



BRIGHTTEK
BRIGHTTEK (EUROPE) LIMITED

Brighten Up The World With LED!



ISO/TS 16949:2009



BS EN ISO 14001:2004



QC 080000 IECQ HSPM

PRODUCT DATASHEET



- ▶ PTH Display
- ▶ 0.56" (14.2mm) 88:88
- ▶ Red (630nm)

NOR59D52BS



Release Date: 24 June 2021 Version: A1.0



SMD Display Series

PTH Display Series

RoHS
Compliant



FEATURES:

- **Package:** PTH Numeral Quadruple Digits Display
- **Forward Current:** 20mA per diode
- **Forward Voltage (typ.):** 2.0V per diode
- **Luminous Intensity Matching Rate:** 2.0:1
- **Colour:** Red
- **Wavelength:** 630nm
- **Materials:**
 - Die: AlGaInP
 - Resin: Epoxy (White Diffused)
 - Surface Colour: Black
- **Operating Temperature:** -25~+85°C
- **Storage Temperature:** -30~+85°C
- **Grouping parameters:**
 - Forward voltage
 - Luminous intensity
 - Dominant wavelength
- **Soldering methods:** Hand Solder or Reflow
- **Preconditioning:** acc. to JEDEC Level 3
- **Packing:** in carton

APPLICATIONS:

- 7-Segment Display
- Digital Display
- Information Board
- Counter
- Instrument Panels
- Audio Equipment

CHARACTERISTICS:

Absolute Maximum Characteristics (Ta=25°C)

Parameter	Symbol	Ratings	Unit
Forward Current *	I_F	20	mA
Peak Forward Current Duty 1/10, 0.1ms width	I_{FP}	80	mA
Reverse Voltage	V_R	5	V
Reverse Current @5V	I_R	100	μ A
Power Dissipation	P_D	75	mW
Operating Temperature	T_{OPR}	-25~+85	°C
Storage Temperature	T_{STG}	-30~+85	°C

1. All parameters are per diode.

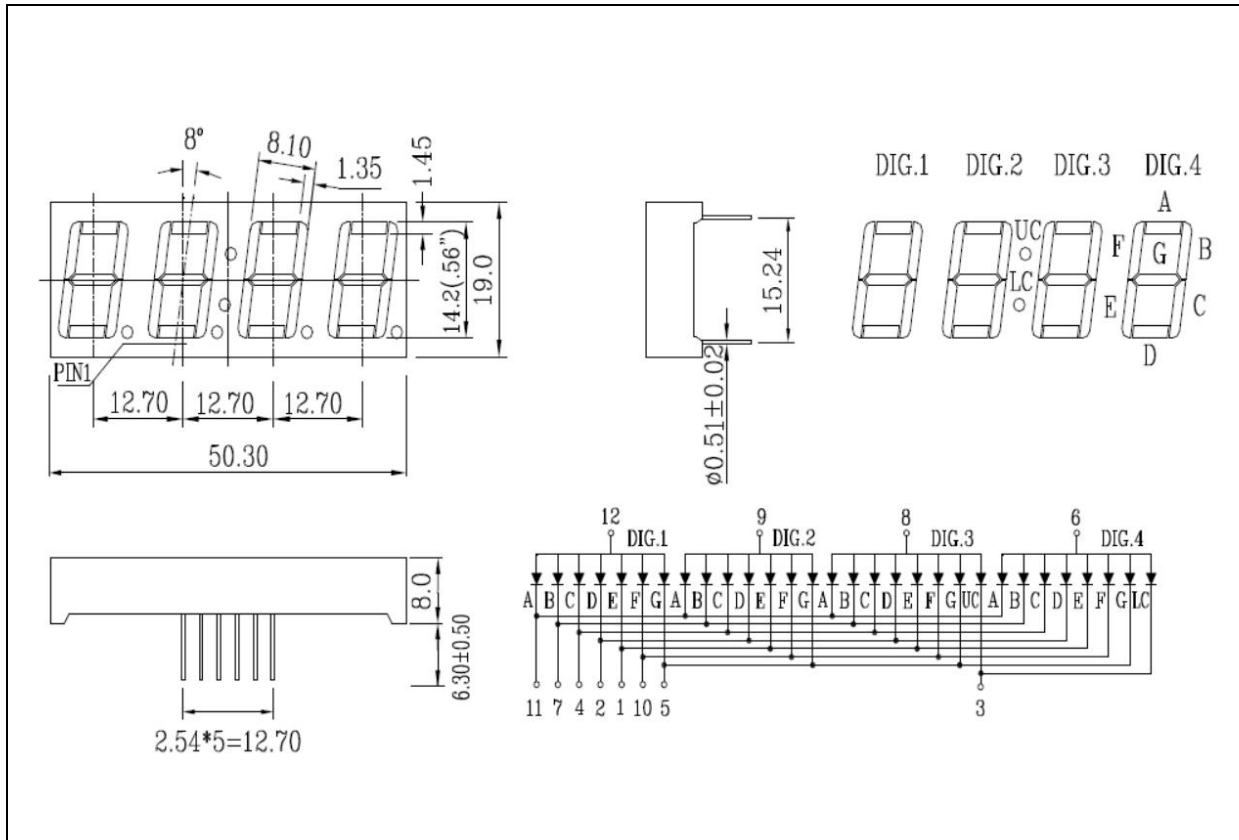
Electrical & Optical Characteristics (Ta=25°C)

Parameter	Symbol	Values			Unit	Test Condition
		Min.	Typ.	Max.		
Forward Voltage*	V_F	1.8	2.0	2.3	V	$I_F=20\text{mA}$
Luminous Intensity Matching Rate**	I_{V-m}	---	---	2.0:1	---	$I_F=20\text{mA}$
Dominant Wavelength	λ_D	---	630	---	nm	$I_F=20\text{mA}$
Spectral Line Half Bandwidth	$\Delta \lambda$	---	15	---	nm	$I_F=20\text{mA}$

1. Luminous intensity (I_v) $\pm 15\%$, Forward Voltage (V_F) $\pm 0.1V$, Viewing angle($2\theta_{1/2}$) $\pm 5\%$
2. * Voltage is per diode
3. ** Intensity is per segment

OUTLINE DIMENSION:

Package Dimension:



1. All dimensions are in millimetre (mm).
2. Tolerance ± 0.2 mm, unless otherwise noted.

PRECAUTIONS OF USE:

Storage:

It is recommended to store the products in the following conditions:

- Humidity: 60% R.H. Max.
- Temperature: 5°C~30°C (41°F ~86°F).

Shelf life in sealed bag: 12 months at 5°C~30°C and <60% R.H.

Once the package is opened, the products should be used within a week. Otherwise, they should be kept in a damp-proof box with desiccating agent <10% R.H. and apply baking before use.

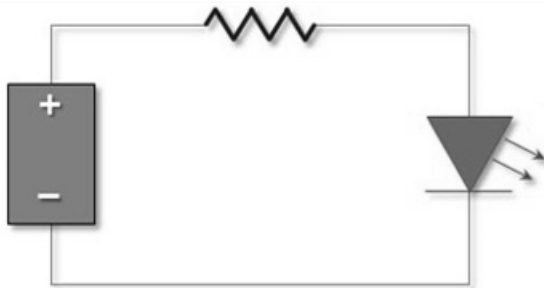
Baking:

It is recommended to bake the LED before soldering if the pack has been unsealed for longer than 24hrs. The suggested baking conditions are as followings:

- 60±3°C x 24hrs and <5%RH, taped / reel package.

It's normal to see slight color fading of carrier (light yellow) after baking in process.

Testing Circuit:



Must apply resistor(s) for protection (over current proof).

Cleaning:

Use alcohol-based cleaning solvents such as isopropyl alcohol to clean the LED carrier / package. Avoid putting any stress force directly on to the LED lens.

ESD (Electrostatic Discharge):

Static Electricity or power surge will damage the LED. Use of a conductive wrist band or anti-electrostatic glove is recommended when handling the LED all time. All devices, equipment, machinery, work tables, and storage racks must be properly grounded.

In the events of manual working in process, make sure the devices are well protected from ESD at any time.

REVISION RECORD:

Version	Date	Summary of Revision
A1.0	24/06/2021	Datasheet set-up.