------------|------------|------------------|
| Power dissipation/Total | 2320       | mW               |
| Power dissipation/Seg   | 320        | mW               |
| Forward current         | 40         | mA               |
| Peak forward current    | 120*       | mA               |
| Reverse voltage         | 20         | V                |
| Operating temperature   | -25 ~ +85  | $^\circ\text{C}$ |
| Storage temperature     | -55 ~ +100 | $^\circ\text{C}$ |

### Electrical/Optical Characteristics ( $T_a = 25^\circ\text{C}$ )

| Parameter                | Symbol          | Chip | Conditions          | Min | Typ | Max. | Unit           |
|--------------------------|-----------------|------|---------------------|-----|-----|------|----------------|
| Forward voltage/Seg      | $V_F$           | SR   | $I_F = 15\text{mA}$ |     | 7.8 | 8.4  | V              |
|                          |                 | UG   |                     |     | 8.4 | 9.2  |                |
| Reverse current/Seg      | $I_R$           | ALL  | $V_R = 20\text{V}$  |     |     | 20   | $\mu\text{A}$  |
| Luminous intensity/digit | $I_V$           | SR   | $I_F = 15\text{mA}$ | 200 |     |      | $\mu\text{cd}$ |
|                          |                 | UG   |                     | 300 |     |      |                |
| Peak wavelength          | $\lambda_P$     | SR   | $I_F = 15\text{mA}$ |     | 635 |      | nm             |
|                          |                 | UG   |                     |     | 565 |      |                |
| Spectral line halfwidth  | $\Delta\lambda$ | SR   | $I_F = 15\text{mA}$ |     | 35  |      | nm             |
|                          |                 | UG   |                     |     | 30  |      |                |

\* Pulse Width ..... 1 ms  
Duty Cycle ..... 1/5