



# OZ Optics

shop.ozoptics.com  
www.ozoptics.com

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 - TUNABLE

**PRELIMINARY**

### Features

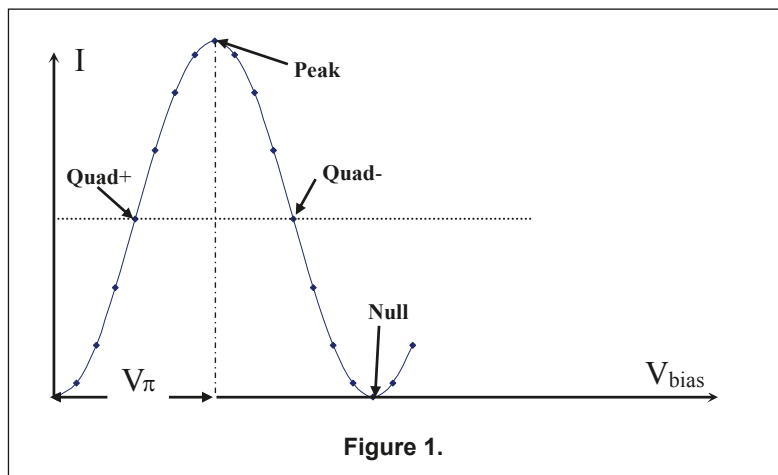
- User selectable locking slope (QUAD+ ↔ QUAD-, NULL ↔ PEAK)
- Tunable to locking at any working point
- Two operation modes: calibration mode and locking mode
- Tunable/fixed selectable
- Calibration off mode for quick system setup in locking mode
- Low profile (2.53" x 2.57" x 0.65")
- Access for external photo-detector
- GUI computer interface

### 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.**

## 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
Tuning Range (Degrees)	Around Quad	-50	50
	Around Peak/Null	-50	50
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	

Parameters	Min.	Typ.	Max.
<b>Power Supplies</b>			
DC Positive Power Voltage (V)	14.5	15	15.5
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		
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.

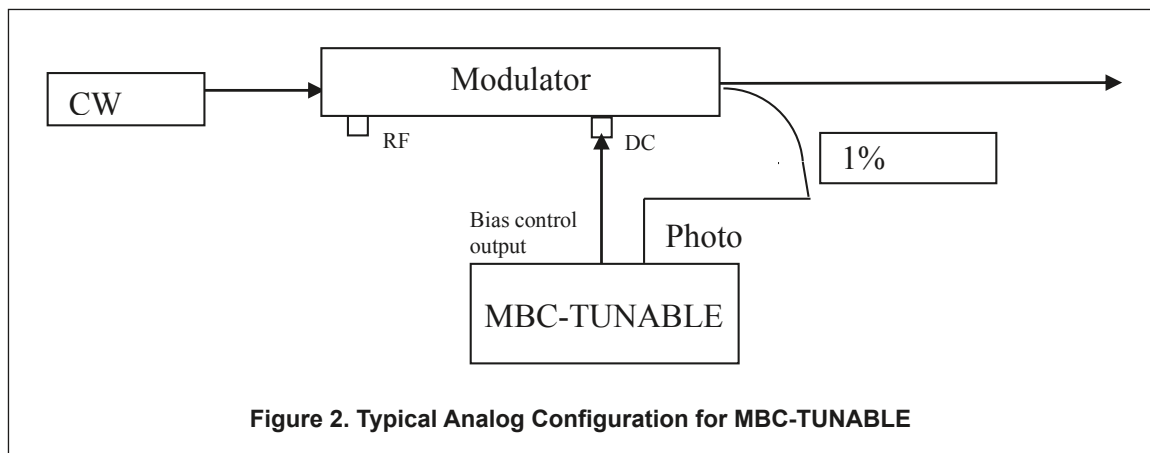


Figure 2. Typical Analog Configuration for MBC-TUNABLE

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:  
 3 = NTT-FC/PC  
 3A=Angled NTT-FC/PC  
 SC=SC  
 SCA=Angled SC  
 LC=LC  
 LCA=Angled LC  
 Blank = No built-in photodiode