

# High Reliability 0.56-inch 5-Digits 7-Segment Numeric LED Displays

# SND-650 SND-657

## GENERAL DESCRIPTION

The SND-650 and the SND-657 series are high performance epoxy resin molded 5-digit 7-segment LED displays of which character height is 0.56-inch(14.1mm). These series provide excellent readability in bright ambients and available in red, orange and yellow-green emitting colors.

The standard unit is constructed with black face and milky white segment color.

## PACKAGE DIMENSIONS



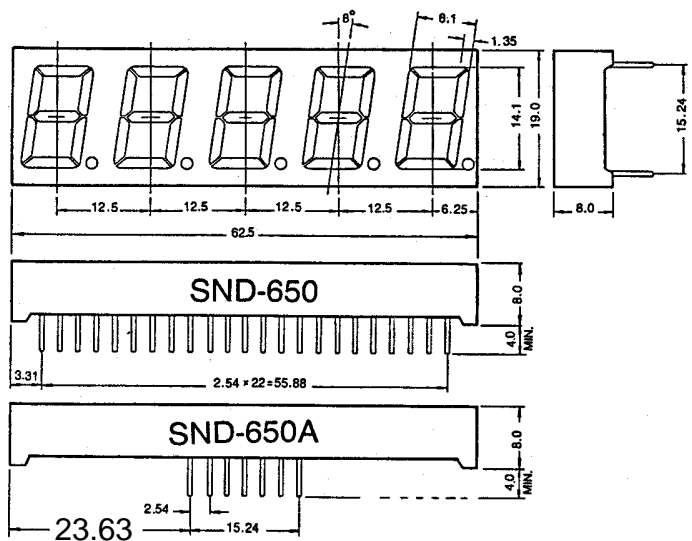
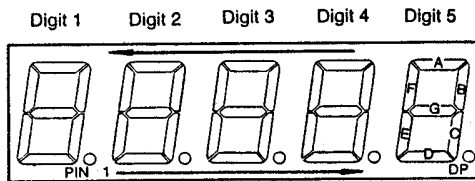
SCALE 1:1 (mm)

## FEATURES

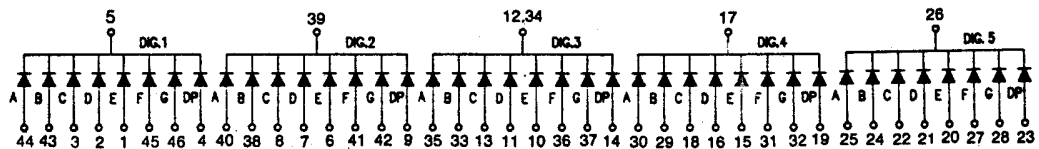
1. High brightness with high contrast
2. Uniform brightness and wide angle viewing
3. Low power consumption; Directly drive with I.C
4. Solid state reliability and long operation life
5. Cathode-common (SND-650) and anode-common (SND-657) types available

## PIN ARRANGEMENT

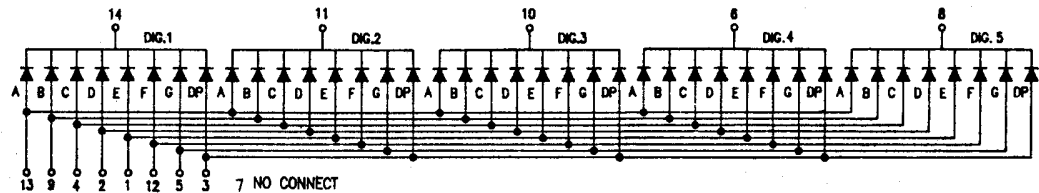
(Top View)



SND-650  
(Cathode Common)



SND-650A  
(Cathode Common)



SND-657 (Anode Common)  
SND-657A (Anode Common) } All diodes are reversed polarity



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### Red SND 650/657R (GaP)

Absolute Maximum Ratings (T<sub>a</sub> = 25°C)

Power dissipation/Total	1600	mW
Power dissipation/Seg	40	mW
Forward current	20	mA
Peak forward current	60*	mA
Reverse voltage	4	V
Operating temperature	- 25 ~ + 85	°C
Storage temperature	- 55 ~ + 100	°C

Electrical/Optical Characteristics (T<sub>a</sub> = 25°C)

Parameter	Symbol	Conditions	Min	Typ	Max.	Unit
Forward voltage/Seg	V <sub>F</sub>	I <sub>F</sub> = 10mA	—	2.1	2.3	V
Reverse current/Seg	I <sub>R</sub>	V <sub>R</sub> = 4V	—	—	10	μA
Luminous intensity/digit	I <sub>v</sub>	I <sub>F</sub> = 10mA	200	700	—	μcd
Peak wavelength	λ <sub>P</sub>	I <sub>F</sub> = 10mA	—	700	—	nm
Spectral line halfwidth	Δλ	I <sub>F</sub> = 10mA	—	30	—	nm

### Orange SND 650/657SR (GaAsP/GaP)

Absolute Maximum Ratings (T<sub>a</sub> = 25°C)

Power dissipation/Total	1600	mW
Power dissipation/Seg	40	mW
Forward current	20	mA
Peak forward current	60*	mA
Reverse voltage	4	V
Operating temperature	- 25 ~ + 85	°C
Storage temperature	- 55 ~ + 100	°C

Electrical/Optical Characteristics (T<sub>a</sub> = 25°C)

Parameter	Symbol	Conditions	Min	Typ	Max.	Unit
Forward voltage/Seg	V <sub>F</sub>	I <sub>F</sub> = 10mA	—	2.0	2.2	V
Reverse current/Seg	I <sub>R</sub>	V <sub>R</sub> = 4V	—	—	10	μA
Luminous intensity/digit	I <sub>v</sub>	I <sub>F</sub> = 10mA	600	1300	—	μcd
Peak wavelength	λ <sub>P</sub>	I <sub>F</sub> = 10mA	—	635	—	nm
Spectral line halfwidth	Δλ	I <sub>F</sub> = 10mA	—	35	—	nm

### Yellow-green SND 650/657UG (GaP)

Absolute Maximum Ratings (T<sub>a</sub> = 25°C)

Power dissipation/Total	1600	mW
Power dissipation/Seg	40	mW
Forward current	20	mA
Peak forward current	60*	mA
Reverse voltage	4	V
Operating temperature	- 25 ~ + 85	°C
Storage temperature	- 55 ~ + 100	°C

Electrical/Optical Characteristics (T<sub>a</sub> = 25°C)

Parameter	Symbol	Conditions	Min	Typ	Max.	Unit
Forward voltage/Seg	V <sub>F</sub>	I <sub>F</sub> = 10mA	—	2.1	2.3	V
Reverse current/Seg	I <sub>R</sub>	V <sub>R</sub> = 4V	—	—	10	μA
Luminous intensity/digit	I <sub>v</sub>	I <sub>F</sub> = 10mA	600	1300	—	μcd
Peak wavelength	λ <sub>P</sub>	I <sub>F</sub> = 10mA	—	565	—	nm
Spectral line halfwidth	Δλ	I <sub>F</sub> = 10mA	—	30	—	nm

### Red SND 650/657UR (GaAlAs)

Absolute Maximum Ratings (T<sub>a</sub> = 25°C)

Power dissipation/Total	1600	mW
Power dissipation/Seg	40	mW
Forward current	20	mA
Peak forward current	60*	mA
Reverse voltage	4	V
Operating temperature	- 25 ~ + 85	°C
Storage temperature	- 55 ~ + 100	°C

Electrical/Optical Characteristics (T<sub>a</sub> = 25°C)

Parameter	Symbol	Conditions	Min	Typ	Max.	Unit
Forward voltage/Seg	V <sub>F</sub>	I <sub>F</sub> = 10mA	—	1.85	2.1	V
Reverse current/Seg	I <sub>R</sub>	V <sub>R</sub> = 4V	—	—	10	μA
Luminous intensity/digit	I <sub>v</sub>	I <sub>F</sub> = 10mA	1800	3000	—	μcd
Peak wavelength	λ <sub>P</sub>	I <sub>F</sub> = 10mA	—	660	—	nm
Spectral line halfwidth	Δλ	I <sub>F</sub> = 10mA	—	20	—	nm

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