ELECTRONICS, INC.
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NTE3115, NTE3116, NTE3117
Bar Graph Display

Description:

The NTE3115 (High–Efficiency Red), NTE3116 (High Efficiency Green), and NTE3117 (Yellow) are 10–segment bar graph displays with separate anodes and cathodes for each light segment. The packages are end stackable.

Features:

- Large Segments, Closely Spaced
- End Stackable
- Fast Switching, Excellent for Multiplexing
- Low Power Consumption
- Directly Compatible with IC's
- Wide Viewing Angle
- Standard .300" DIP Lead Spacing
- Categorized for Luminous Intensity (Note 1)

Absolute Maximum Ratings:

Power Dissipation (T_A = +25°C) 750mW
  Derate Linearly from 50°C . . . . . –14.3mW/°C
Operating Temperature Range . . . . . –40° to +85°C
Storage Temperature Range . . . . . –40° to +85°C
Continuous Forward Current
  Total
    NTE3115, NTE3116 . . . . . 300mA
    NTE3117 . . . . . 200mA
  Per Segment
    NTE3115, NTE3116 . . . . . 30mA
    NTE3117 . . . . . 25mA
Reverse Voltage, Per Segment 6V
Lead Temperature (During Soldering, 5sec max, Note 2) . . . . . +260°C

Typical Thermal Characteristics:

Thermal Resistance, Junction–to–Free–Air, R_{thJA} . . . . . 160°C/W
Wavelength Temperature Coefficient (Case Temperature) . . . . . 1.0Å/°C
Forward Voltage Temperature Coefficient
  NTE3115 . . . . . –2.0mV/°C
  NTE3116 . . . . . 1.4mV/°C
  NTE3117 . . . . . –1.5mV/°C

Note 1. The average Luminous Intensity is obtained by summing the Luminous Intensity of each segment and dividing by the total number of segments. The standard of measurement is the Photo Research Corp. "Spectra" Microcandela Meter (Model IV–D) corrected for wavelength. Intensity will not vary more than ±33.3% between all segments within a unit.

Note 2. Leads immersed to 1/16" (1.6mm) from the body of the device. Maximum unit surface temperature is +140°C. For flux removal, Freon TF, Freon TE, isoproponal or water may be used up to their boiling points.

Electro–Optical Characteristics: (T_A = +25°C unless otherwise specified)

Parameter	Test Conditions	Min	Typ	Max	Unit
Forward Voltage NTE3115, NTE3117	I_F = 10mA	–	2.0	2.5	V
NTE3116		–	2.2	3.0	V
Luminous Intensity (Unit Average)	I_F = 10mA, Note 1	510	–	–	µcd
Pulsed Luminous Intensity (NTE3116 Only)	I_F = 60mA peak, 1:6 DF	710	–	–	µcd
Peak Emission Wavelength NTE3115		–	630	–	nm
NTE3116		–	562	–	nm
NTE3117		–	585	–	nm
Spectral Line Half Width NTE3115, NTE3117		–	40	–	nm
NTE3116		–	30	–	nm
Dynamic Resistance, Segment NTE3115, NTE3117	I_F = 20mA	–	26	–	Ω
NTE3116		–	12	–	Ω
Capacitance NTE3115, NTE3117	V = 0, f = 1MHz	–	35	–	pF
NTE3116		–	40	–	pF
Switching Time	I_F = 10mA	–	500	–	ns
Reverse Voltage	I_R = 100µA	6.0	–	–	V

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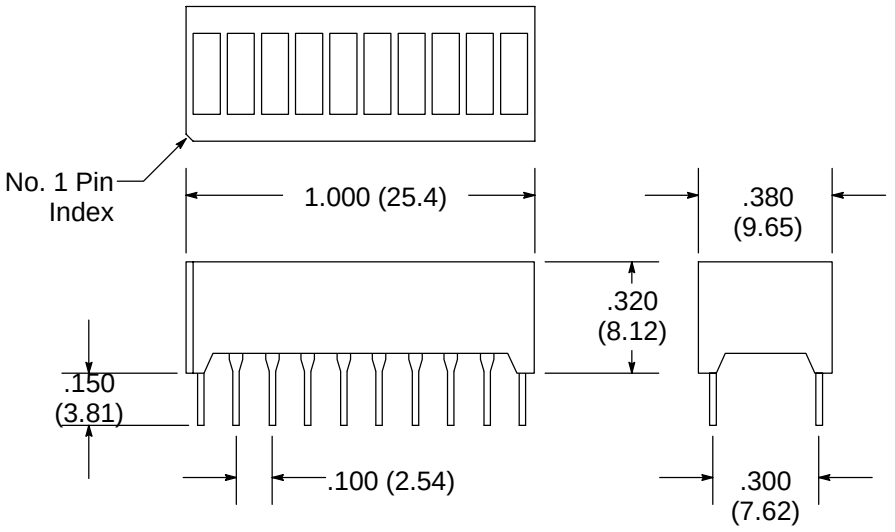

Pin	Output	Pin	Output
1	D1 Anode	11	D10 Cathode
2	D2 Anode	12	D9 Cathode
3	D3 Anode	13	D8 Cathode
4	D4 Anode	14	D7 Cathode
5	D5 Anode	15	D6 Cathode
6	D6 Anode	16	D5 Cathode
7	D7 Anode	17	D4 Cathode
8	D8 Anode	18	D3 Cathode
9	D9 Anode	19	D2 Cathode
10	D10 Anode	20	D1 Cathode