

## TLDR5400

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

Color	Type	Technology	Angle of Half Intensity $\pm\varphi$
Double hetero red	TLDR5400	GaAlAs on GaAs	30°

#### Description

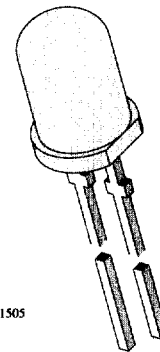
This LED contains the double heterojunction (DH) GaAlAs on GaAs technology.

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.

#### Features

- Exceptional brightness
- Very high intensity even at low drive currents
- Wide viewing angle
- Low forward voltage
- 5 mm (T-1 $\frac{1}{4}$ ) tinted diffused package
- Deep red color
- Categorized for luminous intensity
- Outstanding material efficiency



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#### Applications

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

### Absolute Maximum Ratings

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

Double hetero red (TLDR5400)

Parameter	Test Conditions	Type	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	$T_{amb} \leq 65^{\circ}\text{C}$		$P_V$	100	mW
Junction temperature			$T_j$	100	$^{\circ}\text{C}$
Operating temperature range			$T_{amb}$	-20 to +100	$^{\circ}\text{C}$
Storage temperature range			$T_{stg}$	-55 to +100	$^{\circ}\text{C}$
Soldering temperature	$t \leq 5 \text{ s}$ , 2 mm from body		$T_{sd}$	260	$^{\circ}\text{C}$
Thermal resistance junction/ambient			$R_{thJA}$	350	K/W

### Optical and Electrical Characteristics

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

Double hetero red (TLDR5400)

Parameter	Test Conditions	Type	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	$I_F = 20 \text{ mA}$		$\phi$		$\pm 30$		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

## Typical Characteristics ( $T_{amb} = 25^{\circ}\text{C}$ , unless otherwise specified)

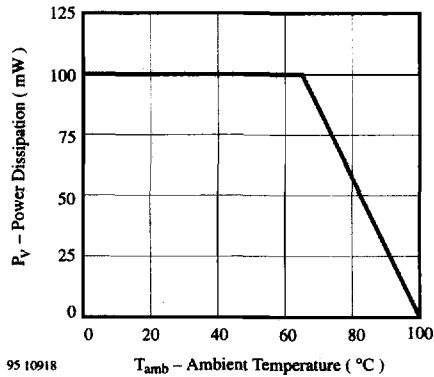


Figure 1. Power Dissipation vs. Ambient Temperature

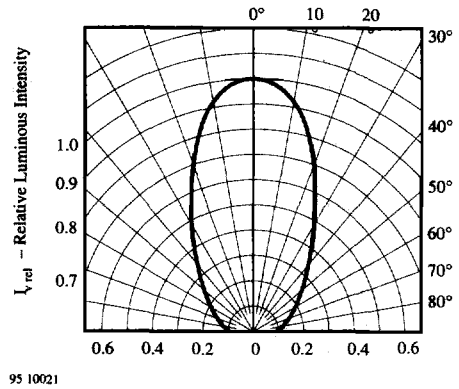


Figure 4. Rel. Luminous Intensity vs. Angular Displacement

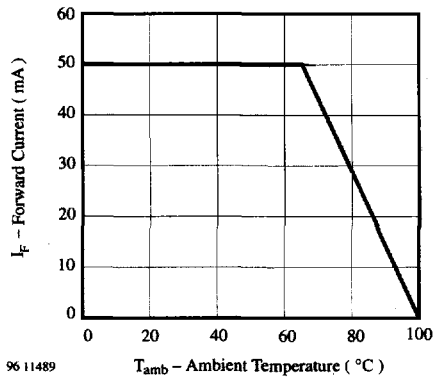


Figure 2. Forward Current vs. Ambient Temperature

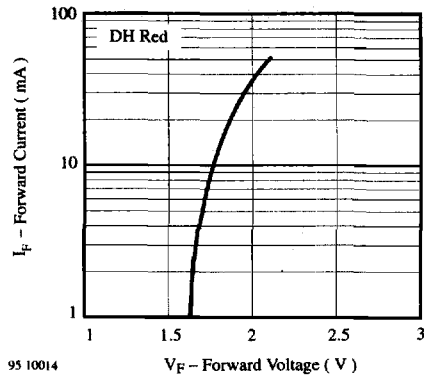


Figure 5. Forward Current vs. Forward Voltage

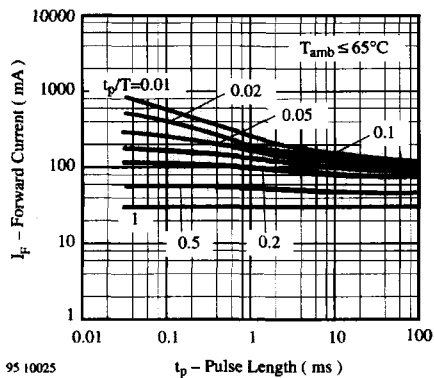


Figure 3. Forward Current vs. Pulse Length

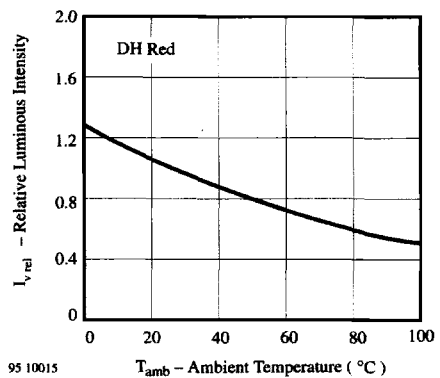


Figure 6. Rel. Luminous Intensity vs. Ambient Temperature

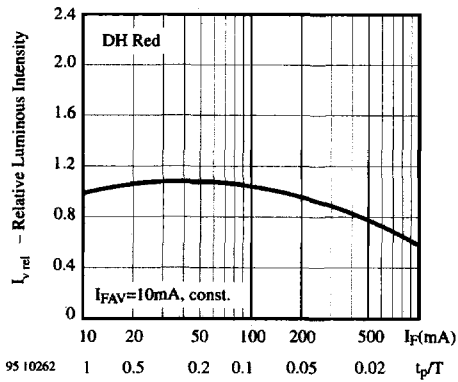


Figure 7. Rel. Lumin. Intensity vs. Forw. Current/Duty Cycle

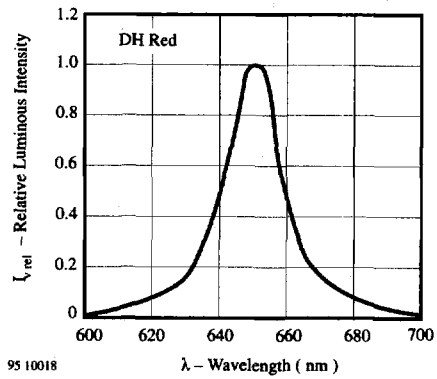


Figure 9. Relative Luminous Intensity vs. Wavelength

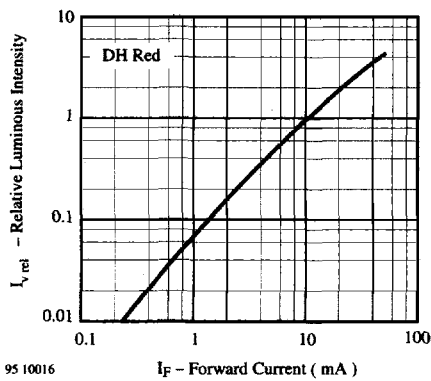


Figure 8. Relative Luminous Intensity vs. Forward Current

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# TEMIC

TELEFUNKEN Semiconductors

## Dimensions in mm

