

WBA3-4-06G28P22

An ultra wideband RF amplifier designed specifically for driving optical modulators, (e.g. those made from lithium niobate) in high speed optical communication system, optimised for 2.5 Gb/s.

The unit utilises Gallium Arsenide monolithic microwave integrated circuits (MMICS) with innovative circuit techniques to extend the bandwidth. A built-in power supply provides full conditioning giving a stand alone module operating from a single supply rail.

Key Features

- suitable for use with OC-48/STM-16 systems
- high output power and voltage: 8V peak-peak at 6 GHz into 50 ohms
- low gain ripple
- high reliability
- low overshoot
- low droop
- low jitter
- fast risetime
- conditioned power supply included

Options

Variable gain control - the output voltage level can be varied by 10 dB to dynamically adjust the amplitude of the eye. Suitable for use in closed loop control systems.

Input pin for modulation injection - allows a low frequency modulation signal to be injected into the driver without the need for any additional circuitry.

Built-in temperature compensated detectors to monitor the output voltage level. This option includes a reference and output level detector and can be provided with or without an internal differential operational amplifier circuit. Suitable for use in closed loop control systems.

RF input and output connectors. All drivers are supplied with female SMA connectors on both RF input and output as standard. Male SMA connectors are available on request.

Further Information

See the **application notes** for more general information on the use of this driver. For further technical information, please contact Steve Nightingale by phone on +44 (0) 1372 367121 or email optical.comms@era.co.uk.

Specification

parameter	units	minimum	typical	maximum
frequency		30 kHz		6 GHz
gain	dB	23	27	
gain ripple (10kHz-4GHz)	dB		± 1.5	± 2.5
input VSWR			1.6:1	1.9:1
output VSWR			2.0:1	2.5:1
output power at P_{1dB}				
100 kHz - 6GHz	dBm	20	22	
output power (saturated)				
100 kHz - 6 GHz	dBm	21	23	
group delay (2-6 GHz)	ps		±25	±50
noise figure (0.1-4 GHz)	dB		7	8
pulse response (7.5 V_{pp} output)				
overshoot/undershoot	%		5	10
droop	%		3	10
risetime	ps		60	70
DC power requirements				
DC supply voltage	V	+14	+15	+20
DC supply current	mA		500	600
operating temperature	°C	-5		+70
relative humidity	%			95

Typical Characteristics

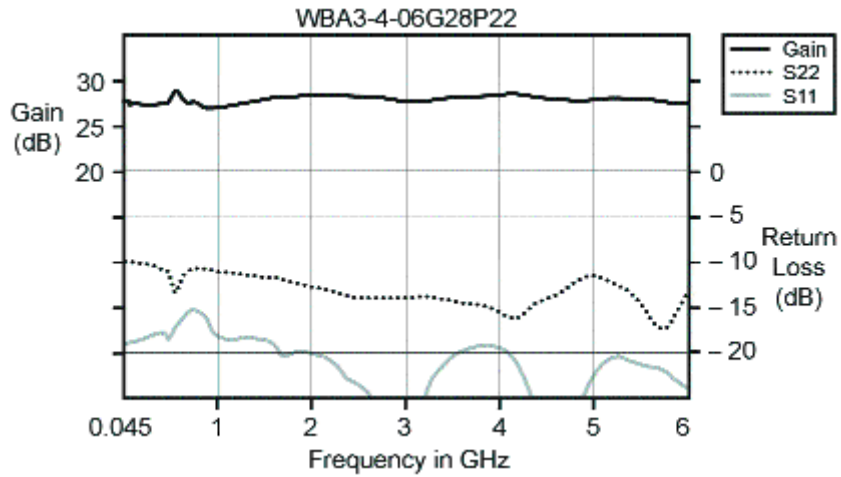


Figure 1: gain and return loss variation with frequency

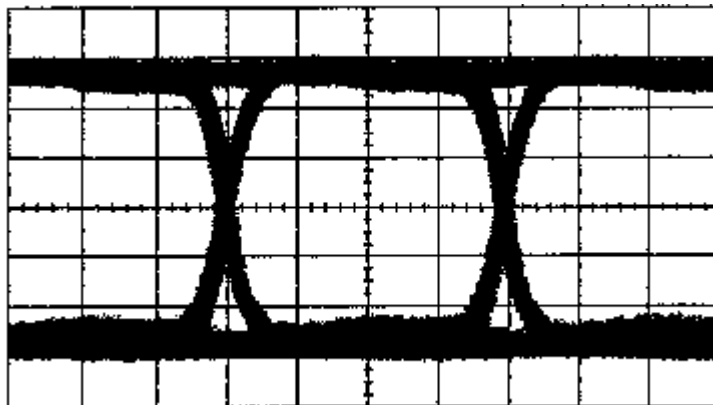


Figure 2: 2.5 Gb/s eye diagram (Horizontal scale: 100 ps/div)

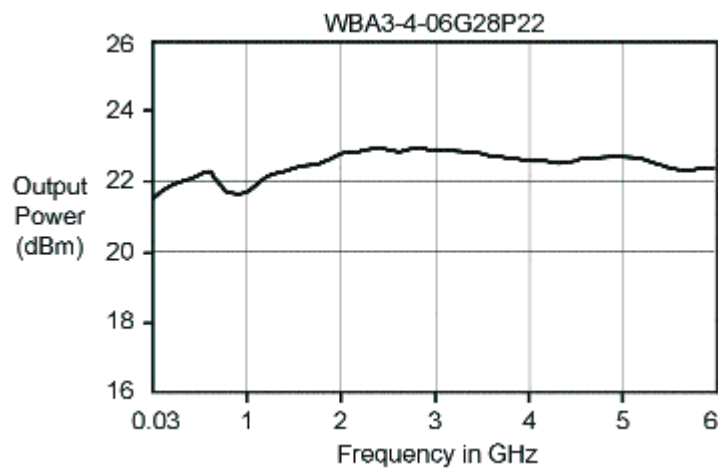


Figure 3: output power (P_{1dB}) variation and frequency

