



# OZ Optics

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## MODULATOR BIAS CONTROLLER - TUNABLE

**PRELIMINARY**

### Features

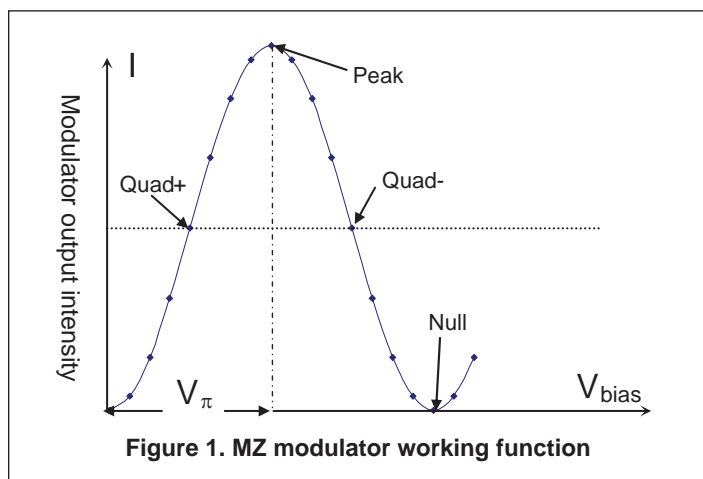
- All settings are remotely controllable through USB computer interface
- Tunable locking to any desired working point
- Two operation modes: calibration mode and locking mode
- Tunable/fixed selectable
- Auto/manual modes selectable
- The pilot one can be stopped
- Calibration off mode for quick system setup in locking mode
- Low profile (2.53" x 2.57" x 0.65")
- Access for external photo-detector
- User adjustable pilot tone amplitude
- PD integrated.
- GUI computer interface
- All the parameters can be read and displayed at GUI

### Product Description

The Modulator Bias Controller is a full-function miniature OEM version of the Modulator Bias Controller (MBC) family. It is designed to be used in analog systems and/or applications. The Modulator Bias Controller can be used to lock the working point of the modulator at any working point of the modulator working function. The locking modes and slopes are selectable under software control via the GUI. An optional pig-tailed photo-detector is available. An external photo-detector may also be used.



**MBC-TUNABLE**



**Figure 1. MZ modulator working function**

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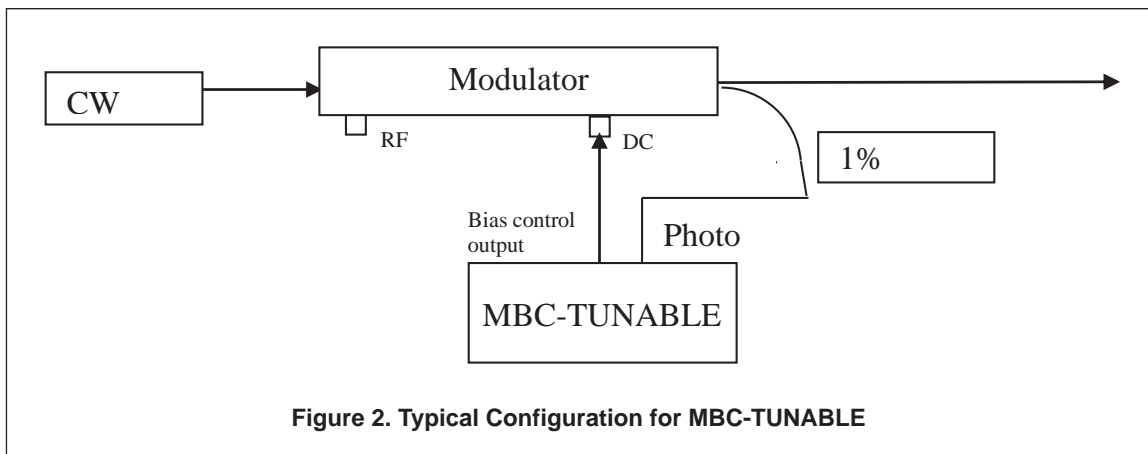
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## Specifications

Parameters	Min.	Typ.	Max.
<b>Optical Performance</b>			
Detector Input Power <sup>1</sup> (dBm)	-30		-10
Optical Wavelength (nm)	1000–1650		
<b>Electrical Performance</b>			
Bias Voltage (V)	-12		12
Null Mode Extinction Ratio <sup>2</sup> (dB)		36	40
Locking Slope	Positive or Negative		
Locking Mode <sup>3</sup>	Quad+ (Quad-) or Null (Peak)		
<b>Pilot Tone</b>			
Amplitude (mV)	20–250		
Pilot Tone Frequency (kHz)		5/10	
<b>Power Supplies</b>			
DC Positive Power Voltage (V)	14.5	15	15.5

Parameters	Min.	Typ.	Max.
DC Negative Power Voltage (V)	-15.5	-15	-14.5
DC Positive Power Current (mA)		145	
DC Negative Power Current (mA)		80	
<b>General</b>			
Operating Temperature (°C)	0–50		
Storage Temperature (°C)	-40–85		
Dimension (inch)	2.53 x 2.57 x 0.65		
Weight (lb)	0.2		

- <sup>1</sup> 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).
- <sup>2</sup> 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.
- <sup>3</sup> The desired locking point can be tuned away from Peak/Null/Quad. This tune mode can be switched off/on.



Part Number

***MBC-TUNABLE-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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