

Red, Green and Yellow T-1 LED Lamps

Optoelectronic Products

TIL209A TIL212 TIL232

General Description

The TIL209A is a red GaAsP T-1 lamp. The TIL212 is a yellow GaAsP/GaP T-1 lamp, and the TIL232 is a green GaP T-1 lamp. These devices provide a low-cost lamp for applications where space is at a premium.

Small Size

Three Colors Available

Low Power Consumption Means IC Compatibility

No Socket Required

Absolute Maximum Ratings

Maximum Temperature and Humidity

Operating Temperature	-40°C to +80°C
Storage Temperature	-40°C to +80°C
Pin Temperature (Soldering, 5 s)	230°C
Relative Humidity at 85°C	85%

Maximum Power Dissipation

Total Dissipation at $T_A = 25^\circ\text{C}$	100 mW
Derate Linearly from 25°C	1.33 mW/°C

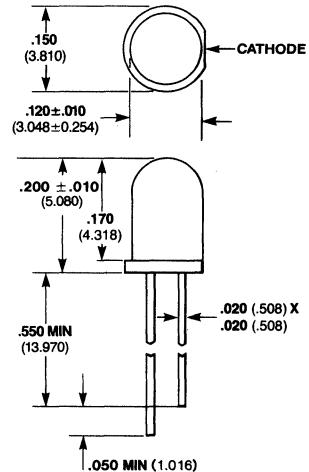
Maximum Voltage and Currents

V_R	Reverse Voltage	3.0 V
I_F	Forward dc Current	TIL209A 40 mA TIL212, TIL232 30 mA
I_{pk}	Peak Forward Current (1.0 μs pulse width)	1.0 A

Electrical and Radiant Characteristics $T_A = 25^\circ\text{C}$

Symbol	Characteristic	Min	Typ	Max	Units	Test Conditions
V_F	Forward Voltage					
	TIL209A		1.6	2.0	V	$I_F = 20\text{ mA}$
V_R	Reverse Voltage					
	TIL212, TIL232		2.3	3.2	V	$I_F = 25\text{ mA}$
I_O	Axial Luminous Intensity					
	TIL209A	3.0			V	$I_R = 100\ \mu\text{A}$
λ_{pk}	Peak Wavelength					
	TIL209A		665		nm	$I_F = 20\text{ mA}$
	TIL212		585		nm	$I_F = 20\text{ mA}$
	TIL232		565		nm	$I_F = 20\text{ mA}$

Package Outline



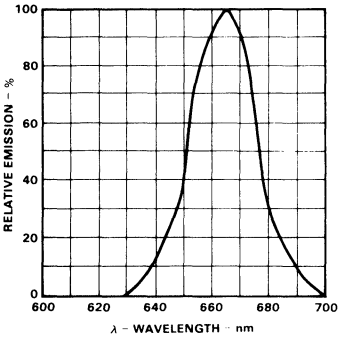
Notes

All dimensions in inches **bold** and millimeters (parentheses)
Tolerance unless specified = ± 0.015 (± 0.381)

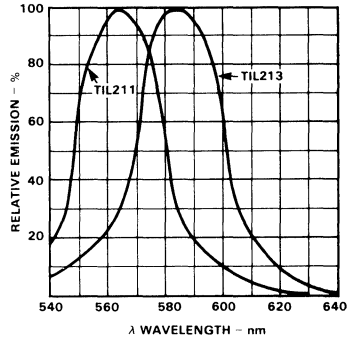
Typical Electrical Characteristic Curves

TIL209A TIL212 TIL232

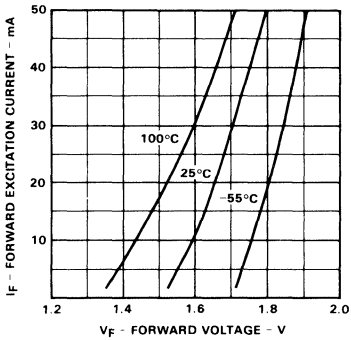
**Emission Spectrum
TIL209A**



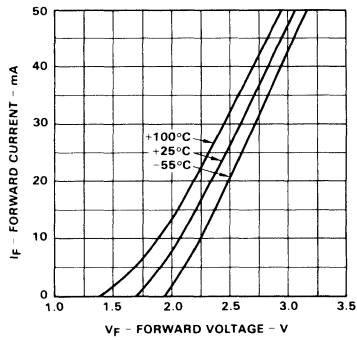
**Emission Spectrum
TIL212, TIL232**



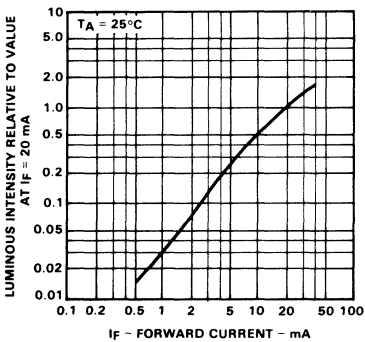
**Forward Current vs Forward Voltage
TIL209A**



**Forward Current vs Forward Voltage
TIL212, TIL232**



**Relative Luminous Intensity vs Forward Current
TIL209A**



**Relative Luminous Intensity vs Forward Current
TIL212, TIL232**

