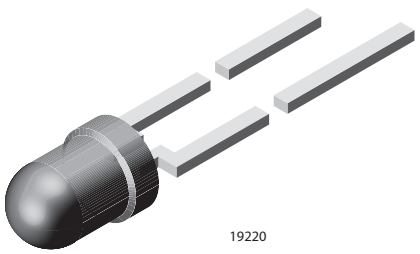
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High Intensity LED in Ø 3 mm Clear Package



FEATURES

- Exceptional brightness
- Very high intensity even at low drive currents
- Small viewing angle
- Low forward voltage
- 3 mm (T-1) untinted non-diffused package
- Deep red color
- Categorized for luminous intensity
- Outstanding material efficiency
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912

Pb-free

e8

RoHS COMPLIANT

HALOGEN FREE

GREEN (5-2008)

DESCRIPTION

This LED contains the double heterojunction (DH) GaAlAs on GaAs technology.

This deep red LED can be utilized over a wide range of drive current. It can be DC or pulse driven to achieve desired light output.

The device is available in a clear 3 mm package.

PRODUCT GROUP AND PACKAGE DATA

- Product group: LED
- Package: 3 mm
- Product series: standard
- Angle of half intensity: ± 16°

APPLICATIONS

- Bright ambient lighting conditions
- Battery powered equipment
- Indoor and outdoor information displays
- Portable equipment
- Telecommunication indicators
- General use

PARTS TABLE

PART	COLOR	LUMINOUS INTENSITY (mcd)			at I_F (mA)	WAVELENGTH (nm)			at I_F (mA)	FORWARD VOLTAGE (V)			at I_F (mA)	TECHNOLOGY
		MIN.	TYP.	MAX.		MIN.	TYP.	MAX.		MIN.	TYP.	MAX.		
TLDR4900	Red	63	200	-	20	-	648	-	20	-	1.8	2.2	20	GaAlAs on GaAs
TLDR4901	Red	63	-	200	20	-	648	-	20	-	1.8	2.2	20	GaAlAs on GaAs

ABSOLUTE MAXIMUM RATINGS (T_{amb} = 25 °C, unless otherwise specified)
TLDR490.

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Reverse voltage		V_R	6	V
DC forward current		I_F	50	mA
Surge forward current	$t_p \leq 10$ µs	I_{FSM}	1	A
Power dissipation	$T_{amb} \leq 60$ °C	P_V	100	mW
Junction temperature		T_j	100	°C
Operating temperature range		T_{amb}	- 40 to + 100	°C
Storage temperature range		T_{stg}	- 55 to + 100	°C
Soldering temperature	t ≤ 5 s, 2 mm from body	T_{sd}	260	°C
Thermal resistance junction/ambient		R_{thJA}	400	K/W

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OPTICAL AND ELECTRICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)
TLDR490., RED

PARAMETER	TEST CONDITION	PART	SYMBOL	MIN	TYP.	MAX	UNIT
Luminous intensity (1)	I_F = 20 mA	TLDR4900	I_V	63	200	-	mcd
		TLDR4901	I_V	63	-	200	mcd
Luminous intensity	I_F = 1 mA		I_V	-	8	-	mcd
Dominant wavelength	I_F = 20 mA		λ_d	-	648	-	nm
Peak wavelength	I_F = 20 mA		λ_P	-	650	-	nm
Spectral line half width	I_F = 20 mA		$\Delta\lambda$	-	20	-	nm
Angle of half intensity	I_F = 20 mA		φ	-	± 16	-	deg
Forward voltage	I_F = 20 mA		V_F	-	1.8	2.2	V
Reverse current	V_R = 6 V		I_R	-	-	10	µA
Junction capacitance	V_R = 0 V, f = 1 MHz		C_j	-	30	-	pF

Note

- In one packing unit $I_{Vminx.}/I_{Vmax.} \leq 0.5$.

LUMINOUS INTENSITY CLASSIFICATION

GROUP	LIGHT INTENSITY (mcd)	
STANDARD	MIN.	MAX.
V	63	125
W	100	200
X	130	260
180	Y	360
Z	240	480

Note

- Luminous intensity is tested at a current pulse duration of 25 ms. These type numbers represent the order groups which include only a few brightness groups. Only one group will be shipped on each reel (there will be no mixing of two groups on each reel). In order to ensure availability, single brightness groups are not be orderable.
  In a similar manner for colors where wavelength groups are measured and binned, single wavelength groups will be shipped on any one reel.
  In order to ensure availability, single wavelength groups are not be orderable.

TYPICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)

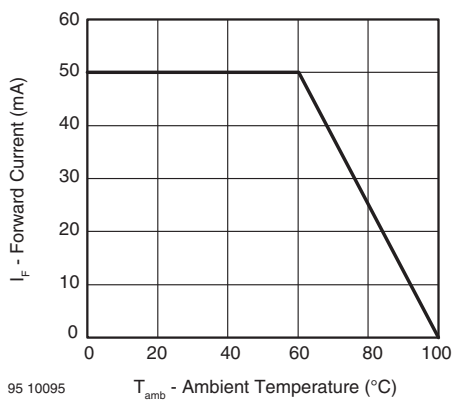


Fig. 1 - Forward Current vs. Ambient Temperature for InGaN

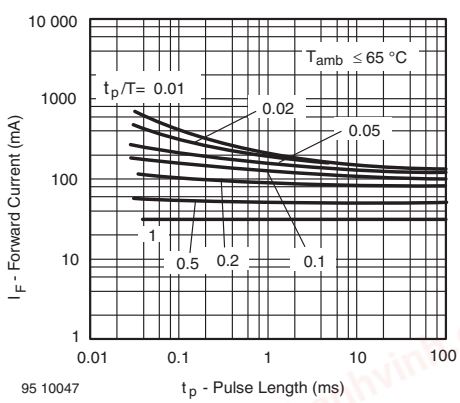


Fig. 2 - Forward Current vs. Pulse Length

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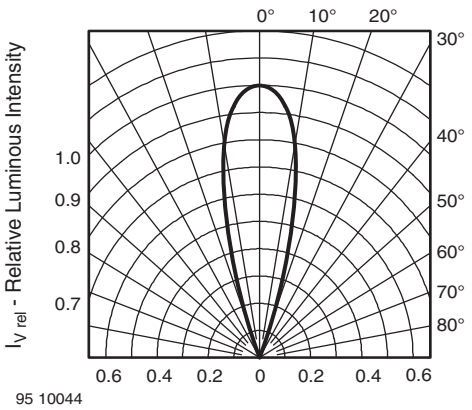


Fig. 3 - Relative Luminous Intensity vs. Angular Displacement

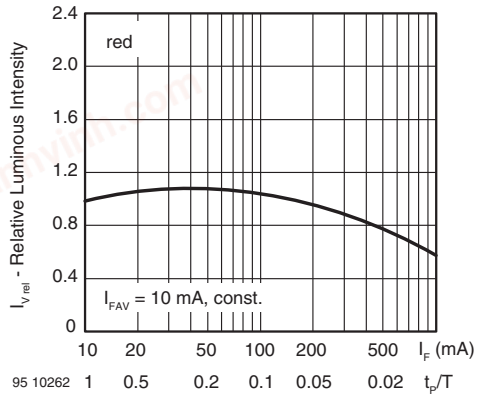


Fig. 6 - Relative Luminous Intensity vs. Forward Current/Duty Cycle

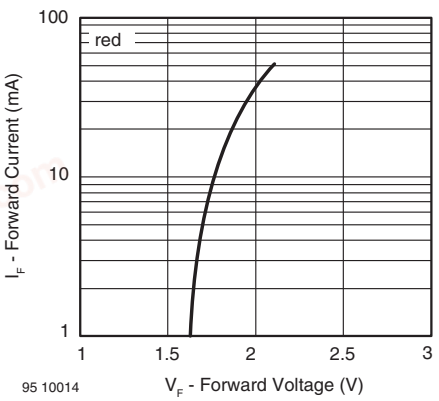


Fig. 4 - Forward Current vs. Forward Voltage

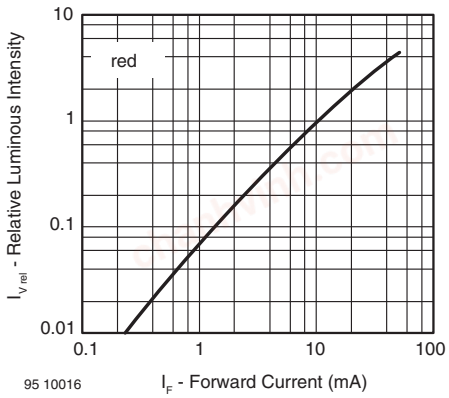


Fig. 7 - Relative Luminous Intensity vs. Forward Current

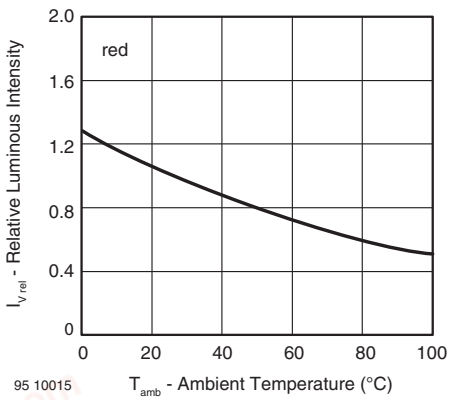


Fig. 5 - Relative Luminous Intensity vs. Ambient Temperature

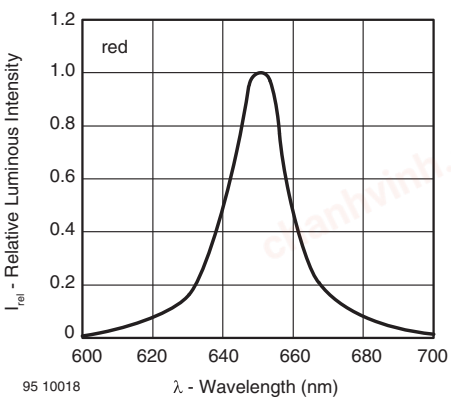


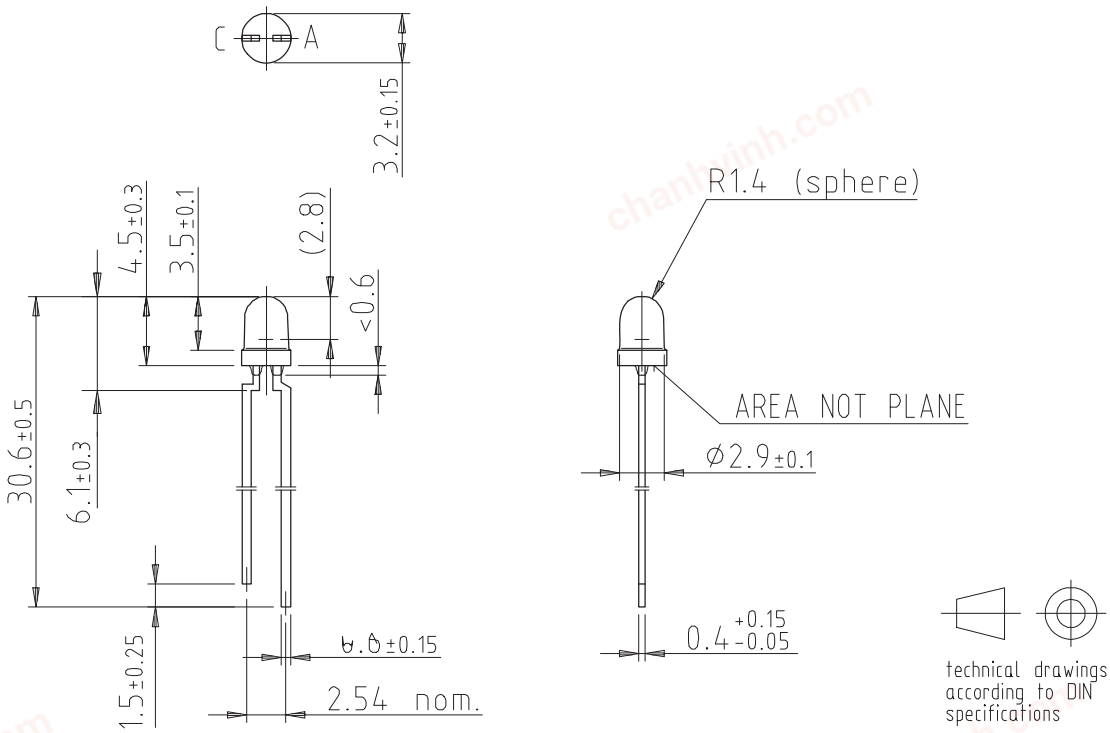
Fig. 8 - Relative Intensity vs. Wavelength

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PACKAGE DIMENSIONS in millimeters



95 10952

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