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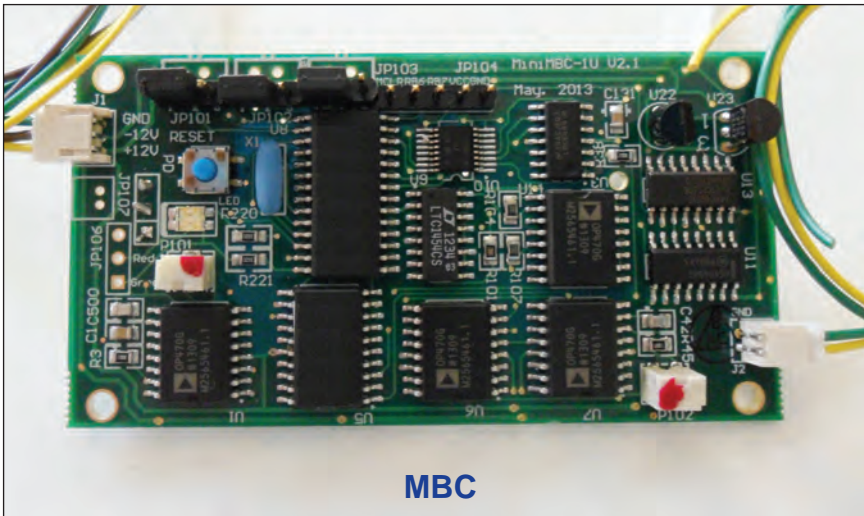
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MINI MODULATOR BIAS CONTROLLER (BOARD LEVEL)

PRELIMINARY

Features

- 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
- Low profile (3.1" x 1.6" x 0.65")
- Access for external photo-detector
- Stand alone
- Computer interface is not required



MBC

Product Description

The mini Modulator Bias Controller is a full-function miniature OEM version of the Modulator Bias Controller (MBC) family. It is designed to be used for a single modulator general applications. The Modulator Bias Controller 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. The locking modes and slopes are selectable by changing the jumper positions on the PCB. A pigtailed photo-detector is included. An external photo-detector may also be used.

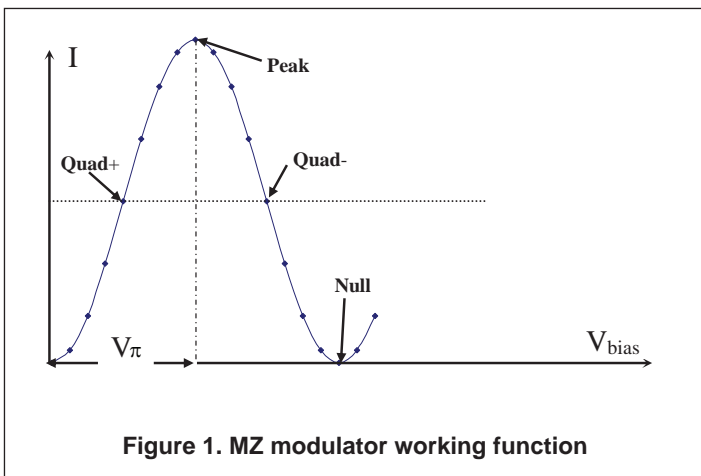


Figure 1. MZ modulator working function

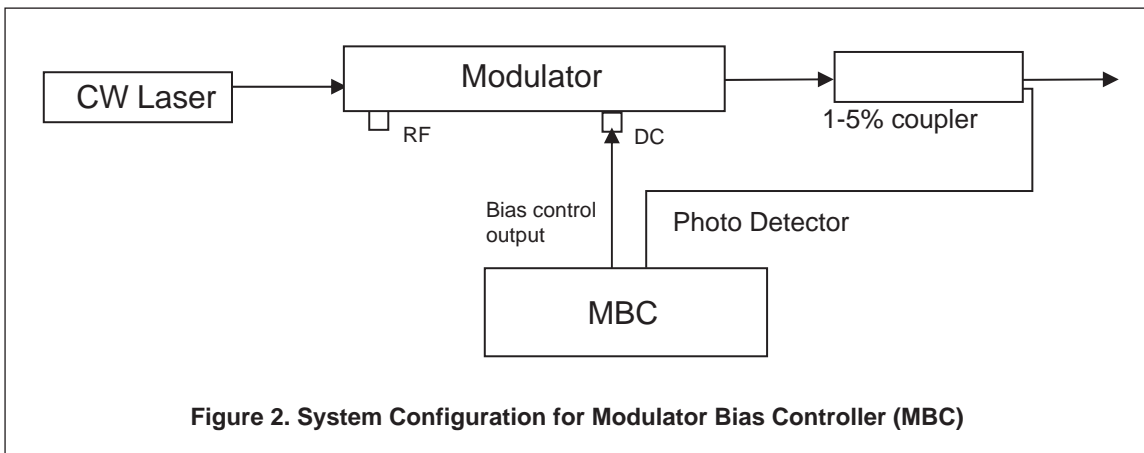


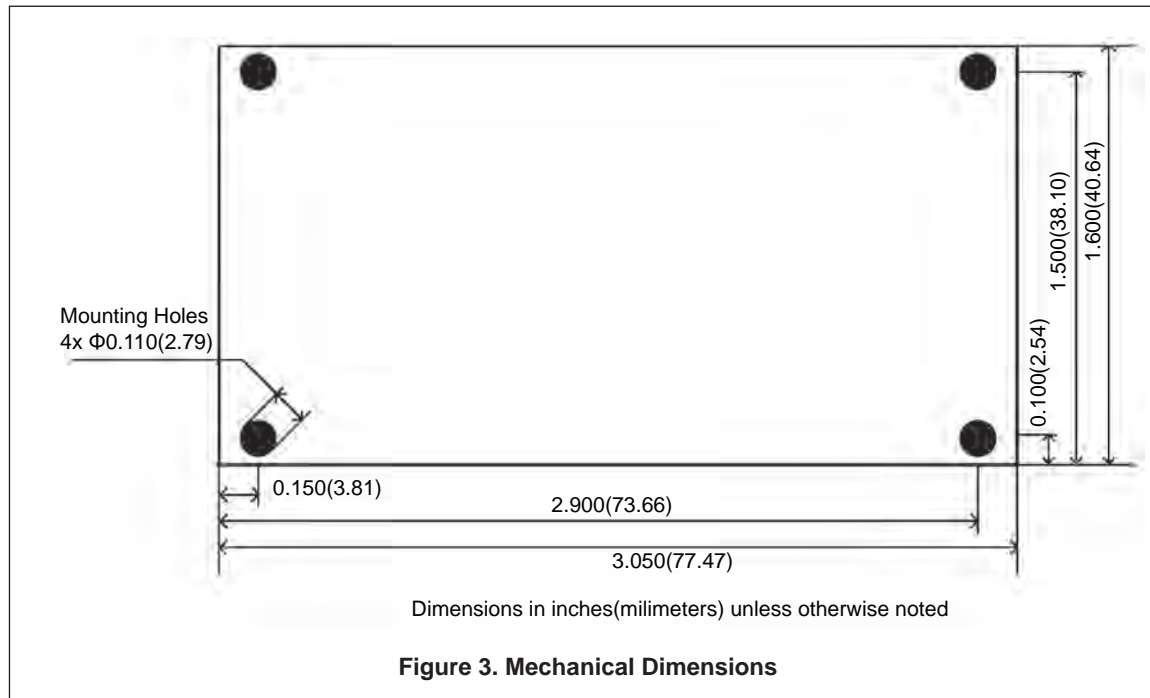
Figure 2. System Configuration for Modulator Bias Controller (MBC)

Specifications

Parameters	Min.	Typ.	Max.
Optical Performance			
Detector Input Power ¹ (dBm)	-30		-10
Optical Wavelength ² (nm)	630–1650		
Electrical Performance			
Bias Voltage (V)	-10		10
Null Mode Extinction Ratio ³ (dB)		25	40
Locking Slope	Positive or Negative		
Locking Mode	Quad+ (Quad-) or Null (Peak)		
Pilot Tone			
Modulation Depth (QUAD) ⁴ (%)		1	2
Modulation Depth (Null) (%)			0.1
Pilot Tone Frequency (QUAD) (Hz)		1000	
Pilot Tone Frequency (NULL) (Hz)		2000	

Parameters	Min.	Typ.	Max.
Power Supplies			
Positive Power Voltage (V)	11.5	12	12.5
Negative Power Voltage (V)	-12.5	-12	-11.5
Positive Power Current (mA)		60	
Negative Power Current (mA)		40	
General			
Operating Temperature (°C)	0–70		
Storage Temperature (°C)	-40–85		
Dimension (inch)	3.1 x 1.6 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 can be expanded with PDs for 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 Optical Modulation Index = amplitude of modulation/ V_{π} .



Part Number

MBC-MINI-PP-X

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

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

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