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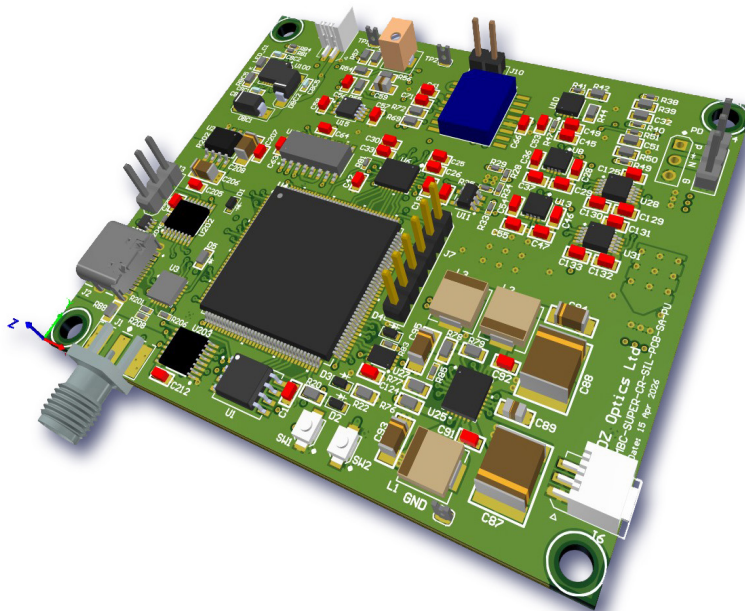
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MODULATOR BIAS CONTROLLER – TUNABLE-SIL

Features

- Designed to be used with either single LN MZ modulators or silicon based modulators
- Bias Port can deliver current up to 250 mA (Note: Current limit is configurable per user request)
- Bias Port voltage adjustment capabilities from -12V to +12V
- 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
- PCB board Size (2.5" x 3" x 0.65")
- Access for external photo-detector
- User adjustable pilot tone amplitude
- PD integrated
- GUI computer interface via USB Type C as standard
- RS232DB9 or RS232FW (Flywires) interface available as an option
- All settings are remotely controllable through USB computer interface
- All the parameters can be read and displayed at GUI



MBC-TUNABLE-SIL

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 with either single LN MZ modulators or silicon based modulators or Thin film lithium niobate (TFLN) modulator 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 pigtailed photo-detector is available. An external photodetector may also be used.

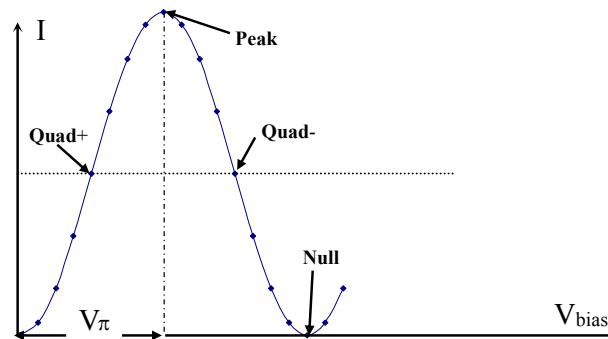


Figure 1. MZ modulator working function

Specifications

Parameters	Min.	Typ.	Max.
Optical Performance			
Detector Input Power ¹ (dBm)	-30		-10
Optical Wavelength (nm)	1000–1650		
Electrical Performance			
Bias Voltage (V)	-12		12
Bias Current (mA) ⁴		Configurable	250
Null Mode Extinction Ratio ² (dB)		36	40
Locking Slope	Positive or Negative		
Locking Mode ³	Quad+ (Quad-) or Null (Peak)		
Pilot Tone			
Amplitude (mV)	20–250		
Pilot Tone Frequency (kHz)		5/10	
Power Supplies			
DC Positive Power Voltage (V)	14.5	15	15.5

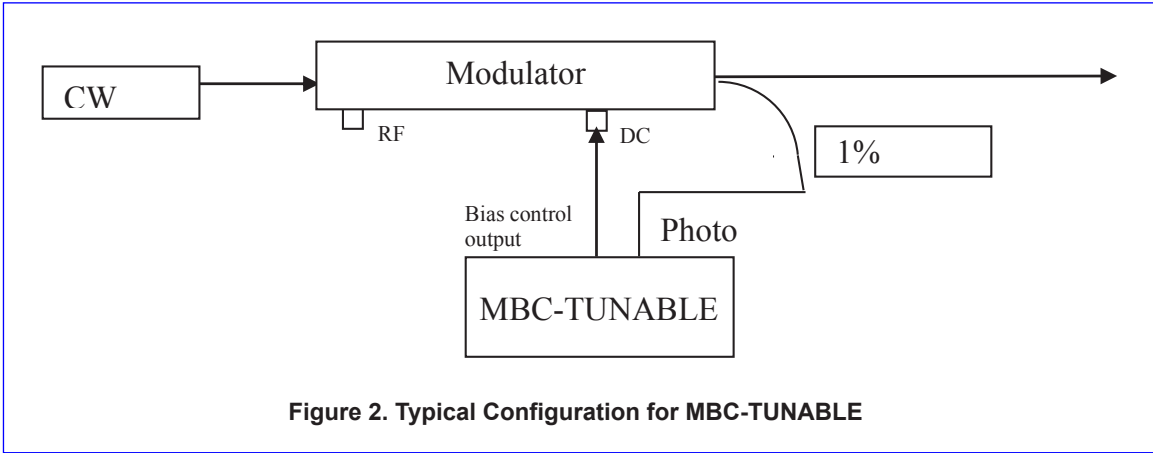
Parameters	Min.	Typ.	Max.
DC Negative Power Voltage (V)	-15.5	-15	-14.5
DC Positive Power Current (mA)		190	
DC Negative Power Current (mA)		105	
General			
Operating Temperature (°C)	0–50		
Storage Temperature (°C)	-40–85		
Dimension (inch)	2.5 x 3 x 0.65		
Weight (lb)	0.2		

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 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.

³ The desired locking point can be tuned away from Peak/Null/Quad. This tune mode can be switched off/on.

⁴ Bias Current limit can be configured by manufacturer as per user request.



Part Number

MBC-TUNABLE-SIL-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