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MODULATOR BIAS CONTROLLER - SUPER-SIL
(GENERAL BIAS CONTROLLER WITH PULSE MODE APPLICATIONS)

Features

- 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
- Designed to be used with either single LN MZ modulators or silicon based modulators
- Bias Port can deliver current up to 250 mA
- Bias Port voltage adjustment capabilities
- PCB level Stand alone
- Size (3″ x 2.5″ x 0.65″)
- Access for external photo-detector
- GUI computer interface via USB Type C as standard
- RS232DB9 or RS232FW (Flywire) interface available as an option
- Pulse mode for more accurate null locking
- Fine tuning pilot tone parameters through the GUI
- Pulse mode for Null locking in dense pulse applications
- GUI is provided with multi-unit control capabilities
- User may stop pilot tone, enter manual mode

MBC-SUPER-SIL

Product Description

This OEM version Modulator Bias Controller (MBC-SUPER-SIL) is designed to be used with either single LN MZ modulators or silicon based modulators or Thin film lithium niobate (TFLN) modulator. With added feature for dense pulse 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 through the GUI. A pigtailed photo-detector is included. An external photo-detector may also be used. The digital technique reduces noise and pilot tone amplitude, while improving the performance. With the pulse mode, the Null locking accuracy has been increased.

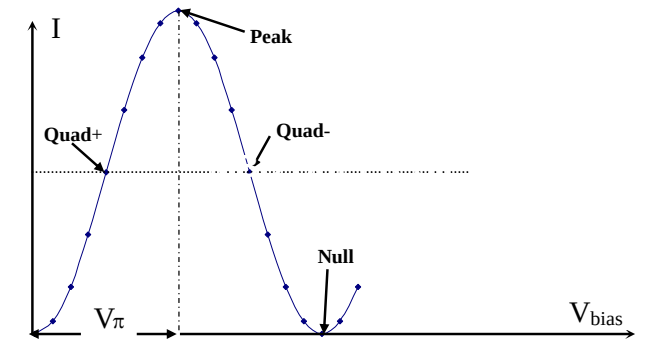

Figure 1. MZ modulator working function

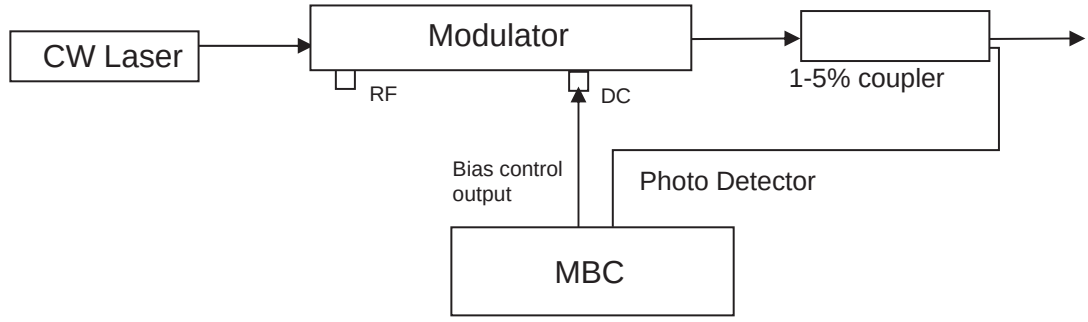

Figure 2. System Configuration for MBC-SUPER-SIL

Specification Table

Parameters	Min	Typ	Max
Optical Performance			
Detector Input Power[1] (dBm)	-25		-10
Optical Wavelength[2] (nm)	1000–1650		
Electrical Performance			
Bias Voltage (single ended) (V)	-12		12
Bias Current (mA)			250
Null Mode Extinction Ratio[3] (dB)		36	40
Locking Slope	Positive or Negative		
Locking Mode	Null, Peak, +Quad, -Quad		
Pilot Tone			
Modulation Depth[1] (Null) %	Adjustable		
Pilot Tone Amplitude[1] (mV) Vpp	0–250		
Pilot Tone Frequency (kHz)	1, 5, 10, 40		
Power Supplies			
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	
General			
Operating Temperature (°C)	0–40		
Storage Temperature (°C)	-40–85		
Dimension (inch)	3″ x 2.5″ x 0.65″		
Weight (lb)	0.2		

[1] Modulation Depth (Null) and Pilot Tone Amplitude are adjustable through the GUI.
[2] With PD of other wavelength, the Range of the wavelength can be expanded.
[3] Limited by modulator extinction ratio.

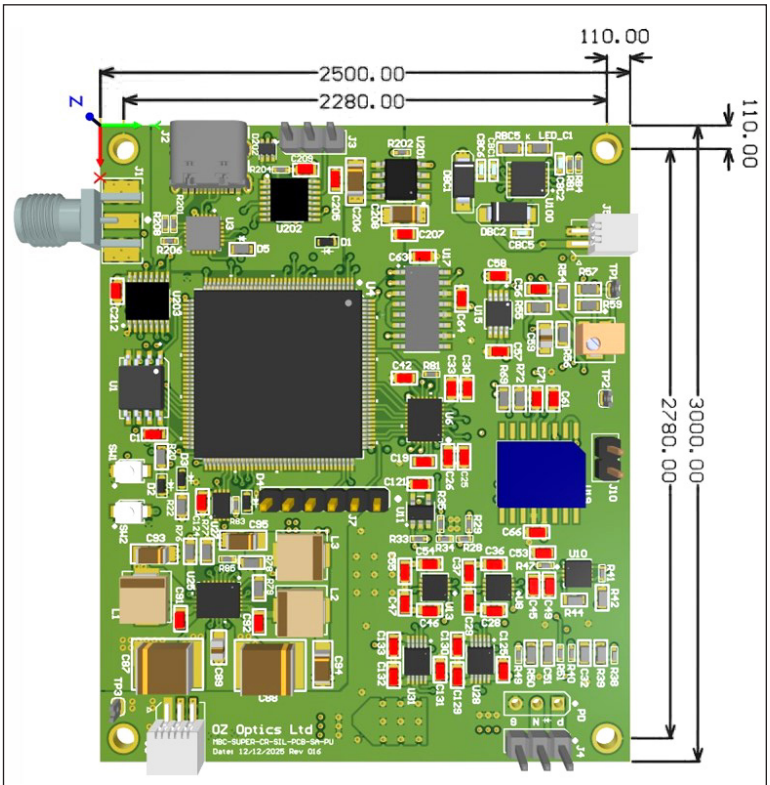

Figure 3. Mechanical Dimensions (in mil) with 4 x ϕ100 mil mounting holes

Part Number ***MBC-SUPER-SIL-PP-X-Y***

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

Y = Comm code:
W/O-Y = USB Type C (Standard)
RS232DB9 = RS232 DB9 (Optional)
RS232FW = RS232 with flywire (Optional)

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