

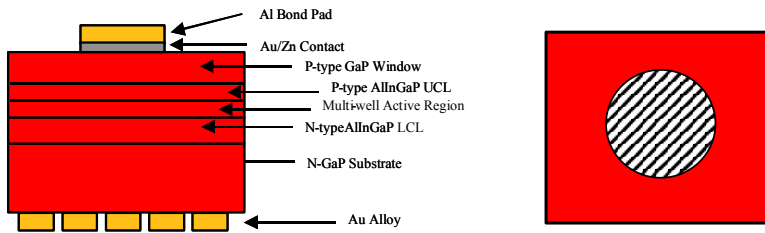
HWFR-B310 HWFR-B410 HWFR-B510

# Lumileds P3 Series TS AllnGaP Chips

Technical Data DS31

P3 Series transparent substrate AllnGaP chips deliver high flux performance.

## Outline Drawings



## Optical Characteristics at T=25°C [See notes 1, 2, and 3]

PART NUMBER	COLOR	DOMINANT WAVELENGTH @5mA (λD, nm)			INTENSITY @20mA (Iv, mcd)		FLUX @20mA (lm/A)
		MIN.	TYP.	MAX.	MIN.	MAX.	TYP.
HWFR-B310 #101	AMBER	584	-	595	70	90	-
HWFR-B310 #102	AMBER	584	-	595	90	-	-
HWFR-B310 #112	AMBER	584	590.5	595	70, 60%MIN	>90	55
HWFR-B410 #102	RED/ORANGE	612	-	625	100	-	-
HWFR-B510 #101	RED	624	-	635	70	100	-
HWFR-B510 #102	RED	624	-	635	100	-	-
HWFR-B510 #112	RED	624	629	635	70, 60%MIN	>100	70

## Electrical Characteristics at T=25°C [See notes 1 and 3]

PART NUMBER	COLOR	REVERSE VOLTAGE @ 100μA (VBR, V)	FORWARD VOLTAGE @20mA (VF, V)		
		MIN	MIN.	TYP.	MAX.
HWFR-B310	AMBER	-6.0	2.0	2.35	2.6
HWFR-B410	RED/ORANGE	-6.0	2.0	2.25	2.6
HWFR-B510	RED	-6.0	2.0	2.25	2.6

## Visual Inspection and Testing [See note 1]

VISUAL INSPECTION	100%
Vf & Vr TESTING	100%
IV TESTING	SAMPLE
LAMBDA TESTING	SAMPLE

## Nominal Mechanical Specifications

CHIP SIZE (MILS)	8.6 X 8.6
CHIP HEIGHT (MILS)	10.5 +/- 1.5 MILS
JUNCTION AREA (SQ. MILS)	74
TOP METAL	AL/AU ZN
BACK METAL	AU/GE
CHIP PRESENTATION [SEE NOTE 4]	

## Benefits

- Fewer LEDs Required
- Lowers Lighting System Cost

## Features

- High Luminous Flux
- Higher Forward Current Operation Capability

## Typical Applications

- Signs/Signals
- Machine Vision
- Automotive Lighting
- Illumination

## Notes:

1. Iv and lambda values are based on a 21 die sample. Vf, and Vr are 100% tested.
2. Flux measurements were made using 5mm LED lamp packages encapsulated with epoxy and are for information only.
3. Typical values given are the average values expected and are for information only.
4. Chips are mounted on 6 inch diameter photon rings utilizing 4 mil thick tape.

## Company Information

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Lumileds is a world-class supplier of Light Emitting Diodes (LEDs) producing billions of LEDs annually. Lumileds is a fully integrated supplier, producing core LED material in all three base colors (Red, Green, Blue) and White. Lumileds has R&D development centers in San Jose, California and Best, The Netherlands. Production capabilities in San Jose, California and Malaysia.

Lumileds is pioneering the high-flux LED technology and bridging the gap between solid-state LED technology and the lighting world. Lumileds is absolutely dedicated to bringing the best and brightest LED technology to enable new applications and markets in the Lighting world.

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