Red GaAsP 0.362-Inch ± 1 LED Displays

Optoelectronic Products

FND358 FND368

General Description

The FND358 and FND368 are red GaAsP ± 1 LED displays with nominal 0.362-inch character height in common-cathode configuration. These displays are for applications in which the viewer is within fifteen feet of the display.

Ideal Companion to FND357/FND367
Low Current Requirements 2–20 mA/Segment
Low Forward Voltage—Typically V_F = 1.7 V
Intensity Code Marking For Uniform Displays
FND368 Suitable For Use In High Ambient Light
Maximized Contrast Ratio With Integral Lens Cap
FND358—Common Cathode, Right-Hand Decimal Point
FND368—Common Cathode, Right-Hand Decimal Point, High Brightness

Absolute Maximum Ratings

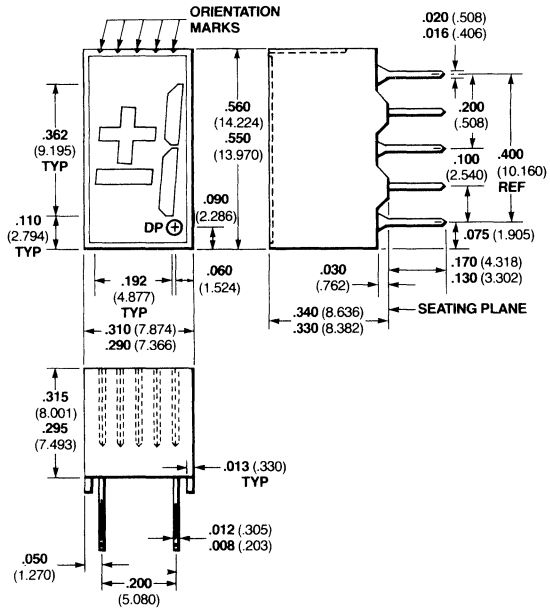
Maximum Temperature and Humidity

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

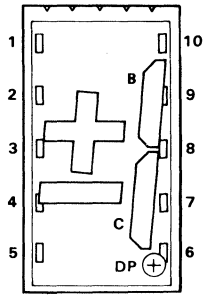


Notes
All dimensions in inches **bold** and millimeters (parentheses)
For polarity indication the top surface is ribbed
The unit LED segments cannot necessarily be seen through the lens cap
Lens cap color is red for red LED
Pins 1 and 6 are common
All dimensions are ±**.015** (.381)

Connection Diagram
Typical Electrical Characteristics

FND358
FND368

Pin Connections
(Top View)



Pin
1 Common Cathode
2 Plus Sign
3 Minus Sign
4 NC
5 Omitted
6 Common Cathode
7 Decimal Point
8 Segment C
9 Segment B
10 NC

Electrical and Radiant Characteristics $T_A = 25°C$

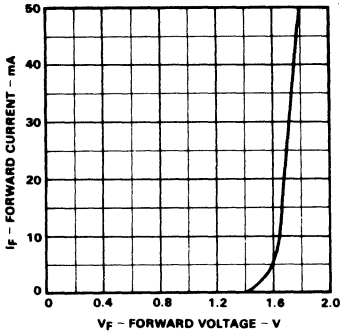
Symbol	Characteristic	Min	Typ	Max	Units	Test Conditions
V_F	Forward Voltage	1.5	1.7	2.0	V	I_F = 20 mA
BV_R	Reverse Breakdown Voltage	3.0	12		V	I_R = 1.0 mA
I_O	Axial Luminous Intensity, Average Each Segment (Note 1)					
	FND358	240	450		µcd	I_F = 20 mA
	FND368	590	900		µcd	I_F = 20 mA
ΔI_O	Intensity Matching, Segment-to-Segment (Note 3)		±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 (Note 2)					
	FND358		26		ftL	I_F = 20 mA
	FND368		52		ftL	I_F = 20 mA
$\theta_{½}$	Viewing Angle to Half Intensity		±27		degrees	
λ_{pk}	Peak Wavelength		665		nm	I_F = 20 mA

Notes
1. Typical operating current under single digit (dc) drive is approximately 2 to 20 mA average per segment for most ambient light conditions.
2. Measured on mechanical axis of package. See Average Luminous Intensity curve for other forward currents.
3. Segment-to-segment from average segment intensity.

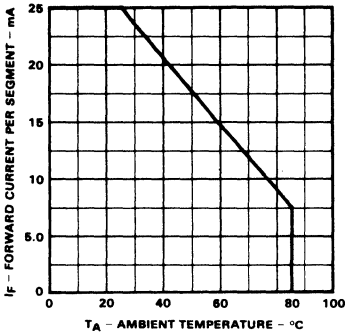
Typical Electrical Characteristic Curves

FND358
FND368

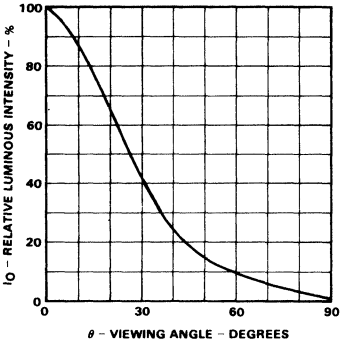
Forward Current vs Forward Voltage



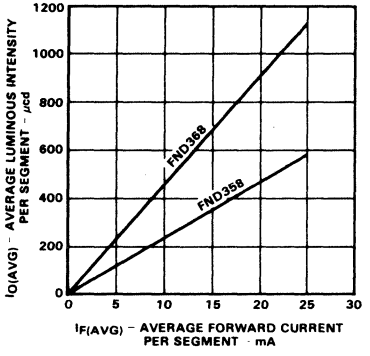
Maximum Average Current Rating vs Ambient Temperature



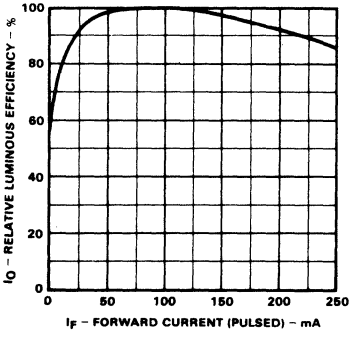
Angular Distribution of Luminous Intensity



Average Luminous Intensity vs Average Forward Current



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



Relative Luminous Intensity vs Junction Temperature