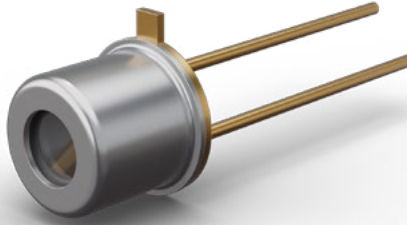


HP155G+FAC SERIES

Laser Diodes



HIGH PERFORMANCE 1550 nm PULSED LASER DIODES WITH FAST AXIS COLLIMATORS

The HP1550G+FAC series is engineered to provide a high-performance and high-quality 1550nm Pulsed Laser Diode (PLD) with Fast Axis Collimators. It features an advanced InP chip design, that provides exceptional efficiency and output powers, and a high precision lens for low beam divergence.

The HP155G+FAC series is available with a choice of emitting source sizes and lens for fast axis collimation.

FEATURES

- / Fast axis collimation 15/10/5 mrad options
- / Up to 28 W peak power
- / Hermetic package
- / Extremely robust
- / High reliability

APPLICATIONS

- / Eye safe range finding
- / Surveying equipment
- / »Friend or Foe« identification
- / Laser radar
- / Security barrier

SPECIFICATIONS

Optical Characteristics at $t_{RT} = 21\text{ °C}$, I_{FM}

	Min	Typ	Max
Wavelength of peak radiant intensity λ [nm]	1530	1550	1570
Spectral bandwidth $\Delta\lambda$ at 50 % intensity points at I_{FM} [nm]		22	
Wavelength temperature coefficient [nm/°C]		0.45	
Divergence , w.r.t. junction plane			
Parallel $\parallel$ [°]		12	
Perpendicular $\perp$ with 275 μm EFL lens [mrad]		9.5	
Perpendicular $\perp$ with 590 μm EFL lens [mrad]		5.0	
Perpendicular $\perp$ with 150 μm EFL lens [mrad]		15	
Perpendicular $\perp$ with 750 μm EFL lens [mrad]		3.8	

Typical Product Characteristics

Typical characteristics at $t_{RT} = 21\text{ °C}$, $t_w = 100\text{ ns}$, $P_{rr} = 1.0\text{ kHz}$

Parameter	155G1S02SCX	155G1S04SCX	155G1S07SCX	155G1S14SCX
P_O at I_{FM} (typ.) [W]	7	11	17	30
Emitting area [μm]	50 x 1	100 x 1	180 x 1	355 x 1
Peak forward current I_{FM}^* [A]	30	30	46	80
I_{th} (typical) [A]	0.45	0.55	0.7	1.0
Forward voltage V_F at I_{FM} [V]	7.5	6.0	7.0	10

* I_{FM} is the maximum peak current under any drive condition and is applicable to devices operated for short and intermittent duration such as in hand held range finders.

For applications that demand continuous use at maximum duty factor, we recommended I_{FM} at 50 % to ensure longevity. High temperature operation will reduce peak power and MTTF so for optimal performance under high stress conditions it is important to provide an adequate heat sink.

Absolute Maximum Ratings

Maximum Ratings	Limiting Values
Peak reverse voltage [V]	6
Pulse duration [ns]	150
Duty factor [%]	0.05
Storage temperature [°C]	-55 to +100
Operating temperature [°C]	-45 to +85
Lead soldering 5 seconds max. at [°C]	200

Note

High Temperature operation will reduce peak power and MTTF so for optimal performance it is important to provide an adequate heat sink.

Environmental

Hermeticity, < 108 cm³/s

Mechanical shock, 1ms 1500 g, MIL-STD-883F, Method 2002 4, Condition B

Thermal shock, -40° to +85 °C, JEDEC JESD22-A104C, Condition N

/ Germany and Other Countries LASER COMPONENTS Germany GmbH Tel +49 8142 2864 - 0 info@lasercomponents.com www.lasercomponents.com

/ France LASER COMPONENTS S.A.S. Tel +33 1 39 59 52 25 info@lasercomponents.fr www.lasercomponents.fr

/ United Kingdom LASER COMPONENTS (UK) Ltd. Tel +44 1245 491 499 info@lasercomponents.co.uk www.lasercomponents.co.uk

/ Nordic Countries LASER COMPONENTS Nordic AB Tel +46 31 703 71 73 info@lasercomponents.se www.lasercomponents.se

/ USA LASER COMPONENTS USA, Inc. Tel +1 603 821-7040 info@laser-components.com www.laser-components.com

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Laser Diodes

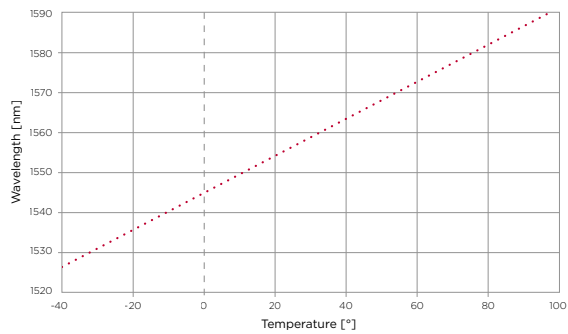


Figure 1: Typical Wavelength vs. Temperature

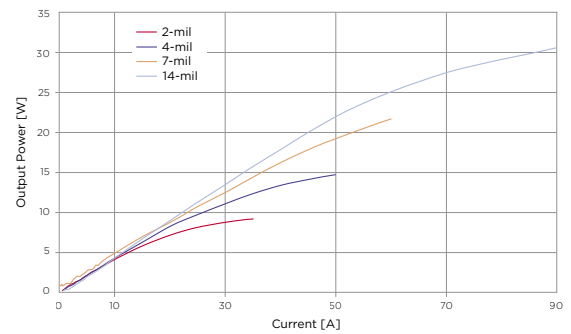


Figure 2: Typical Optical Output Power vs. Forward Current

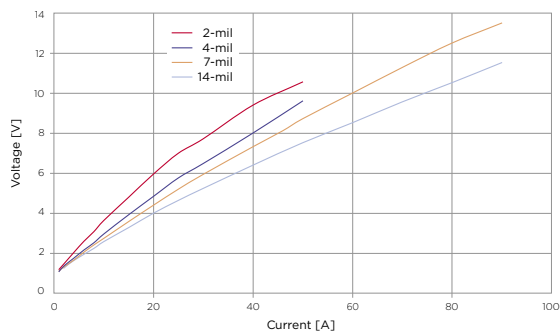


Figure 3: Typical Static Forward Voltage (V_F) vs. Peak Current

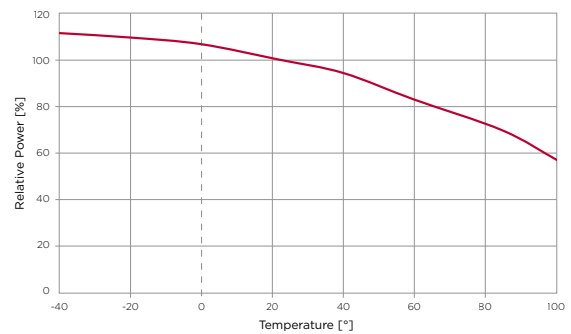


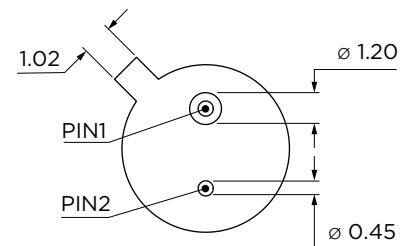
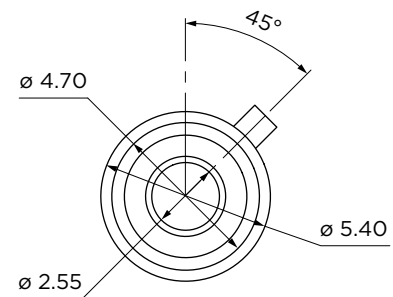
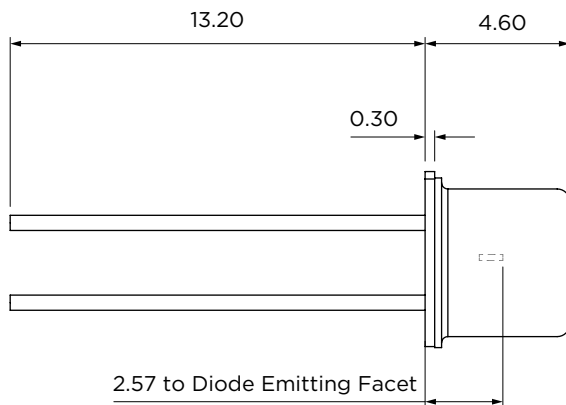
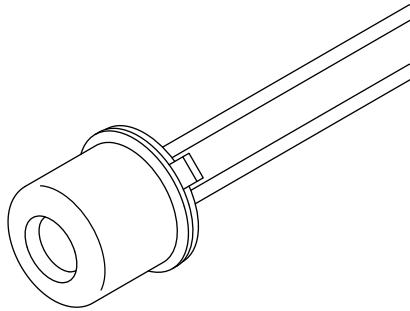
Figure 4: Typical Peak Optical Output Power vs. Temperature

/ Germany and Other Countries LASER COMPONENTS Germany GmbH Tel +49 8142 2864-0 info@lasercomponents.com www.lasercomponents.com
 / France LASER COMPONENTS S.A.S. Tel +33 1 39 59 52 25 info@lasercomponents.fr www.lasercomponents.fr
 / United Kingdom LASER COMPONENTS (UK) Ltd. Tel +44 1245 491 499 info@lasercomponents.co.uk www.lasercomponents.co.uk
 / Nordic Countries LASER COMPONENTS Nordic AB Tel +46 31 703 71 73 info@lasercomponents.se www.lasercomponents.se
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HP155G+FAC SERIES

Laser Diodes

TECHNICAL DRAWING



Package S + FAC

Pin out:

1. LD Anode (+)
2. LD Cathode (-)

Units: mm

Dimensions are for reference only

HP155G+FAC SERIES

Laser Diodes



ORDERING CODE

	Diode Configuration	Emitting Source Size	Package Style	Lens Configuration
HP155G	1S Single stack	XX 02 = 50 μm 04 = 100 μm 07 = 180 μm 14 = 355 μm	SC TO-18 + FAC	X A = 275 μm EFL lens, 9.5mrad typical B = 590 μm EFL lens, 5mrad typical C = 150 μm EFL lens, 15mrad typical D = 750 μm EFL lens, 3.8mrad typical

Example: HP155G1S04SCC

PRODUCT CHANGES AND LIABILITY

LASER COMPONENTS reserves the right to make changes to the product specifications and/or discontinue products without prior notice. While every effort has been made to ensure the accuracy and reliability of the information provided in this datasheet, LASER COMPONENTS accepts no liability for any errors, omissions, or the consequences of product use. It is the responsibility of the customer to ensure that the product is suitable for their specific application and to comply with all applicable laws and regulations.

ORDERING INFORMATION

Products can be ordered directly from LASER COMPONENTS or its representatives. For a complete listing of representatives, visit our website at www.lasercomponents.com

Custom designed products are available on request.

SAFETY AND HANDLING INFORMATION

Personal Hazard

Depending on the mode of operation, these devices emit highly concentrated non visible infrared light which can be hazardous to the human eye. Products which incorporate these devices have to follow the safety precautions given in IEC 60825-1 »Safety of laser products«.



Handling Precautions

Products are subject to the risks normally associated with sensitive electronic devices including static discharge, transients, and overload.



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