BGO807

Low-cost optical receiver for optical nodes in CATV applications

An integrated optical receiver amplifier module for optical nodes in CATV applications, the BGO807 offers an optical node specification suited to fiber-to-building and medium-scale applications of up to 500 users.

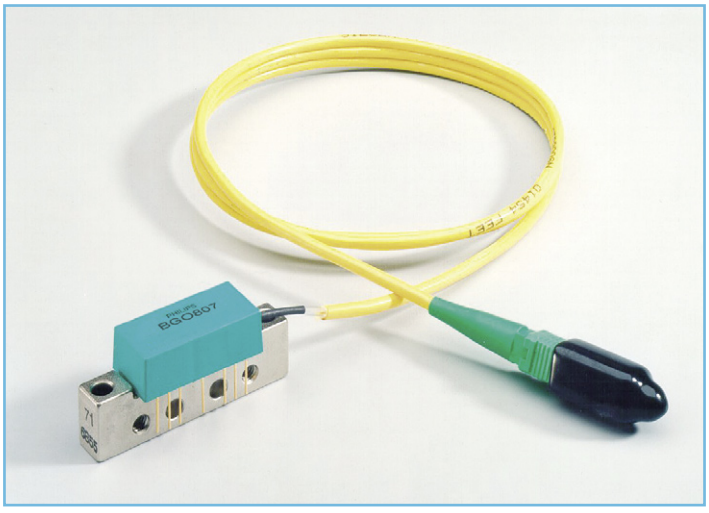
Semiconductors

In the CATV market, the optical node is moving closer to the home. This means that fewer line extenders follow the optical nodes allowing specifications, such as linearity, to be relaxed. In response, Philips has extended its CATV optical receiver range with a low-cost version ideal for fiber-to-building and medium-scale CATV applications – the BGO807. Together with the high-linearity BGO827 and BGO847, it forms a complete family supporting all application requirements at an optimal price.

The integration of the photo diode and amplifier in the BGO807 delivers optimal tuning performance. Moreover the amplifier's small size enables the use of higher capacitance photo diodes at a lower cost than possible with discrete designs. The BGO807 compares favorably with discrete solutions, offering a much smaller footprint and better overall performance.

Key benefits

- Hybrid amplifier offering excellent performance and consistency, tuned via optical input and electrical output
- Optimized for better flatness
- Hermetically sealed photo diode
- Low cost solution that delivers better performance than discrete solutions
- Three versions available: no connector, SC APC connector and FC APC connector



Key features

- Plug & play integrated solution
- Small size
- Short time-to-market
- Low total cost of ownership
- Built-in temperature compensation

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Parameters	BGO807	BGO827	BGO847
Responsivity [V / W] @ λ = 1300 nm	800	800	800
Flatness [dB]	1	1	1
Slope [dB]	0 – 2	0 – 2	0 – 2
S22 40 – 870 MHz [dB]	11	11	11
Current @ V_b = +24 V [mA]	175 – 205	175 – 205	175 – 205
V_{pin1} [V / mW]	0.75 – 1.00	0.75 – 1.00	0.75 – 1.00
d2_1: f_m = 446.50 MHz [dB]	-66	-68	-68
d2_2: f_m = 746.50 MHz [dB]	-61	-63	-63
d2_3: f_m = 854.50 MHz [dB]	-55	-57	-63
d3: f_m = 853.25 MHz [dB]	-71	-73	-73
Temperature compensated	yes	yes	yes
Optical wavelength [nm]	1290 – 1600	1290 – 1600	1290 – 1600
EIN 40 – 450 MHz [pA / √Hz]	7	7	7
EIN 450 – 750 MHz [pA / √Hz]	8	8	7
EIN 750 – 870 MHz [pA / √Hz]	8.5	8.5	8

Note: Noise data taken @ 900 V/W
Three laser test, each laser with a modulation index of 60%, P_{opt} = 1 mW
d2_1: f_m = 446.50 MHz, f_q = 97.25 MHz, f_r = 349.25 MHz
d2_2: f_m = 746.50 MHz, f_q = 97.25 MHz, f_r = 613.25 MHz
d2_3: f_m = 854.50 MHz, f_q = 97.25 MHz, f_r = 721.25 MHz
d3: f_m = 853.25 MHz, f_q = 133.25 MHz, f_q = 265.25 MHz, f_r = 721.25 MHz

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