Red GaAsP 0.362-Inch 7-Segment Numeric LED Displays

Optoelectronic Products

FND350, FND360 FND357, FND367

General Description

The FND350, FND360, FND357 and FND367 are red GaAsP 7-segment LED displays with a 0.362-inch character height. These displays are designed for applications in which the viewer is within fifteen feet of the display.

Compact—10 Digits In 3-Inch Panel Width
Low Current Requirements 2-20 mA/Segment
Low Forward Voltage—V_F = 1.7 V
Intensity Code Marking For Uniform Displays
Maximized Contrast Ratio With Integral Lens Cap
FND360, FND367 Suitable For Use In High Ambient Light
FND350—Common Anode, Right Hand Decimal Point
FND360–Common Anode, Right Hand Decimal Point, High Brightness
FND357—Common Cathode, Right Hand Decimal Point
FND367—Common Cathode, Right Hand Decimal Point, High Brightness

Absolute Maximum Ratings

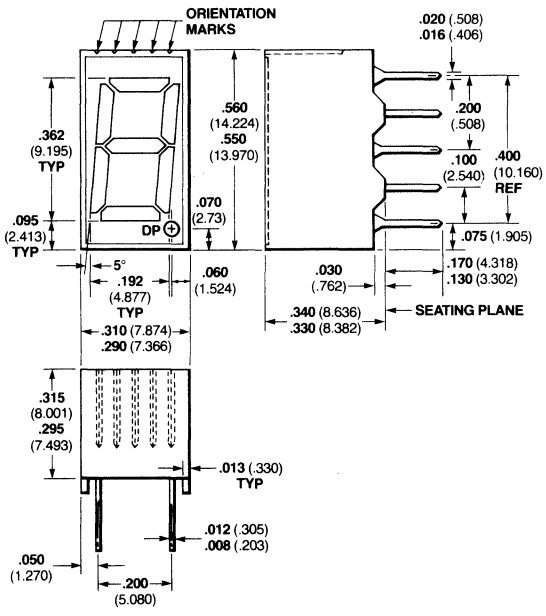
Maximum Temperature and Humidity

Operating Temperature	−25°C to +85°C
Storage 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 Current/Segment or Decimal Point (100 μs pulse) 1000 pps, T_A = 25°C	200 mA

Package Outline

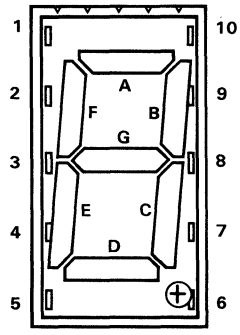


Notes
All dimensions in inches **bold** and millimeters (parentheses)
Tolerance unless specified = ±.015 (±.381)

Connection Diagram
Typical Electrical Characteristics

FND350, FND357
FND360, FND367

Pin Connections
(Front View)



Pin	FND357/367	FND350/360
1	Common Cathode	Common Anode
2	Segment F	Segment F
3	Segment G	Segment G
4	Segment E	Segment E
5	Segment D	Segment D
6	Common Cathode	Common Anode
7	Decimal Point	Decimal Point
8	Segment C	Segment C
9	Segment B	Segment B
10	Segment A	Segment A

Electrical Characteristics $T_A = 25°C$

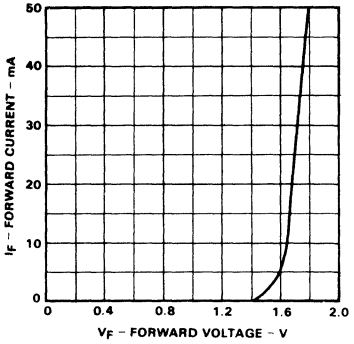
Symbol	Characteristics	Min	Typ	Max	Units	Test Conditions
V_F	Forward Voltage		1.7	2.0	V	I_F = 20 mA
BV_R	Reverse Breakdown Voltage	3.0	12		V	I_R = 1.0 mA
I_O	Axial Luminous Intensity					
	Each Segment (Note 1)					
	FND350, 357	240	450		μcd	I_F = 20 mA
	FND360, 367	590	900			
ΔI_O	Intensity Matching, 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)					
	FND350, 357		26		ftL	I_F = 20 mA
	FND360, 367		52			
$\theta_{1/2}$	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. The 125 mA specification is a representative peak current.
2. Measured on mechanical axis of package. See Average Luminous Intensity curve for other forward currents.
3. Segment-to-segment from average segment intensity.

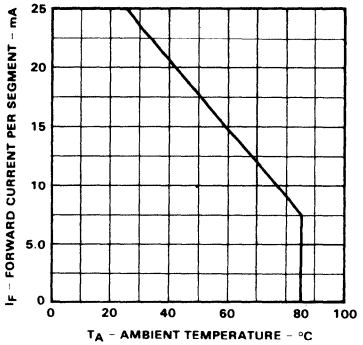
Typical Electrical Characteristic Curves

FND350, FND357 FND360, FND367

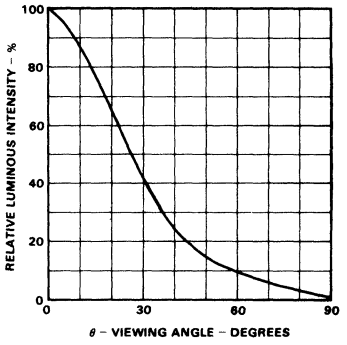
Forward Current vs Forward Voltage



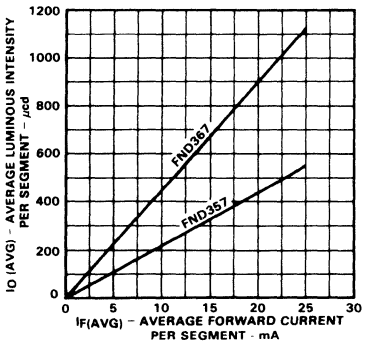
Maximum Average Current Rating vs Ambient Temperature



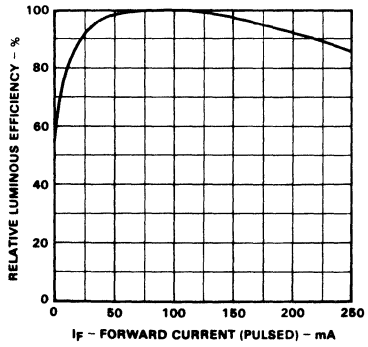
Angular Distribution of Luminous Intensity



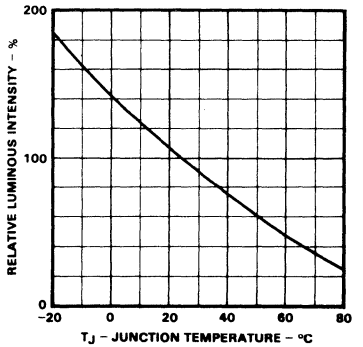
Average Luminous Intensity vs Average Forward Current



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



Relative Luminous Intensity vs Junction Temperature



Typical Electrical Characteristic Curves (Cont'd)

Emission Spectrum