

# TYPES TIL312 THRU TIL317, TIL327 THRU TIL329, TIL339 THRU TIL341 NUMERIC DISPLAYS

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## SOLID-STATE VISIBLE DISPLAYS WITH RED, GREEN, AMBER OR YELLOW CHARACTERS

- 7,62-mm (0.300-inch) Character Height
- Continuous Uniform Segments
- Wide Viewing Angle
- High Contrast
- Categorized for Uniformity of Luminous Intensity among Units within Each Category

	SEVEN SEGMENTS		
	COMMON ANODE, TWO DECIMALS	COMMON CATHODE, ONE DECIMAL	PLUS/MINUS ONE LEFT DECIMAL
RED	TIL312	TIL313	TIL327
GREEN	TIL314	TIL315	TIL328
AMBER	TIL316	TIL317	TIL329
YELLOW	TIL339	TIL340	TIL341

### mechanical data

TIL312, TIL314  
TIL316, TIL339

TIL313, TIL315  
TIL317, TIL340

TIL327, TIL328  
TIL329, TIL341

END AND BOTTOM VIEWS  
AND TERMINAL DETAIL  
FOR ALL NINE TYPES

NOTES:

- All linear dimensions are in millimeters and parenthetically in inches.
- The true position spacing (T.P.) between centerlines is 2,54 mm (0.100 inch). Each pin centerline is within 0,25 mm (0.010 inch) of its true longitudinal position relative to pin 1.
- All dimensions associated with segments and decimal points are nominal.
- Left decimal points of TIL313, TIL315, TIL317, and TIL340 are not operational.

TIL312  
TIL314  
TIL316  
TIL339

TIL313  
TIL315  
TIL317  
TIL340

TIL327  
TIL328  
TIL329  
TIL341

# TYPES TIL312 THRU TIL317, TIL327 THRU TIL329, TIL339 THRU TIL341 NUMERIC DISPLAYS

### mechanical data (continued)

The display chips are mounted on a header and this assembly is then molded within an electrically nonconductive plastic case. To optimize device performance, materials are used that are limited to certain solvents for cleaning operations. It is recommended that only Freon TF<sup>†</sup>, isopropanol, or water be used. For high contrast the red displays have a black body; the green, amber, and yellow displays have neutral grey bodies.

### absolute maximum ratings

Reverse Voltage at 25 °C Free-Air Temperature, Each Segment or Decimal Point	3 V
Peak Forward Current at (or below) 25 °C Free-Air Temperature, Each Segment or Decimal Point	150 mA
Average Forward Current at (or below) 25 °C Free-Air Temperature (See Notes 1 and 2), Each Segment or Decimal Point	25 mA
Operating Free-Air Temperature Range	-25 °C to 85 °C
Storage Temperature Range	-25 °C to 85 °C
Lead Temperature 1,6 mm (1/16 Inch) below Seating Plane for 5 Seconds	230 °C

NOTES: 1. This average value applies for any 10-ms period.  
2. Derate linearly to 10 mA at 85 °C free-air temperature at the rate of 0.25 mA/°C.

### Operating characteristics of each segment or decimal point at 25 °C free-air temperature

PARAMETER	TEST CONDITIONS	RED TIL312, TIL313, TIL327			GREEN TIL314, TIL315 TIL328			UNIT
		MIN	TYP	MAX	MIN	TYP	MAX	
$I_v$ Luminous Intensity (See Note 3)	Segment	250	800		250	700		$\mu\text{cd}$
	Decimal Point	300			250			
Segment-to-Segment Luminous Intensity Ratio	$I_F = 20 \text{ mA}$ per segment	<1.5:1			<1.5:1			
$\lambda_p$ Wavelength at Peak Emission		640	655	680	565			nm
$\Delta\lambda$ Spectral Bandwidth		20			40			nm
$V_F$ Static Forward Voltage	$I_F = 10 \text{ mA}$	1.5	1.7	2	2.5	2.7		V
$I_R$ Static Reverse Current	$V_R = 3 \text{ V}$	<10			<10			$\mu\text{A}$

PARAMETER	TEST CONDITIONS	AMBER TIL316, TIL317, TIL329			YELLOW TIL339, TIL340, TIL341			UNIT
		MIN	TYP	MAX	MIN	TYP	MAX	
$I_v$ Luminous Intensity (See Note 3)	Segment	250	800		250	800		$\mu\text{cd}$
	Decimal Point	300			300			
Segment-to-Segment Luminous Intensity Ratio	$I_F = 20 \text{ mA}$ per segment	<1.5:1			<1.5:1			
$\lambda_p$ Wavelength at Peak Emission		588			580			nm
$\Delta\lambda$ Spectral Bandwidth		40			40			nm
$V_F$ Static Forward Voltage	$I_F = 10 \text{ mA}$	2.4	2.7		2.5	2.7		V
$I_R$ Static Reverse Current	$V_R = 3 \text{ V}$	<10			<10			$\mu\text{A}$

NOTE 3: Luminous Intensity is measured with a light sensor and filter combination that approximates the CIE (International Commission on Illumination) eye-response curve.

<sup>†</sup> Trademark of E.I. duPont de Nemours, Inc.