

FEATURES:

- Low Ripple
- Low Insertion Loss
- Epoxy-Free Optical Pat
- Extremely Low Dark Current
- Excellent Directivity Performance



APPLICATIONS:

- DWDM Channel Monitoring
- EDFA Power Monitoring/Control

DESCRIPTION:

The *Go!Foton* Integrated Tap Detector (TAPD) series combines optical couplers, based on our filter-on-lens technology, with *Go!Foton* proprietary PIN photodiodes to create a single channel optical power monitor. The integrated design reduces the number of parts, minimizes fiber handling and results in a compact footprint, which simplifies assembly of amplifier and WDM monitoring devices. The hermetically sealed InGaAs photo detector has an excellent low dark performance and a flat and rapid power response across a wide wavelength range.

SPECIFICATION:

The products supplied to this specification shall meet or exceed all the requirements specified herein.

A. Absolute Maximum Rating

PARAMETER	SYMBOL	UNIT	SPECIFICATION			NOTES
			MIN.	TYP.	MAX.	
Operating Temperature	Top	°C	-40	-	+85	-
Operating humidity Range (No Condensation)	RH _{OP}	%	5	-	95	-
Storage Temperature Range	T _{STG}	°C	-40	-	+85	-
Storage Humidity Range (No Condensation)	RH _{STG}	%	5	-	95	-
Reverse Bias	V _R	V	-	-	25	-
Forward Current	I _F	mA	-	-	10	-
Electrostatic Discharge(ESD) Threshold ¹⁾	V _{ESD}	V	-	-	250	-
Soldering Temperature ²⁾	T _{SOL}	°C	-	250	-	-

Notes:

- 1) Capacitance :100pF, Resistance :1.5kΩ, Human Body Model
- 2) At least 2mm away from the device's body for < 10 seconds

B. OPTICAL AND ELECTRICAL CHARACTERISTICS

Unless otherwise noted, test condition is at 1550nm, 25°C, Vr:5V.

PARAMETER	SYMBOL	UNIT	SPECIFICATION							Condition
			0.5	1	2	5	10	30	50	
Tap Ratio	TR	%								
Wavelength Range	λ_R	nm	1520~1570							C-Band
			1570~1610							L-Band
			1510~1610							CL-Band
Insertion Loss	IL	dB	<0.5	<0.5	<0.5	<0.6	<0.8	<2.3	<3.6	λ_R, T_{op}
Wavelength Flatness	WDL	dB	<0.10							C-Band and L-Band
			<0.15							CL-Band
Temperature Dependent Loss	TDL	dB	<0.15							1550nm, T_{op}
Polarization Dependent Loss	PDL	dB	<0.05							1550nm,RT
Return Loss	RL	dB	>50							1550nm,RT
Maximum Optical Power Handling	P_{max}	dBm	26	23	20	19	13	8	6	-
Minimum Responsivity	RS_{MIN}	mA/W	4	8	16	45	70	240	350	$\lambda_R, T_{op}, V_r:5V$
Maximum Responsivity	RS_{MAX}	mA/W	8.5	15	26	65	145	400	600	$\lambda_R, T_{op}, V_r:5V$
Wavelength Dependent Responsivity	WDRs	dB	<0.40							C-Band, $T_{op}, V_r:5V$
			<0.40							L-Band, $T_{op}, V_r:5V$
			<0.45							CL-Band, $T_{op}, V_r:5V$
Temperature Dependent Responsivity	TDRs	dB	<0.40							C-Band, $T_{op}, V_r:5V$
			<0.40							L-Band, $T_{op}, V_r:5V$
			<0.45							CL-Band, $T_{op}, V_r:5V$
Polarization Dependent Responsivity	PDRs	dB	<0.20							$\lambda_R, T_{op}, V_r:5V$
Directivity	Dir	dB	>25							TPCU Model
			>33							TPCP Model
Dark Current @ 25°C	I_{dRT}	nA	<0.08							$V_r:5V$
Dark Current @ 85°C	I_{dHT}	nA	<2							$V_r:5V$
Linearity	LIN	%	$\pm 5\%$							See Notes below.
Capacitance	C	pD	1.3 (Maximum)							1MHz, $V_r:5V$
Bandwidth	BW	GHz	2.5 (Typical)							-3dB,RL=50Ω, $V_r:5V$

Notes:

- Linearity is measured at $V_r: 5V, 1550nm, +10$ to $-30dBm$ optical input to fiber.
- Linearity calculation is using below formula.

$$LIN_{MAX}(\%) = \frac{RS_{MAX} - RS_{AVE}}{RS_{AVE}} \times 100$$

$$LIN_{MIN}(\%) = \frac{RS_{MIN} - RS_{AVE}}{RS_{AVE}} \times 100$$

where:

RS_{MAX} : Maximum responsivity at the entire optical input range.

RS_{MIN} : Minimum responsivity at the entire optical input range.

RS_{AVE} : Average responsivity at the entire optical input range.

C. OTHER SPECIFICATIONS

PARAMETER	SYMBOL	UNIT	SPECIFICATION	NOTES
Fiber Type	FT	-	ITU652.D Compliant Fiber	-
Fiber Length	FL	mm	1000±100	-
Fiber Coloring	FC	-	Clear	Clear with black marking for Input port
Module Length	ML	mm	20.5±0.5	-
Pin Length	PL	mm	>12	-
Optical Connector	OC	-	None	-

D. PACKAGE DIMENSIONS

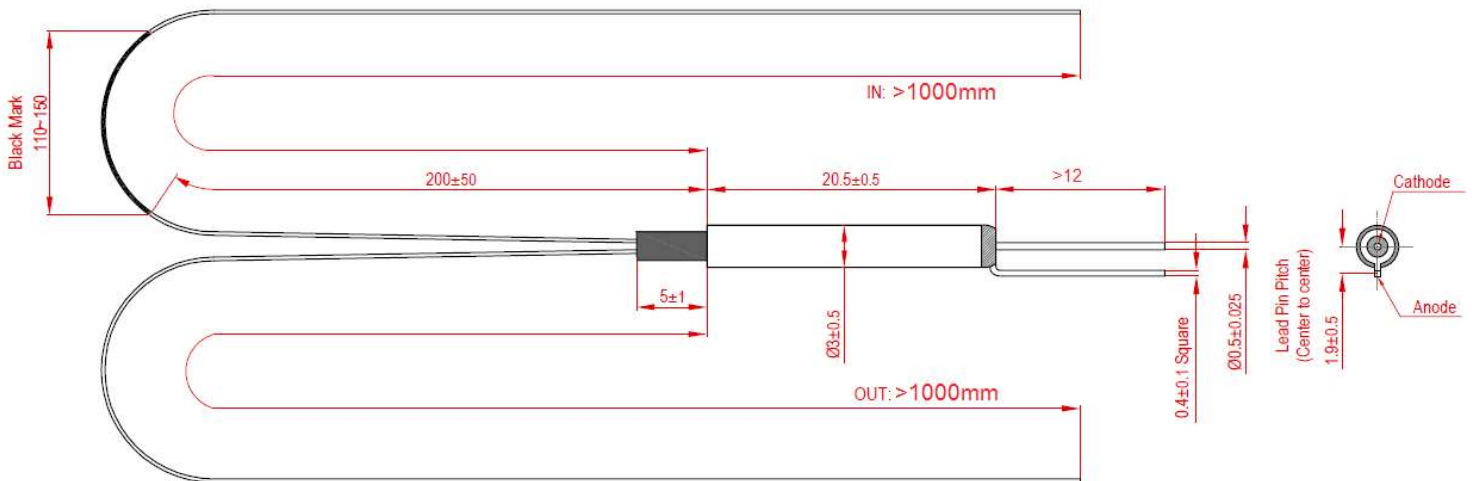


Figure 1. Compact Unidirectional Tap Photo Detector

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E. ORDERING INFORMATION

T	P	C		0	1				1		0	
1	2	3	4	5	6	7	8	9	10	11		

Ordering Guide:

Please use this guide to create the product's model code.

FIELD NO.	FIELD DESCRIPTION	CODE	CODE DESCRIPTION	NOTES
1	Product Structure	TP	TAPD	Default Code.
2	Packaging Size	C	Compact Package	See Figure 1
3	Product Grade	U	Unidirectional	See Section B
		P	Premium Unidirectional	See Section B
4	Number of Channels	01	Single Channel	Default Code.
5	Tap Ratio	05	0.5%	See Section B
		1P	1%	See Section B
		2P	2%	See Section B
		5P	5%	See Section B
		10	10%	See Section B
		30	30%	See Section B
		50	50%	See Section B
6	Wavelength Range	C	1520-1570nm	-
		L	1570-1610nm	-
		F	1520-1610nm	-
7	Fiber Type	1	250um (SMF)	Default Code.
8	Fiber Length	1	1000mm	1000±100mm
		2	2000mm	2000±100mm
9	Flange/Mounting Bracket	0	No Flange	Default Code.
10	Connector (INPUT Port)	0	None	-
		1	FC/SPC	-
		2	FC/APC	-
		3	SC/SPC	-
		4	SC/APC	-
		5	LC/PC	-
		6	MU/PC	-
11	Connector (OUTPUT Port)	0	None	-
		1	FC/SPC	-
		2	FC/APC	-
		3	SC/SPC	-
		4	SC/APC	-
		5	LC/PC	-
		6	MU/PC	-
7	LC/APC	-		