



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

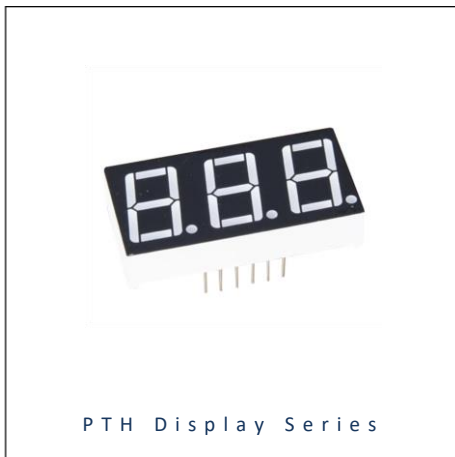


- ▶ PTH Display
- ▶ 0.56" (14.2mm) 8.8.8.
- ▶ Red (643nm)

NOR49D88BS
 NOR49D89BS



Release Date: 20 August 2019 Version: A1.0



PTH Display Series

PTH Display Series

RoHS
Compliant



FEATURES:

- **Package:** PTH Numeral Triple Digits Display
- **Forward Current:** 20mA per diode
- **Forward Voltage (typ.):** 1.85V per diode
- **Luminous Intensity (typ.):** 4.2mcd @20mA per diode
- **Colour:** Red
- **Wavelength:** 643nm
- **Materials:**
 - Die: GaAlAs
 - Resin: Epoxy (White Diffused)
 - Surface Colour: Grey
- **Operating Temperature:** -40~+85°C
- **Storage Temperature:** -40~+100°C
- **Grouping parameters:**
 - Forward voltage
 - Luminous intensity
 - Dominant wavelength
- **Soldering methods:** Reflow
- **Preconditioning:** acc. to JEDEC Level 3
- **Packing:** 400pcs/carton

APPLICATIONS:

- 7-Segment Display
- Triple Digital Display
- Information Board
- White Goods
- Counter

CHARACTERISTICS:

Absolute Maximum Characteristics (Ta=25°C)

Parameter	Symbol	Ratings	Unit
Forward Current *	I_F	20	mA
Peak Forward Current Duty 1/10 @1KHz	I_{FP}	100	mA
Reverse Current @5V	I_R	10	μ A
Power Dissipation	P_D	85	mW
Operating Temperature	T_{OPR}	-40~+85	°C
Storage Temperature	T_{STG}	-40~+100	°C

- All parameters are per diode.

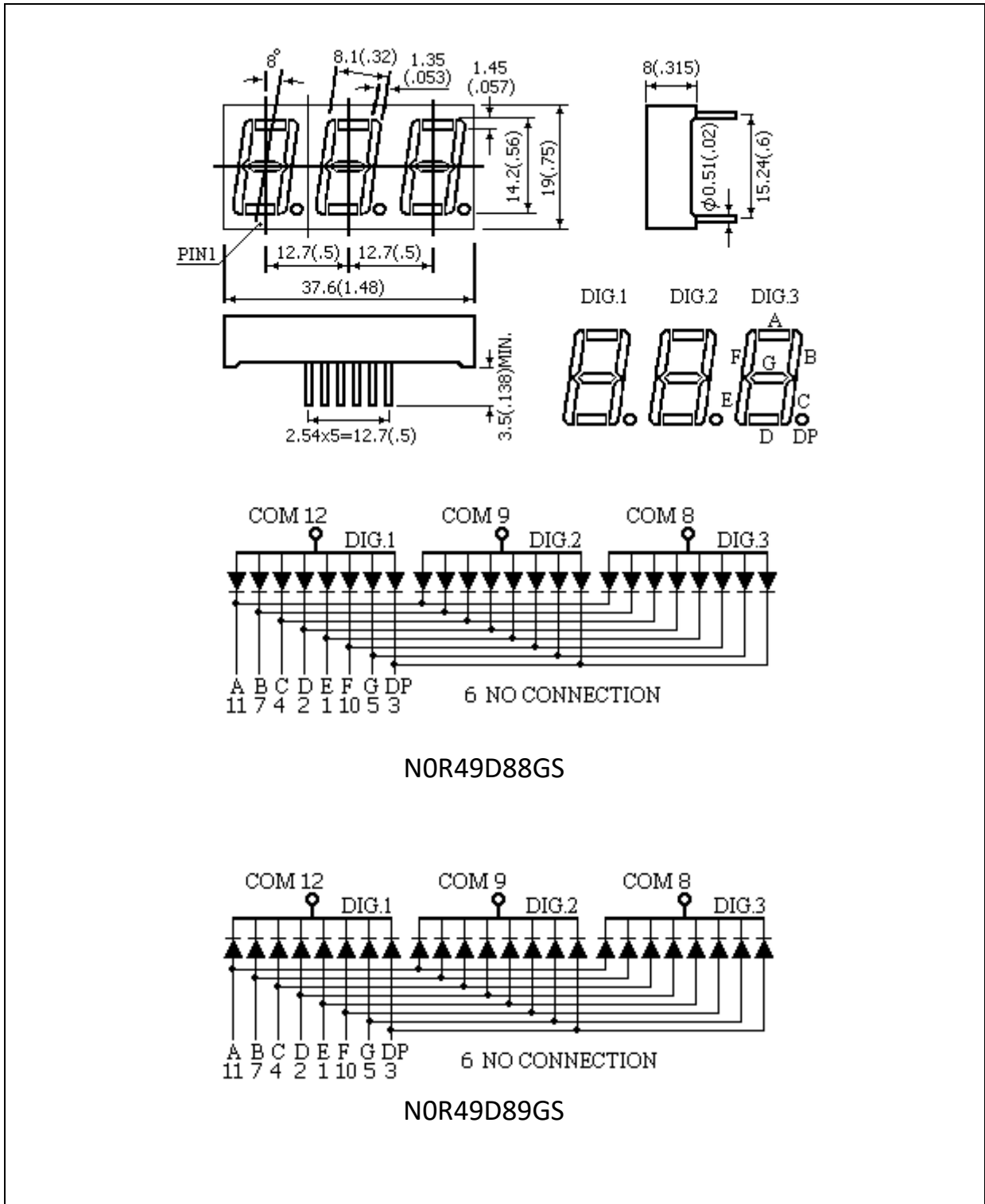
Electrical & Optical Characteristics (Ta=25°C)

Parameter	Symbol	Values			Unit	Test Condition
		Min.	Typ.	Max.		
Forward Voltage	V_F	1.7	1.85	2.5	V	$I_F=20mA$
Luminous Intensity	I_V	2.0	4.2	5.8	mcd	$I_F=20mA$
Peak Wavelength	λ_P	---	660	---	nm	$I_F=20mA$
Dominant Wavelength	λ_D	---	643	---	nm	$I_F=20mA$
Spectral Line Half Bandwidth	$\Delta \lambda$	---	20	---	nm	$I_F=20mA$

- Luminous intensity (I_V) $\pm 15\%$, Forward Voltage (V_F) $\pm 0.1V$, Viewing angle($2\theta_{1/2}$) $\pm 5\%$

OUTLINE DIMENSION:

Package Dimension:



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

BINNING GROUPS:

 Forward Voltage Classifications ($I_F = 20\text{mA}$):

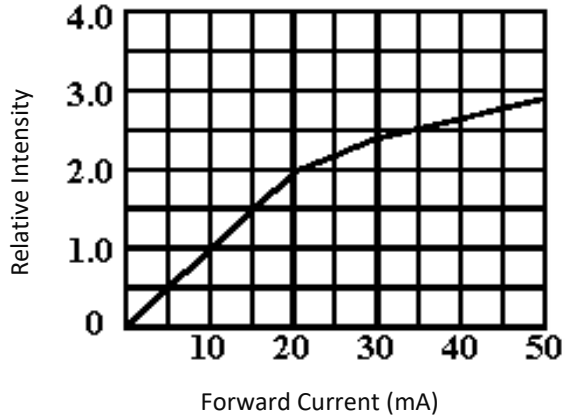
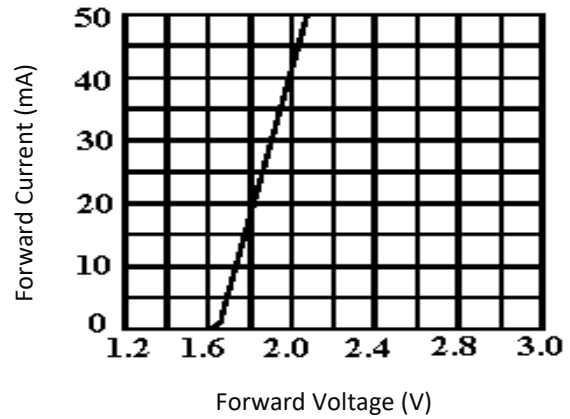
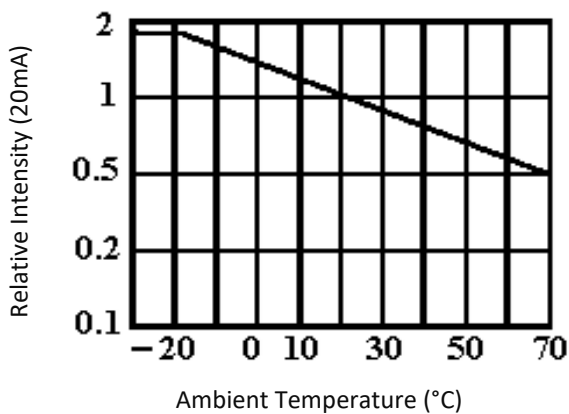
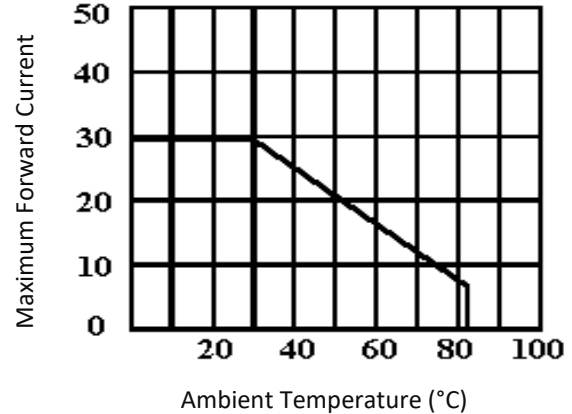
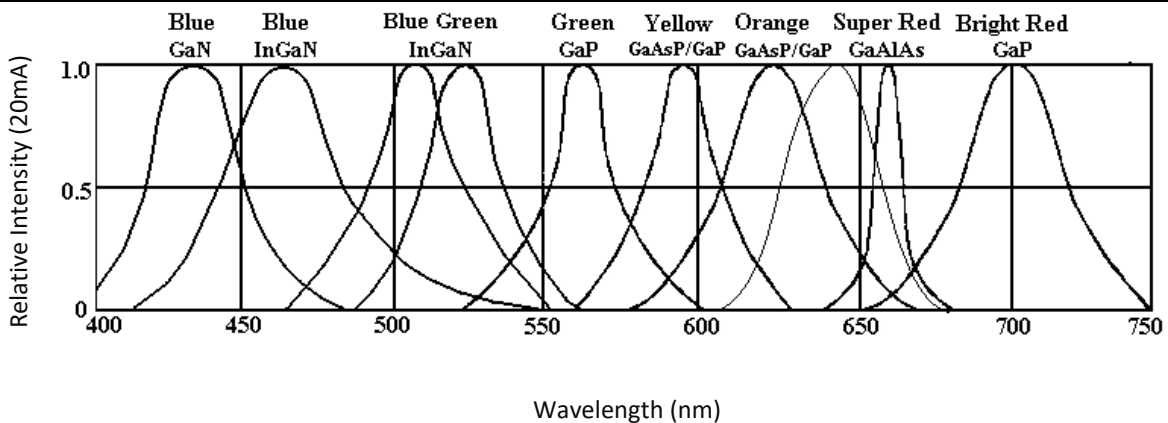
Code	Min.	Max.	Unit
V	1.7	2.5	V

 Luminous Intensity Classifications ($I_F = 20\text{mA}$):

Code	Min.	Max.	Unit
IV	2.0	5.8	mcd

 Dominant Wavelength Classifications ($I_F = 20\text{mA}$):

Code	Min.	Max.	Unit
R	630	660	nm

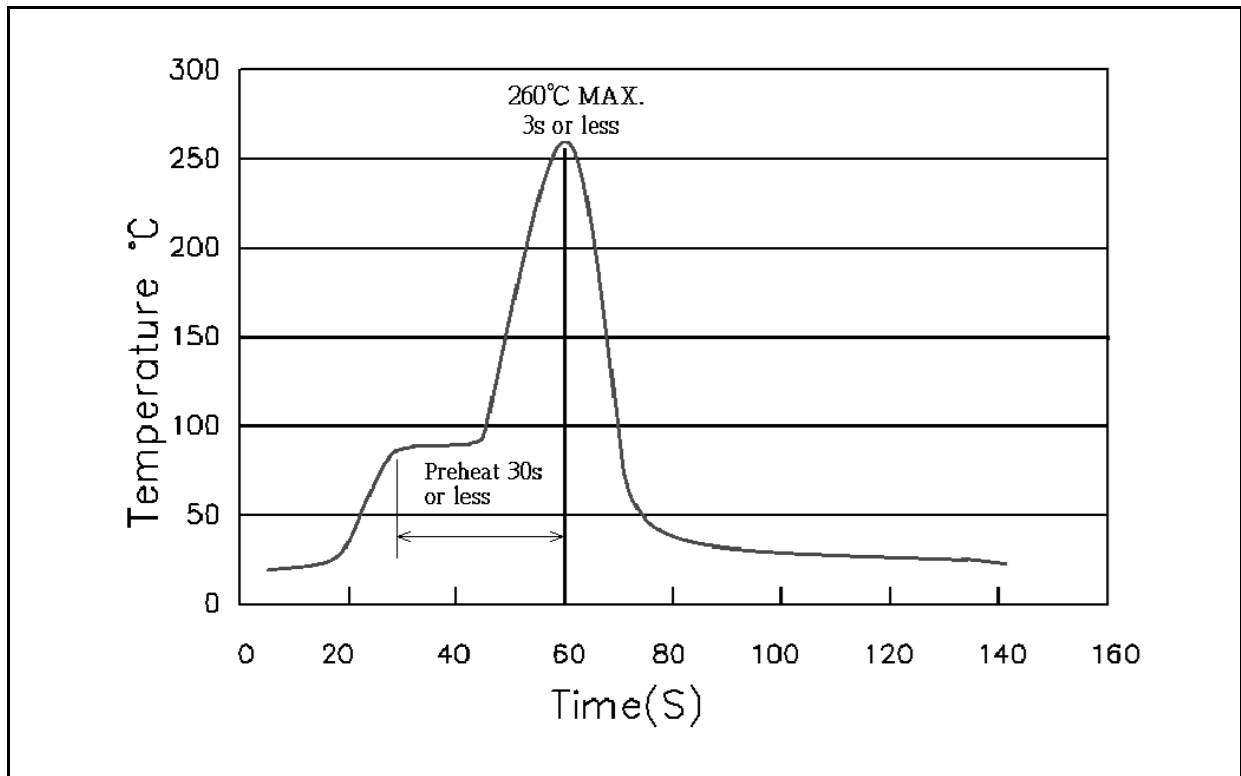
ELECTRO-OPTICAL CHARACTERISTICS:
Relative Intensity v.s. Forward Current

Forward Current v.s. Forward Voltage

Relative Intensity v.s. Temperature

Max. Forward Current v.s. Temperature

Relative Spectral Distribution


RECOMMENDED SOLDERING PROFILE:

Hand Solder (Solder Iron):

- Temperature at tip of iron: 300°C Max. (25W Max.).
- Soldering Time: 3 seconds \pm 1 sec.
- Maximum reflow soldering: 1 time.

Wave / Soldering Heat (DIP):

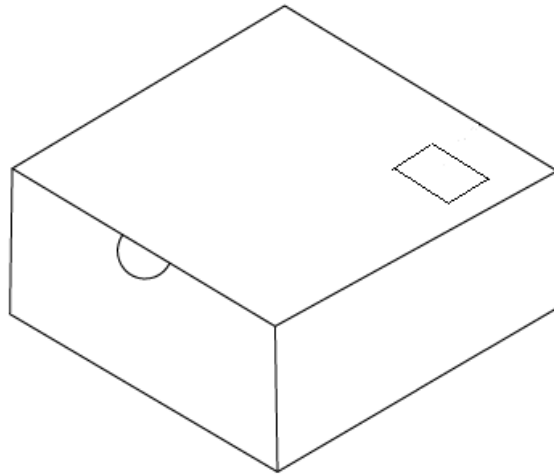


Note:

1. Maximum reflow soldering: 1 time.
2. Before, during, and after soldering, should not apply stress on the components and PCB board.

PACKING SPECIFICATION:

400pcs/carton



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 and apply baking.

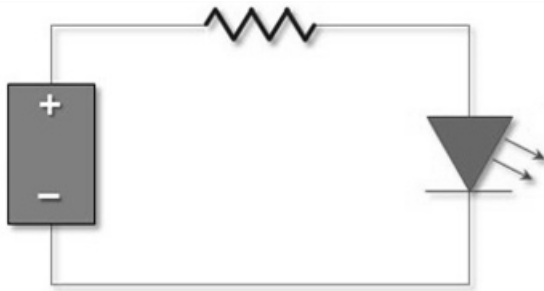
Baking:

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	20/08/2019	Datasheet set-up.