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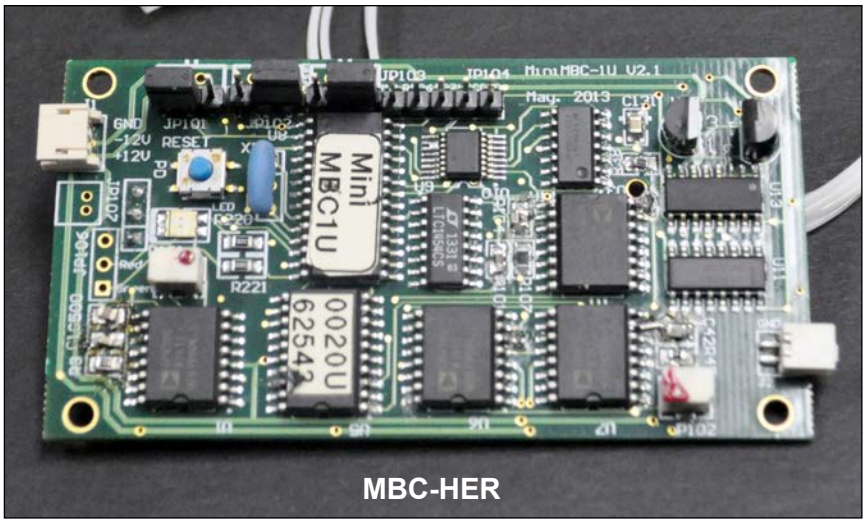
219 Westbrook Road
Ottawa, ON, Canada, K0A 1L0

Toll free: 1-800-361-5415
Telephone: 1-613-831-0981
Fax: 1-613-836-5089
sales@ozoptics.com

MODULATOR BIAS CONTROLLER - HIGH EXTINCTION RATIO MINI

Features

- For high-extinction ratio applications
- PCB level
- Stand alone
- No computer interface required
- User selectable locking slope (QUAD+ ↔ QUAD-, NULL ↔ PEAK)
- User selectable locking mode (Quad+/Quad- ↔ Null/Peak)
- Two operation modes: calibration mode and locking mode
- Calibration off mode for quick system setup in locking mode
- Access for external photo-detector
- Locking priority selectable



Product Description

This high-extinction ratio full-function miniature OEM version Modulator Bias Controller (MBC) is designed to be used with a single MZ modulator for high extinction ratio applications. The Modulator Bias Controller not only can be used to lock the working point of the modulator at the positive slope quadrature (quad+), negative slope quadrature (quad-), null or peak points of its characteristic curve, but also features an extremely small pilot tone which allows for an exceptionally high extinction ratio of > 45 dB, depending on the limits of the modulator. The locking modes and slopes are selectable by changing the jumper positions on the PCB. A pigtailed photodetector is included. An external photodetector may also be used.

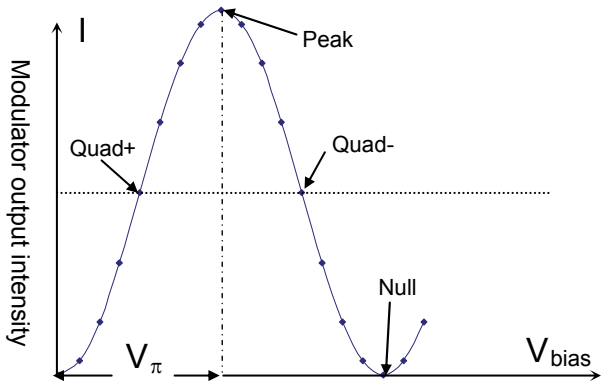


Figure 1. MZ modulator working function

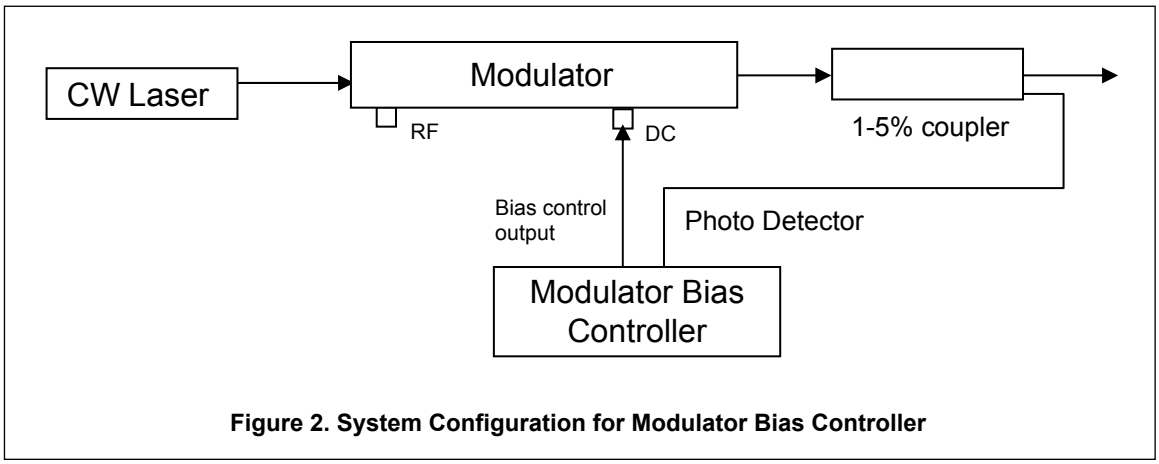


Figure 2. System Configuration for Modulator Bias Controller

OZ Optics reserves the right to change any specifications without prior notice.

Specifications

Parameters		Min.	Typ.	Max.
Optical Performance				
Detector Input Power[1] (dBm)	Peak, Null mode	-30	-10	
	Quad mode	-20	-10	
Optical Wavelength[2] (nm)		1000–1650		
Electrical Performance				
Bias Voltage (V)		-13.5		13.5
Null Mode Extinction Ratio[3] (dB)			30	53
Bias Locking Priority[4]		0 V or 8 V		
Locking Slope		Positive or Negative		
Locking Mode		Quad+ (Quad-) or Null (Peak)		
Pilot Tone				
Modulation Depth (QUAD)[5] (%)			1	2
Pilot Tone Vpp (Null) (mV)			6	
Pilot Tone Frequency (QUAD) (Hz)			1000	
Pilot Tone Frequency (NULL) (Hz)			2000	

Parameters	Min.	Typ.	Max.
Power Supplies			
Positive Power Voltage (V)	14.5	15	15.5
Negative Power Voltage (V)	-14.5	-15	-15.5
Positive Power Current (mA)		60	
Negative Power Current (mA)		40	
General			
Operating Temperature (°C)	0–70		
Storage Temperature (°C)	-40–85		
Dimension (inch)	1.6 x 3.05 x 0.65		
Weight (lb)	0.2		

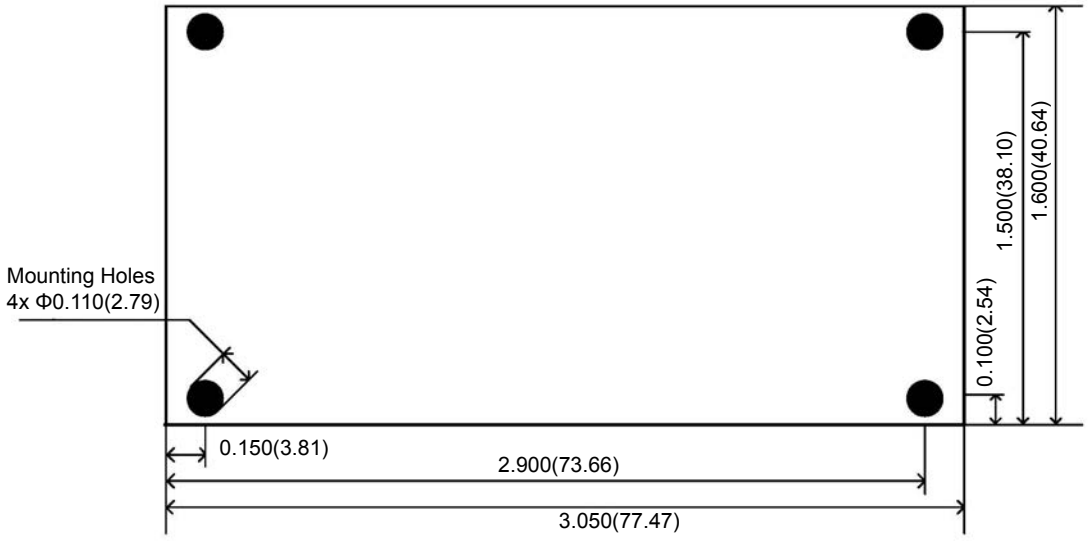
1 For a given input, detection power refers to the coupled optical power to the photodiode of MBC when the modulator output is at its minimum attenuation (The detection power does not describe the detected power at locking status).

2 The wavelength range can be expanded with PDs of different wavelengths.

3 In this case, the modulator output power was greater than 0 dBm. 1% coupler was used. The extinction ratio will be close to, but not exceed, the extinction ratio of the modulator.

4 User must choose one.

5 Optical Modulation Index = amplitude of modulation/Vπ.



Dimensions in inches(milimeters) unless otherwise noted

Figure 3. Mechanical Dimensions

Part Number

MBC-HER-PP-X-LV

PP = Pigtailed Photodiode code:
PD = Pigtailed photodiode included
00 = Pigtailed photodiode not included
Leave connector code blank

LV = 0 = 0 V priority
8 = 8 V priority

X = Connector code:
3U = FC/UPC
3A = FC/APC
SCU = SC/UPC
SCA = SC/APC
LCU = LC/UPC
LCA = LC/APC