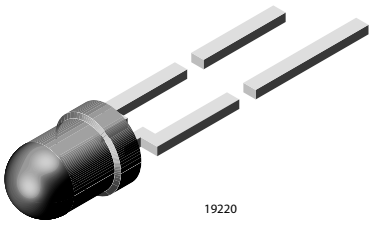
High Intensity LED, ∅ 3 mm Tinted Diffused



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
- 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 3 mm tinted diffused 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: ± 40°

PARTS TABLE

PART	COLOR, LUMINOUS INTENSITY	TECHNOLOGY
TLDR4400	Red, I_V > 25 mcd	GaAlAs on GaAs
TLDR4401	Red, I_V = (25 to 50) mcd	GaAlAs on GaAs

ABSOLUTE MAXIMUM RATINGS[1] TLDR440.

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Reverse voltage		V_R	6	V
DC Forward current	$T_{amb} \leq 60$ °C	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

Note:
[1] T_{amb} = 25 °C unless otherwise specified

OPTICAL AND ELECTRICAL CHARACTERISTICS[1] TLDR440., RED							
PARAMETER	**TEST CONDITION**	**PART**	**SYMBOL**	**MIN**	**TYP.**	**MAX**	**UNIT**
Luminous intensity [2]	I_F = 20 mA	TLDR4400	I_V	25	45		mcd
		TLDR4401	I_V	25		50	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

Note:
[1] T_{amb} = 25 °C, unless otherwise specified
[2] In one Packing Unit $I_{Vmin.}/I_{Vmax.} \leq 0.5$

TYPICAL CHARACTERISTICS

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

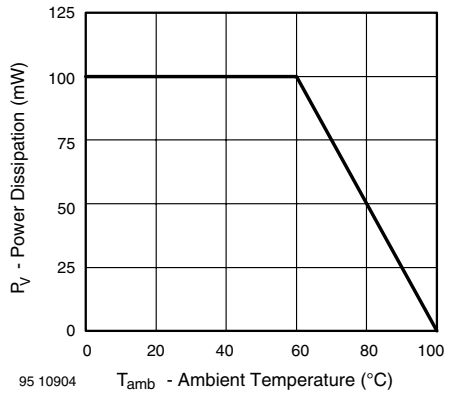


Figure 1. Power Dissipation vs. Ambient Temperature

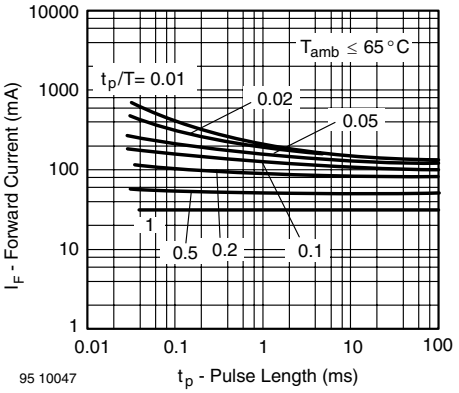


Figure 3. Forward Current vs. Pulse Length

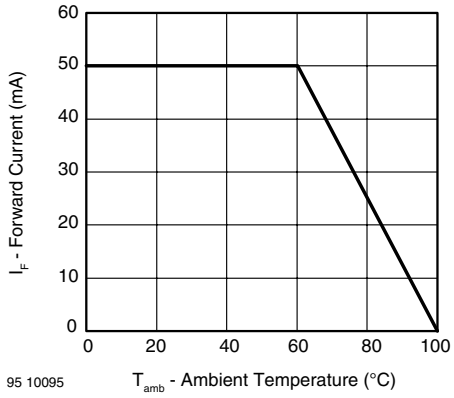


Figure 2. Forward Current vs. Ambient Temperature for InGaN

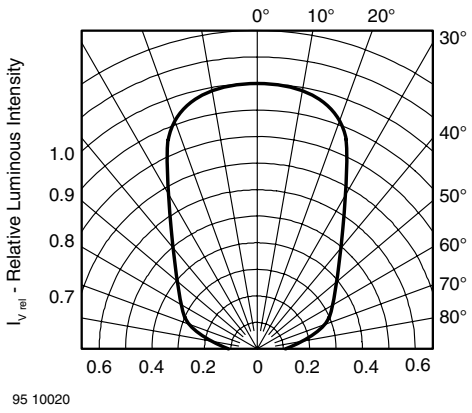
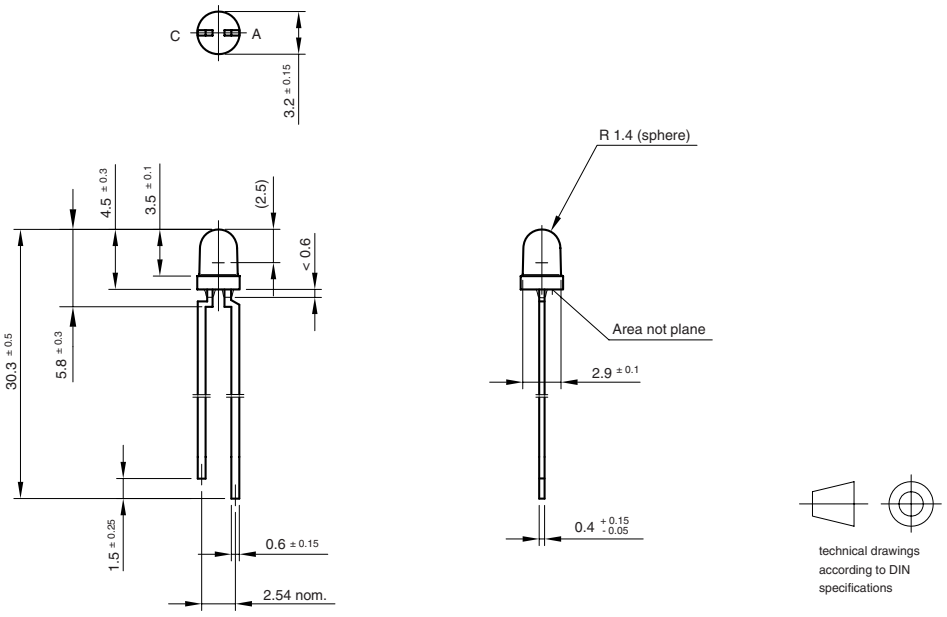


Figure 4. Rel. Luminous Intensity vs. Angular Displacement

PACKAGE DIMENSIONS in millimeters



Drawing-No.: 6.544-5264.01-4
Issue: 2; 23.04.98
95 10951