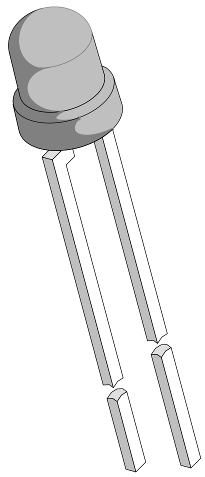
High Intensity LED, ø 3 mm Tinted Diffused

Color	Type	Technology	Angle of Half Intensity ±φ
Double hetero red	TLDR4400	GaAlAs on GaAs	40°

Description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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 3 mm tinted diffused package.

Features

- Exceptional brightness
- Very high intensity even at low drive currents
- Wide viewing angle
- Low forward voltage
- 3 mm (T–1) tinted diffused package
- Deep red color
- Categorized for luminous intensity
- Outstanding material efficiency

Applications

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

TLDR4400

Absolute Maximum Ratings

T_{amb} = 25°C, unless otherwise specified

Double hetero red (TLDR4400)

Parameter	Test Conditions	Type	Symbol	Value	Unit
Reverse voltage			V_R	6	V
DC forward current	$T_{amb} \le 60^\circ C$		I_F	50	mA
Surge forward current	$t_p \le 10\ \mu s$		I_{FSM}	1	A
Power dissipation	$T_{amb} \le 60^\circ C$		P_V	100	mW
Junction temperature			T_j	100	˚C
Operating temperature range			T_{amb}	–20 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

Optical and Electrical Characteristics

T_{amb} = 25°C, unless otherwise specified

Double hetero red (TLDR4400)

Parameter	Test Conditions	Type	Symbol	Min	Typ	Max	Unit
Luminous intensity	I_F = 20 mA		I_V	25	45		mcd
Luminous intensity	I_F = 1 mA		I_V		2		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		±40		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, f = 1 MHz		C_j		30		pF

Typical Characteristics (T$_{amb}$ = 25°C, unless otherwise specified)

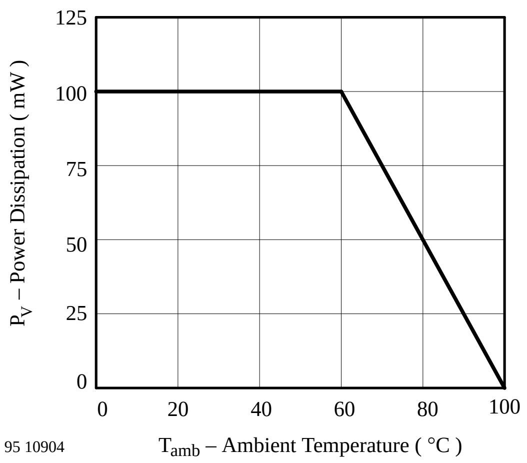


Figure 1. Power Dissipation vs. Ambient Temperature

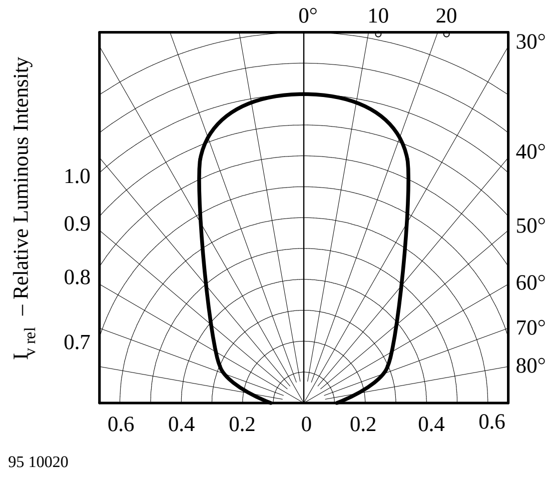


Figure 4. Rel. Luminous Intensity vs. Angular Displacement

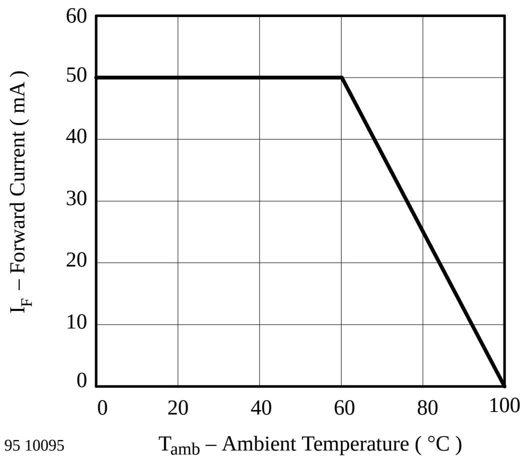


Figure 2. Forward Current vs. Ambient Temperature

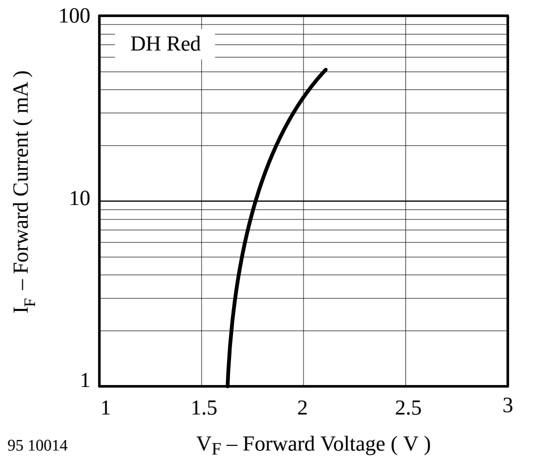


Figure 5. Forward Current vs. Forward Voltage

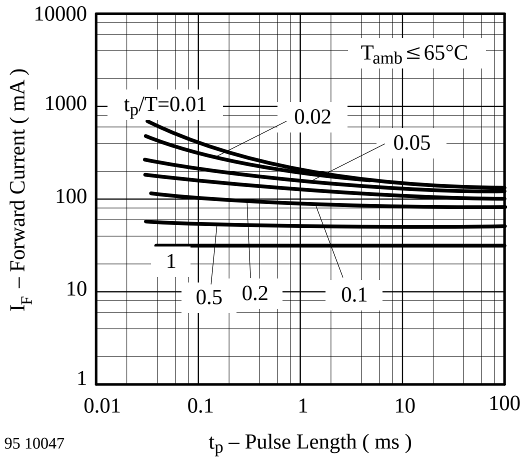


Figure 3. Forward Current vs. Pulse Length

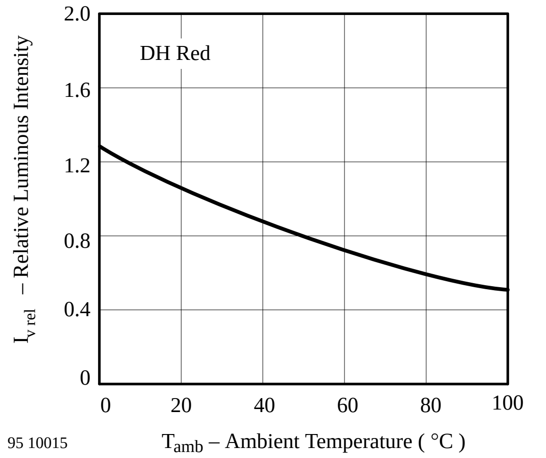


Figure 6. Rel. Luminous Intensity vs. Ambient Temperature

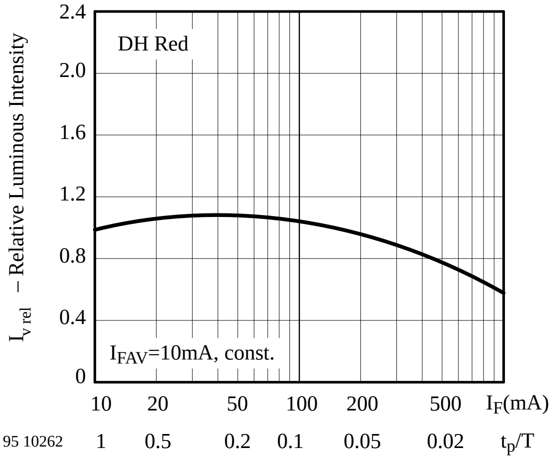


Figure 7. Rel. Lumin. Intensity vs. Forw. Current/Duty Cycle

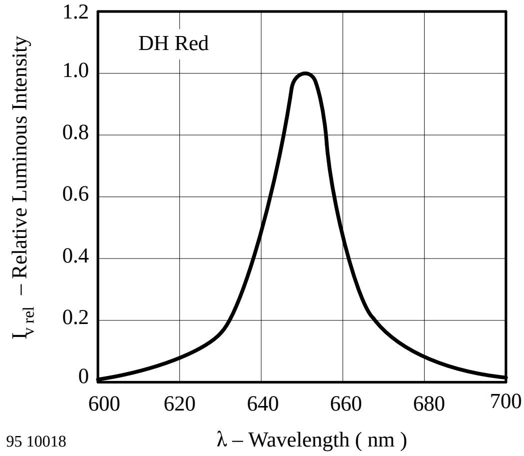


Figure 9. Relative Luminous Intensity vs. Wavelength

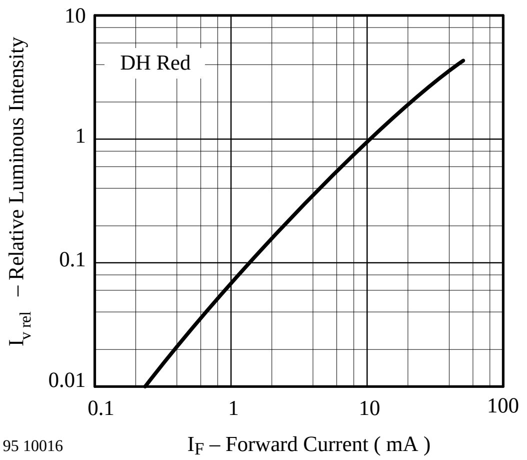
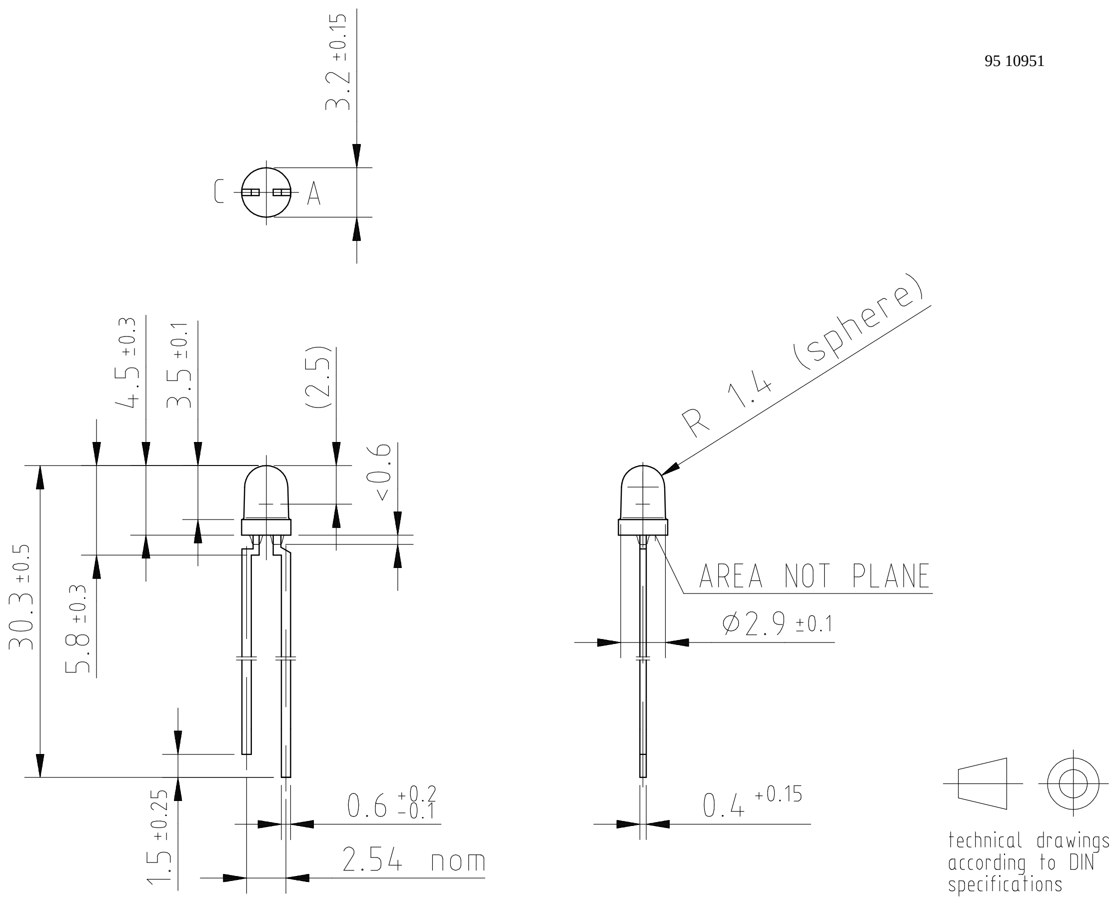


Figure 8. Relative Luminous Intensity vs. Forward Current

Dimensions in mm



Ozone Depleting Substances Policy Statement

It is the policy of **TEMIC TELEFUNKEN microelectronic GmbH** to

1. Meet all present and future national and international statutory requirements.
2. Regularly and continuously improve the performance of our products, processes, distribution and operating systems with respect to their impact on the health and safety of our employees and the public, as well as their impact on the environment.

It is particular concern to control or eliminate releases of those substances into the atmosphere which are known as ozone depleting substances (ODSs).

The Montreal Protocol (1987) and its London Amendments (1990) intend to severely restrict the use of ODSs and forbid their use within the next ten years. Various national and international initiatives are pressing for an earlier ban on these substances.

TEMIC TELEFUNKEN microelectronic GmbH semiconductor division has been able to use its policy of continuous improvements to eliminate the use of ODSs listed in the following documents.

1. Annex A, B and list of transitional substances of the Montreal Protocol and the London Amendments respectively
2. Class I and II ozone depleting substances in the Clean Air Act Amendments of 1990 by the Environmental Protection Agency (EPA) in the USA
3. Council Decision 88/540/EEC and 91/690/EEC Annex A, B and C (transitional substances) respectively.

TEMIC can certify that our semiconductors are not manufactured with ozone depleting substances and do not contain such substances.

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