

BI-DIRECTIONAL INTEGRATED TAP MONITOR ARRAYS

BTMA Series

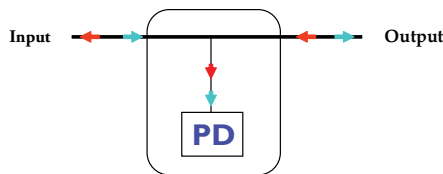
Product Description

Oplink's Bi-directional Integrated Tap Monitor Array (BTMA) is assembled using individual Bi-directional Integrated Tap Monitor (BTMS) to guarantee no optical or electrical cross-talk among different channels. BTMS is a hybrid component that integrates a flat spectral response of a thin-film tap with a high sensitivity PIN photodiode for power monitoring applications. The Bi-directional feature allows power monitoring from input or output ports. BTMA minimizes component assembly costs and module footprint while increasing module design efficiency by facilitating fiber management.

Each BTMS in the BTMA integrates the functionality of an optical tap and a photodiode while delivering low insertion loss and low dark current with high temperature stability over a wide wavelength range. BTMA is compact and easy to mount on PCB board for module and network system use. Applications include DWDM channel power monitoring, optical network switching/protection monitoring, re-configurable optical add/drop multiplexers, and gain/attenuation monitoring in amplifier systems.

Oplink can provide customized designs to meet specialized feature applications. Also, Oplink offers modular assemblies that integrate other components to form a full function module or subsystem.

Functional Diagram



Performance Specification

Parameters		Specification		Unit	
Operating Wavelength Range		1260 ~ 1360	1510~1610	nm	
Through	Insertion Loss (@λop, Top, All SOP, Exclude Connectors)	2%	≤ 0.4	dB	
		5%	≤ 0.6		
		10%	≤ 0.9		
	Polarization Dependent Loss	≤ 0.1		dB	
Return Loss (exclude connector)		≥ 45		dB	
Tapped Monitoring	Responsivity (Relative to Nominal Power at Input Port)	2%	10 ~ 23	14 ~ 26	mA/W
		5%	26 ~ 59	36 ~ 65	
		10%	52 ~ 110	70 ~ 120	
	Responsivity Polarization Dependence		≤ 0.1		dB
Uniformity ¹		≤ 0.5		dB	
PD	PD Dark Current (@ 70°C, -5V bias)		≤ 10		nA
	Bandwidth (50 ohm, 5V, -3dB)		≥ 0.5		GHz
	Reverse Voltage		≤ 20		V
	Forward Current		≤ 5		mA
Conditions	Input Optical Power	2%	≤ 21		dBm
		5%	≤ 16		
		10%	≤ 12		
	Operating Temperature Range (<85%RH, Non-condensing)		-0	+70	°C
Storage Temperature Range (<85%RH, Non-condensing)		-40	+85	°C	
Fiber Type		SMF-28			

Features

- ◆ Flat and Broad Operating Wavelength Range
- ◆ Low Insertion Loss and PDL
- ◆ Low Dark Current
- ◆ Various Tap Ratio Available
- ◆ High Temperature Stability with Hermetically Sealed Photodiode
- ◆ Monitor Optical Signal from Input or Output

Applications

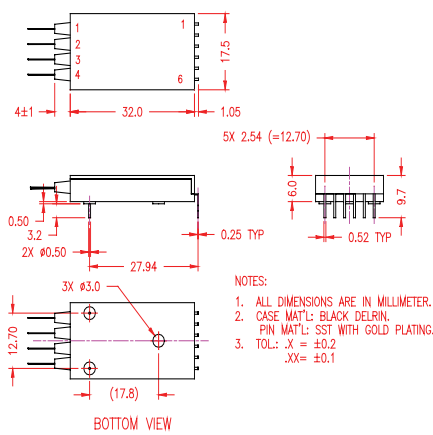
- ◆ Add/Drop and Optical Protection Monitoring
- ◆ DWDM/CWDM Systems

Notes:

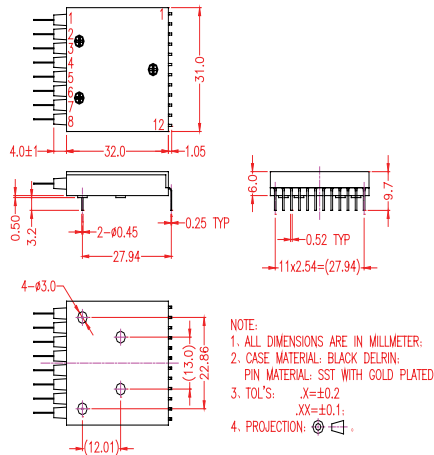
¹) Directivity is defined as $-10 \log(\mathfrak{R}_{\text{OUT} \rightarrow \text{PD}} / \mathfrak{R}_{\text{IN} \rightarrow \text{PD}})$ where \mathfrak{R} stands for responsivity.

Mechanical Drawing / Package Dimensions (dimension in mm)

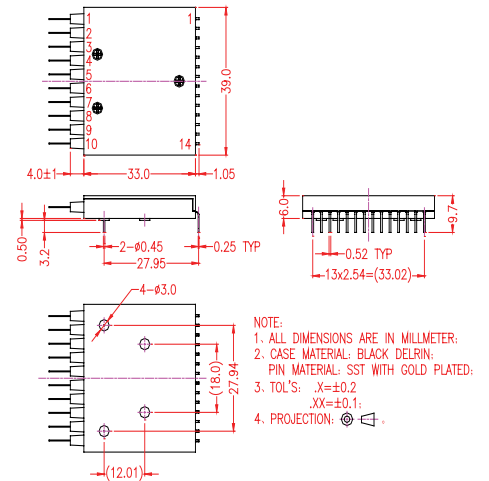
1) 4-ch BTMA



2) 8-ch BTMA



3) 10-ch BTMA



Electrical Pin Assignment

Pin#:	Common Cathode Assignment	Common Anode Assignment
Pin1:	Common Cathode for Ch1 & 2	Common Anode for Ch1 & 2
Pin2:	Anode Ch1	Cathode Ch1
Pin3:	Anode Ch2	Cathode Ch2
Pin4:	Common Cathode for Ch3 & 4	Common Anode for Ch3 & 4
Pin5:	Anode Ch3	Cathode Ch3
Pin6:	Anode Ch4	Cathode Ch4

Electrical Pin Assignment

Pin#:	Common Cathode Assignment	Common Anode Assignment
Pin1:	Common Cathode for Ch1 & 2	Common Anode for Ch1 & 2
Pin2:	Anode Ch1	Cathode Ch1
Pin3:	Anode Ch2	Cathode Ch2
Pin4:	Common Cathode for Ch3 & 4	Common Anode for Ch3 & 4
Pin5:	Anode Ch3	Cathode Ch3
Pin6:	Anode Ch4	Cathode Ch4
Pin7:	Anode Ch5	Cathode Ch5
Pin8:	Common Cathode for Ch5 & 6	Common Anode for Ch5 & 6
Pin9:	Anode Ch6	Cathode Ch6
Pin10:	Anode Ch7	Cathode Ch7
Pin11:	Common Cathode for Ch7 & 8	Common Anode for Ch7 & 8
Pin12:	Anode Ch8	Cathode Ch8

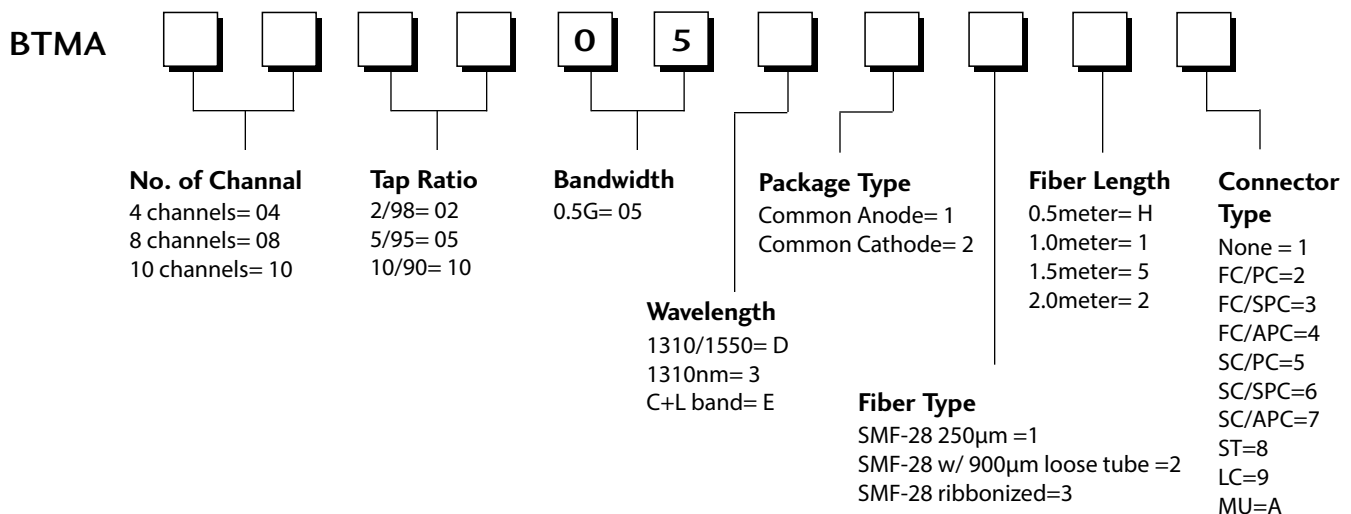
Electrical Pin Assignment

Pin#:	Common Cathode Assignment	Common Anode Assignment
Pin1:	Common Cathode for Ch1 to 4	Common Anode for Ch1 to 4
Pin2:	Anode Ch1	Cathode Ch1
Pin3:	Anode Ch2	Cathode Ch2
Pin4:	Anode Ch3	Cathode Ch3
Pin5:	Anode Ch4	Cathode Ch4
Pin6:	Anode Ch5	Cathode Ch5
Pin7:	Common Cathode for Ch5 to 8	Common Anode for Ch5 to 8
Pin8:	Anode Ch6	Cathode Ch6
Pin9:	Anode Ch7	Cathode Ch7
Pin10:	Anode Ch8	Cathode Ch8
Pin11:	Anode Ch9	Cathode Ch9
Pin12:	Common Cathode for Ch9 & 10	Common Anode for Ch9 & 10
Pin13:	Anode Ch10	Cathode Ch10
Pin14:	Not connected	Not connected

Note: Input and output ports are marked for testing purpose.

Ordering Information

Oplink can provide a remarkable range of customized optical solutions. For detail, please contact Oplink's OEM design team or account manager for your requirements and ordering information (510) 933-7200.



RoHS:

- BTMA is RoHS 5 compliant (RoHS permitted Lead in solder exemption is applied).
- Add "G" to the end of the above PN for RoHS 6 Requirement.