Red GaAsP 0.5-Inch ± 1 LED Displays

Optoelectronic Products

FND501, FND508 FND561, FND568

General Description

The FND501, FND561, FND508 and FND568 are red GaAsP overflow LED displays with a nominal 0.5-inch character height. These displays are for applications where the viewer is within twenty feet of the display.

Low Forward Voltage—Typically V_F = 1.7 V
Fits Standard DIP Sockets With 0.6-Inch Pin Row
Maximized Contrast Ratio With Integral Lens Cap
Horizontal Stacking 0.6-Inch Minimum, 1-Inch Typical
The FND561 And FND568 Are Suitable For Applications In High Ambient Light
FND501—Common Cathode, Right-Hand Decimal Point
FND508—Common Anode, Right-Hand Decimal Point
FND561—Common Cathode, Right-Hand Decimal Point, High Brightness
FND568—Common Anode, Right-Hand Decimal Point, High Brightness

Absolute Maximum Ratings

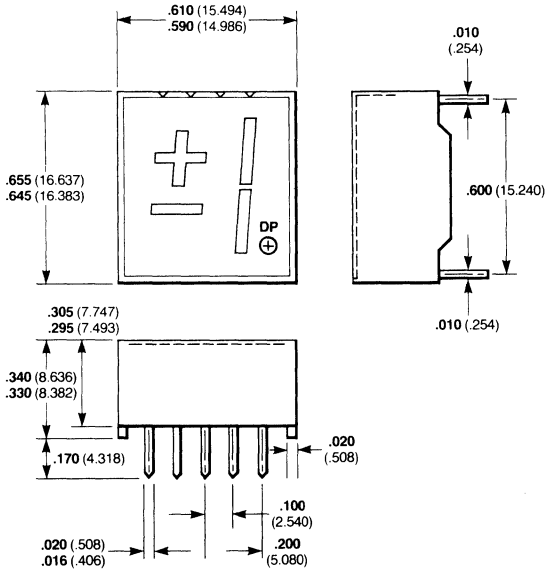
Maximum Temperature and Humidity

Storage Temperature	−25°C to +85°C
Operating Temperature	−25°C to +85°C
Pin Temperature (Soldering, 5 s)	260°C
Relative Humidity at 65°C	98%

Maximum Voltage and Currents

V_R	Reverse Voltage	3.0 V
I_F	Average Forward dc Current/Segment or Decimal Point	25 mA
	Derate from 25°C Ambient Temperature	0.3 mA/°C
I_{pk}	Peak Forward Current/ Segment or Decimal Point (100 μs pulse width) 1000 pps, T_A = 25°C	200 mA

Package Outline

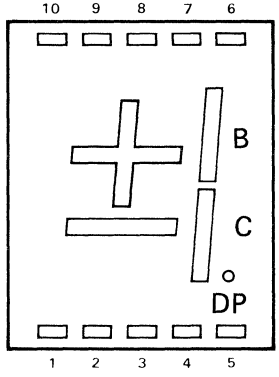


Notes
All dimensions in inches **bold** and millimeters (parentheses)
Tolerance unless specified = ±.015 (0.381)
For polarity indication the surface is ribbed
The unit LED segments cannot necessarily be seen through the lens cap
Lens cap color is red for red LED
Pins 3 and 8 are common

Connection Diagram
Typical Electrical Characteristics

FND501, FND508
FND561, FND568

Pin Connections
(Top View)



Pin	FND501/561	FND508/568
1	Minus	Minus
2	Cathode ±	Anode ±
3	Segment C	Segment C
4	Cathode 1/DP	Anode 1/DP
5	DP	DP
6	Segment B	Segment B
7	Cathode 1/DP	Anode 1/DP
8	Cathode ±	Anode ±
9	Plus	Plus
10	NC	NC

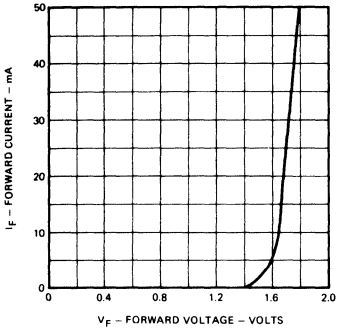
Electrical and Radiant Characteristics $T_A = 25°C$

Symbol	Characteristic	Min	Typ	Max	Units	Test Conditions
V_F	Forward Voltage		1.7	2.0	V	I_F = 20 mA
BV_R	Reverse Breakdown Voltage	3.0	12		V	I_R = 1.0 mA
I_O	Axial Luminous Intensity, Each Segment					
	FND501, FND508	300	600		μcd	I_F = 20 mA
	FND561, FND568	740	1200		μcd	I_F = 20 mA
ΔI_O	Intensity Matching, Segment-to-Segment		±33		%	I_F = 20 mA
	Intensity Matching Within One Intensity Class		±20		%	I_F = 20 mA, all segments at once
L_O	Average Segment Luminance					
	FND501, FND508		35		ftL	I_F = 20 mA
	FND561, FND568		70		ftL	I_F = 20 mA
$\theta_{1/2}$	Viewing Angle to Half Intensity		±27		degrees	
λ_{pk}	Peak Wavelength		665		nm	I_F = 20 mA

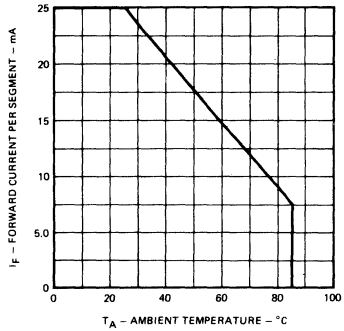
Typical Electrical Characteristic Curves

FND501, FND508 FND561, FND568

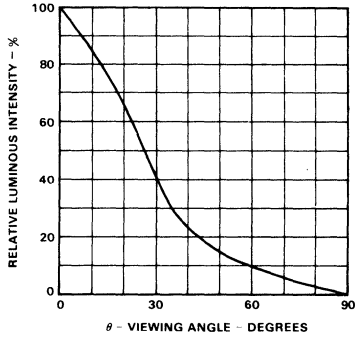
Forward Current vs Forward Voltage



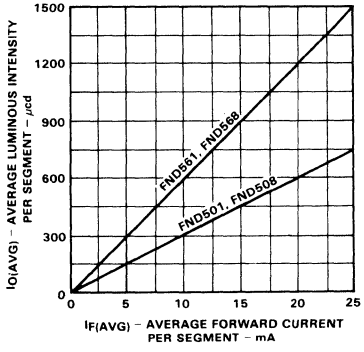
Maximum Average Current Rating vs Ambient Temperature



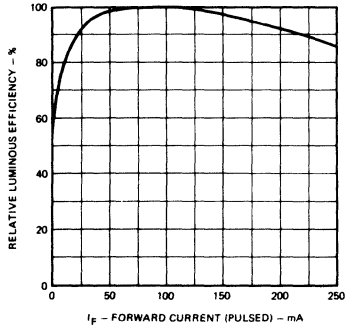
Angular Distribution of Luminous Intensity



Average Luminous Intensity vs Average Forward Current



Relative Luminous Efficiency (mcd per mA) vs Peak Current per Segment



Relative Luminous Intensity vs Junction Temperature