

100G-HS-PD

Photodiode for 75-110 GHz band



Features

- High frequency operation
- Low polarisation sensitivity
- High speed 1mm 'W' connector electrical interface
- Available packaged or bare chip

Applications

- mm-wave radio over fibre
- Instrumentation / test and measurement
- High speed clock recovery
- Broadband package for 100 Gbit/s under development

Description

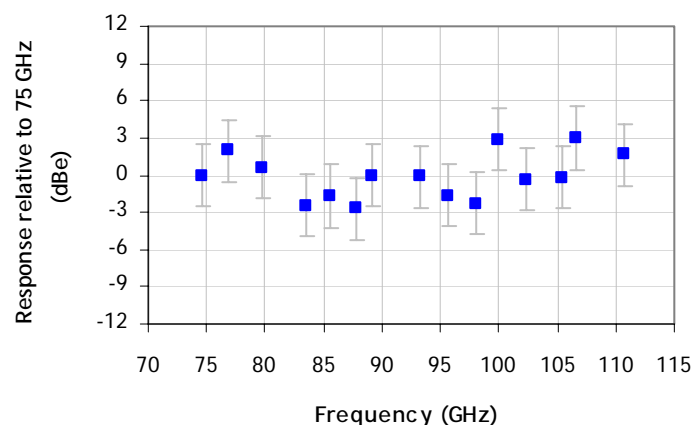
The 100G-HS-PD is a high speed photodiode designed for W band operation.

It comes in a fibre pigtailed module with a 1mm 'W' connector electrical interface. There is no internal load resistor in the module, which enables the output mm-wave power to be maximised. The module is suitable for use with an external bias T.

The edge coupled PIN photodiode design gives a good trade-off between high frequency operation and high responsivity, providing a useful device for laboratory applications.

The chip capacitance is ~ 30 fF at -2V giving a predicted $1/(2\pi RC)$ bandwidth > 100 GHz in the absence of package parasitics and carrier life-time effects.

Prototype packaged device frequency response
at -2 V bias and +10 dBm input optical power



Optical and electrical characteristics All specifications are at temperature = 20°C and 1550nm unless stated otherwise. P_{IN} = Input optical power V_{DC} = Bias voltage

Parameter	Test condition	Typ.	Unit
DC responsivity	$P_{IN} = 0\text{dBm}$, $V_{DC} = -2\text{V}$	0.3	A/W
Dark current	$V_{DC} = -2\text{V}$	0.4	μA
Polarisation dependence of responsivity	$P_{IN} = 0\text{dBm}$, $V_{DC} = -2\text{V}$	0.4	dB
Maximum operating frequency	$P_{IN} = +10\text{dBm}$, $V_{DC} \sim -2\text{V}$	110	GHz

Absolute maximum ratings

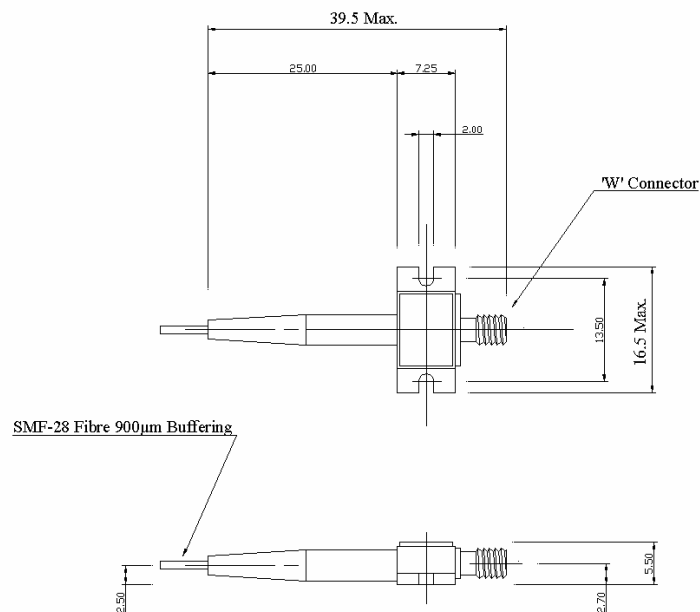
Item	Rating	Unit
Maximum DC Reverse Bias to centre pin	4	V
Maximum DC Forward Bias to centre pin	0.6	V
Maximum Input Optical Power	+11	dBm
Operating Temperature	15 - 50	°C
Storage temperature	10 - 70	°C
Fibre type	SMF-28 900µm tight buffer, >1m - PM fibre option available on request	

Ordering Information— Part Number 100G-HS-PIN

For Chip on carrier, or custom products please contact CIP Sales on +44 1473 663210 or e-mail sales@ciphotonics.com. For details of your local agent, visit www.ciphotonics.com

Wiring Diagram and Dimensions

All dimensions shown are in mm



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