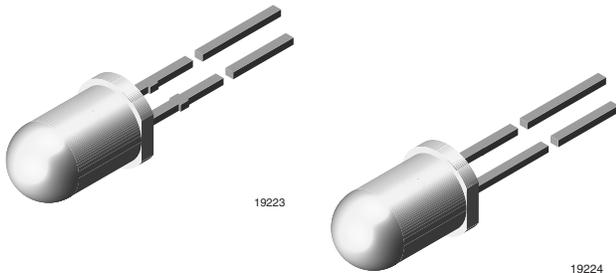


## High Intensity LED, $\varnothing$ 5 mm Tinted Diffused



### 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 tinted diffused 5 mm package with a wide radiation angle.

### PRODUCT GROUP AND PACKAGE DATA

- Product group: LED
- Package: 5 mm
- Product series: standard
- Angle of half intensity:  $\pm 30^\circ$

### FEATURES

- Exceptional brightness
- Wide viewing angle
- Low forward voltage
- 5 mm (T-1 $\frac{3}{4}$ " ) tinted diffused package
- Deep red color
- Very high intensity even at low drive currents
- Categorized for luminous intensity
- Outstanding material efficiency
- Lead (Pb)-free device
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC



### 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	TECHNOLOGY
TLDR5400/6400	Red, $I_V \geq 35$ mcd	GaAlAs on GaAs

### ABSOLUTE MAXIMUM RATINGS<sup>1)</sup> TLDR5400/TLDR6400

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Reverse voltage <sup>2)</sup>		$V_R$	6	V
DC Forward current		$I_F$	50	mA
Surge forward current	$t_p \leq 10 \mu s$	$I_{FSM}$	1	A
Power dissipation		$P_V$	100	mW
Junction temperature		$T_j$	100	$^\circ C$
Operating temperature range		$T_{amb}$	- 40 to + 100	$^\circ C$
Storage temperature range		$T_{stg}$	- 55 to + 100	$^\circ C$
Soldering temperature	$t \leq 5$ s, 2 mm from body	$T_{sd}$	260	$^\circ C$
Thermal resistance junction/ ambient		$R_{thJA}$	350	K/W

Note:

<sup>1)</sup>  $T_{amb} = 25 \text{ }^\circ C$ , unless otherwise specified

<sup>2)</sup> Driving the LED in reverse direction is suitable for a short term application

OPTICAL AND ELECTRICAL CHARACTERISTICS <sup>1)</sup> TLDR5400/TLDR6400, RED						
PARAMETER	TEST CONDITION	SYMBOL	MIN	TYP.	MAX	UNIT
Luminous intensity	$I_F = 20 \text{ mA}$	$I_V$	35	70		mcd
Luminous intensity	$I_F = 1 \text{ mA}$	$I_V$		3		mcd
Dominant wavelength	$I_F = 20 \text{ mA}$	$\lambda_d$		648		nm
Peak wavelength	$I_F = 20 \text{ mA}$	$\lambda_p$		650		nm
Spectral line half width		$\Delta\lambda$		20		nm
Angle of half intensity	$I_F = 20 \text{ mA}$	$\varphi$		$\pm 30$		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	$\mu\text{A}$
Junction capacitance	$V_R = 0, f = 1 \text{ MHz}$	$C_j$		30		pF

Note:

<sup>1)</sup>  $T_{amb} = 25 \text{ }^\circ\text{C}$ , unless otherwise specified

LUMINOUS INTENSITY CLASSIFICATION		
GROUP STANDARD	LUMINOUS INTENSITY (MCD)	
	MIN	MAX
Tb	35	50
U	40	80
V	63	125
W	100	200
X	130	260
Y	180	360
Z	240	480
AA	320	640
BB	430	860

Note:

Luminous intensity is tested at a current pulse duration of 25 ms and an accuracy of  $\pm 11 \%$ .

The above type numbers represent the order groups which include only a few brightness groups. Only one group will be shipped on each bag (there will be no mixing of two groups in each bag).

In order to ensure availability, single brightness groups will 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 bag.

In order to ensure availability, single wavelength groups will not be orderable.

## TYPICAL CHARACTERISTICS

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

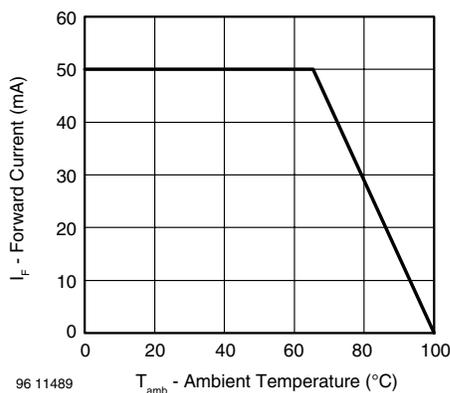


Figure 1. Forward Current vs. Ambient Temperature for AlInGaP

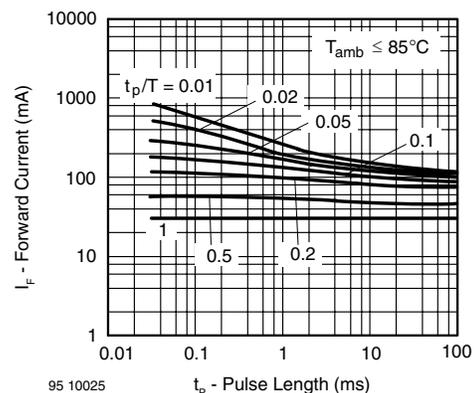


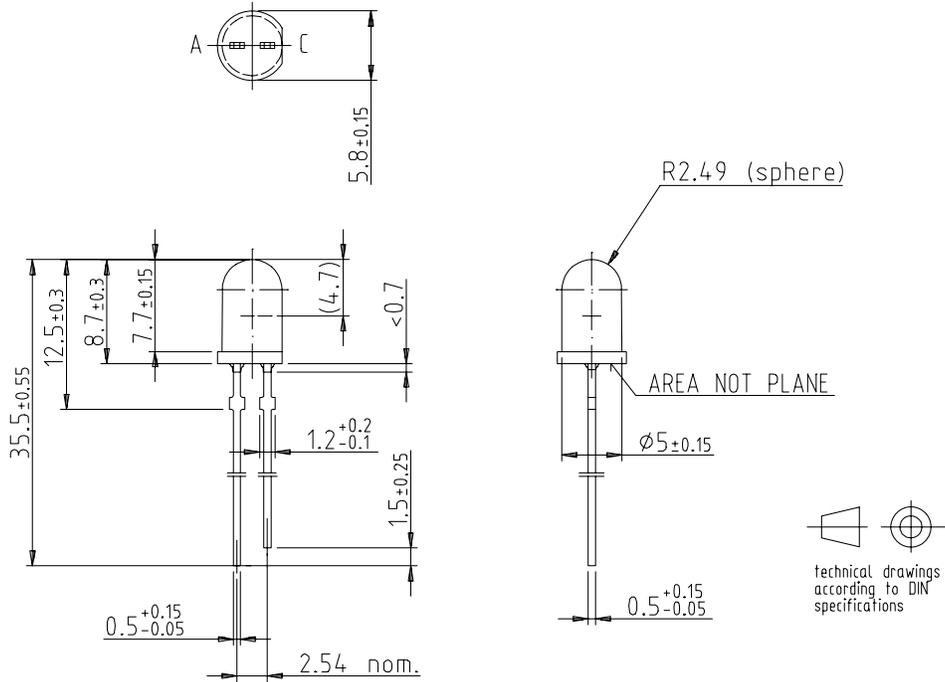
Figure 2. Forward Current vs. Pulse Length

# TLDR5400/TLDR6400

Vishay Semiconductors

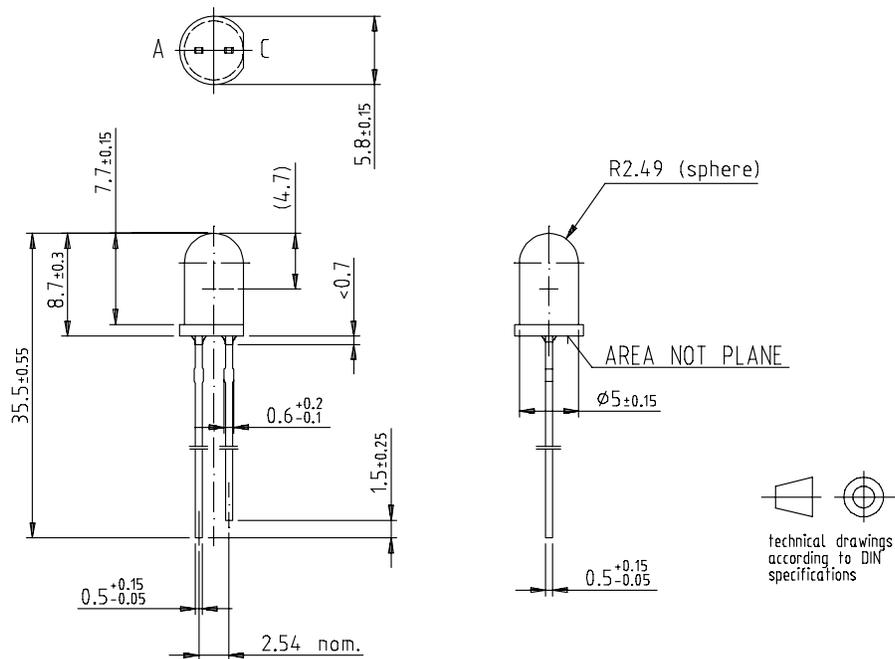


## PACKAGE DIMENSIONS in millimeters TLDR5400



95 10916

## PACKAGE DIMENSIONS in millimeters TLDR6400



95 10917