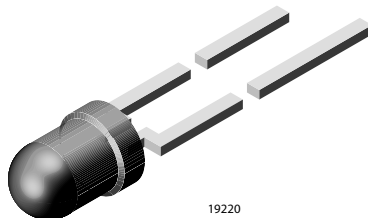


High Intensity LED in \varnothing 3 mm Clear Package



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
- Lead (Pb)-free device

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.

APPLICATIONS

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

PRODUCT GROUP AND PACKAGE DATA

- Product group: LED
- Package: 3 mm
- Product series: standard
- Angle of half intensity: $\pm 16^\circ$

PARTS TABLE		
PART	COLOR, LUMINOUS INTENSITY	TECHNOLOGY
TLDR4900	Red, $I_V > 63$ mcd	GaAlAs on GaAs
TLDR4901	Red, $I_V = (63 \text{ to } 200)$ mcd	GaAlAs on GaAs

ABSOLUTE MAXIMUM RATINGS ¹⁾ TLDR490.				
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Reverse voltage		V_R	6	V
DC Forward current		I_F	50	mA
Surge forward current	$t_p \leq 10 \mu\text{s}$	I_{FSM}	1	A
Power dissipation	$T_{amb} \leq 60^\circ\text{C}$	P_V	100	mW
Junction temperature		T_j	100	$^\circ\text{C}$
Operating temperature range		T_{amb}	- 40 to + 100	$^\circ\text{C}$
Storage temperature range		T_{stg}	- 55 to + 100	$^\circ\text{C}$
Soldering temperature	$t \leq 5$ s, 2 mm from body	T_{sd}	260	$^\circ\text{C}$
Thermal resistance junction/ambient		R_{thJA}	400	K/W

Note:

¹⁾ $T_{amb} = 25^\circ\text{C}$ unless otherwise specified

OPTICAL AND ELECTRICAL CHARACTERISTICS ¹⁾ TLDR490., RED							
PARAMETER	TEST CONDITION	PART	SYMBOL	MIN	TYP.	MAX	UNIT
Luminous intensity ²⁾	$I_F = 20 \text{ mA}$	TLDR4900	I_V	63	200		mcd
		TLDR4901	I_V	63		200	mcd
Luminous intensity	$I_F = 1 \text{ mA}$		I_V		8		mcd
Dominant wavelength	$I_F = 20 \text{ mA}$		λ_d		648		nm
Peak wavelength	$I_F = 20 \text{ mA}$		λ_p		650		nm
Spectral line half width	$I_F = 20 \text{ mA}$		$\Delta\lambda$		20		nm
Angle of half intensity	$I_F = 20 \text{ mA}$		φ		± 16		deg
Forward voltage	$I_F = 20 \text{ mA}$		V_F		1.8	2.2	V
Reverse current	$V_R = 6 \text{ V}$		I_R			10	μA
Junction capacitance	$V_R = 0, f = 1 \text{ MHz}$		C_j		30		pF

Note:

1) $T_{amb} = 25 \text{ }^\circ\text{C}$ unless otherwise specified

2) in one packing unit $I_{Vminx}/I_{Vmax} \leq 0.5$

TYPICAL CHARACTERISTICS

$T_{amb} = 25 \text{ }^\circ\text{C}$, unless otherwise specified

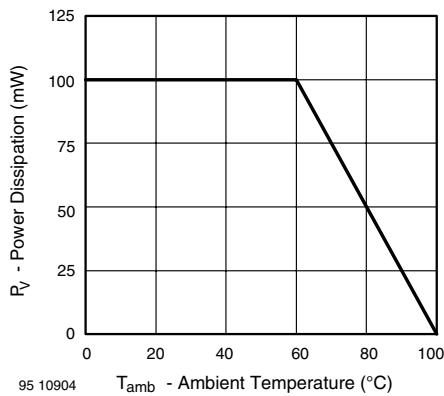


Figure 1. Power Dissipation vs. Ambient Temperature

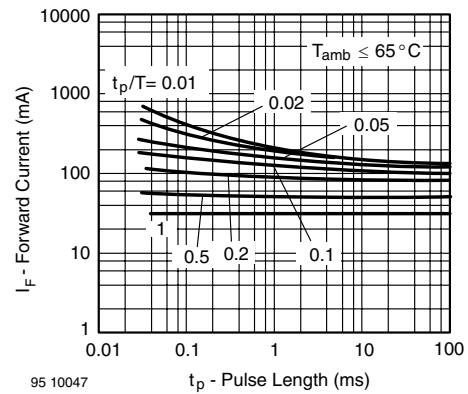


Figure 3. Forward Current vs. Pulse Length

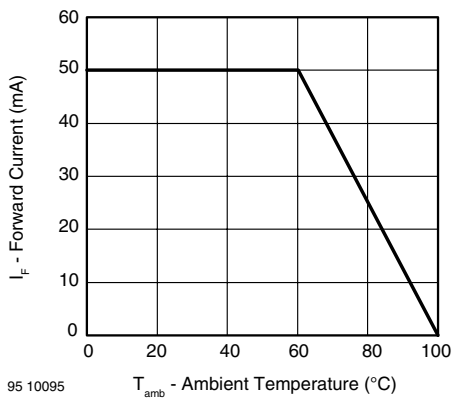


Figure 2. Forward Current vs. Ambient Temperature for InGaN

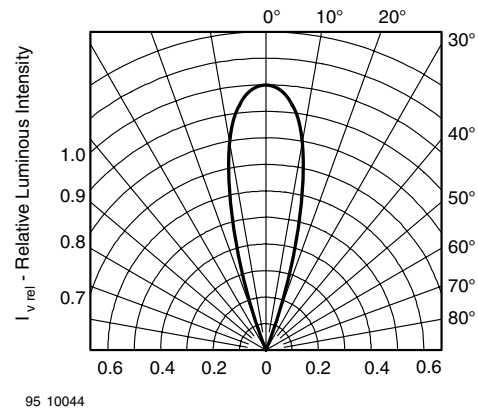
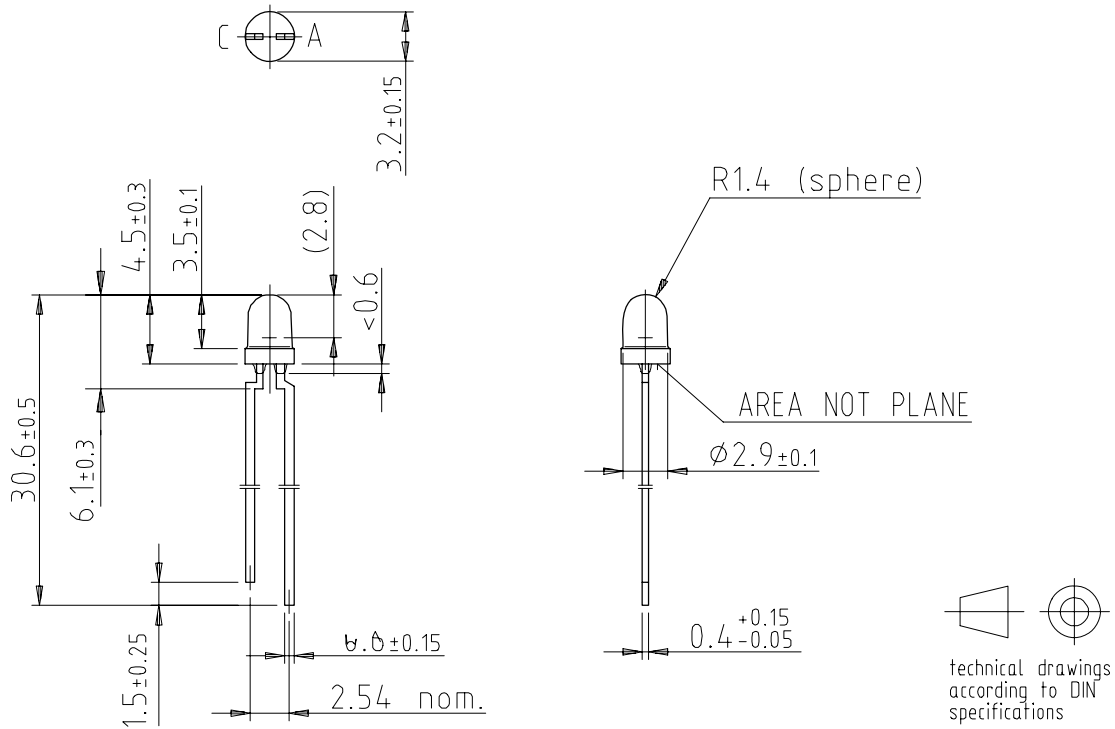


Figure 4. Rel. Luminous Intensity vs. Angular Displacement

PACKAGE DIMENSIONS in millimeters



95 10952