

13. Fiber Optic Product



FEATURE

- High Isolation WDM
- Low Noise Floor & Low Back Reflection
- High Sensitivity & High Dynamic Range
- Laser Diode, Photo Diode Alarm Circuit
- RF Diversity

APPLICATION

- TETRA, GSM, WCDMA, LTE, 5G
- Fiber Optic Repeater
- Analog CATV, CCTV
- Cable Booster(Subway, Tunnel)



Multi-wave Optic Transceiver

SUMMARY OF FEATURE

- Broadband Operation
- Low Noise & Low Back Reflection
- 1310, 1550, 1530, 1510, 1570nm Wave Length
- WDM Inside
- FSK Modem



SPECIFICATION

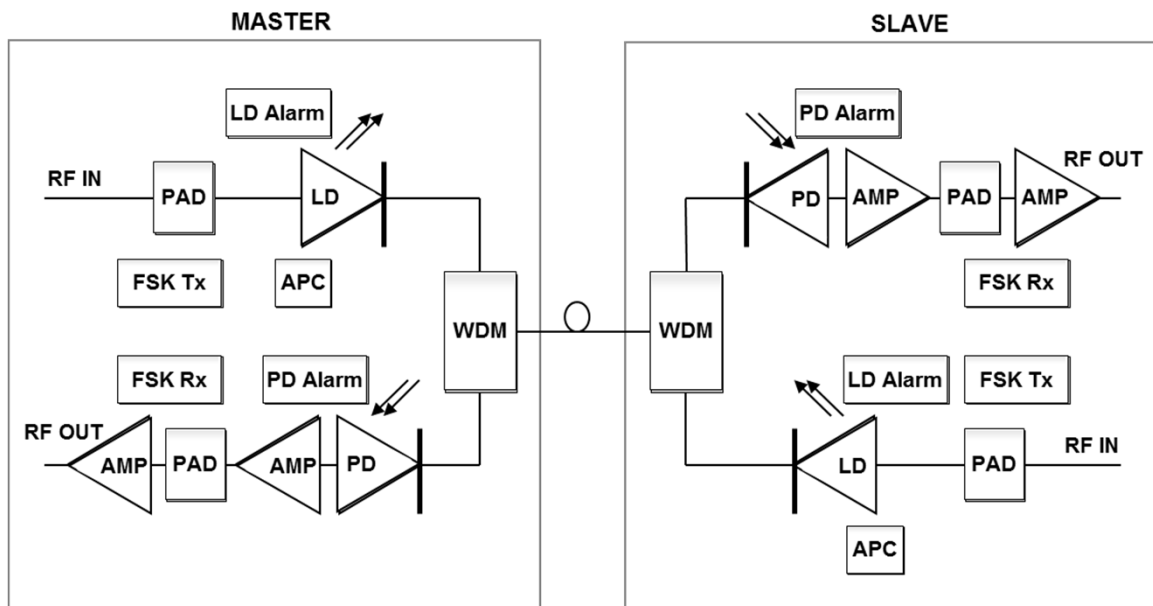
Parameter		Unit	Item			Remarks
			Min.	Typ.	Max.	
Frequency Range		500~1800KHz, 500KHz~230MHz, 50~500MHz, 50~1000MHz, 88~2200MHz, 88~2700MHz, 380~2700MHz				
Optical Output Power	Master	dBm	2	-	7	Master
	Slave					Slave
Wave Length	Master	nm	1300	1310	1320	WDM Inside, Number of Wave can be Customized
	Slave1		1500	1510	1520	
	Slave2		1520	1530	1540	
	Slave3		1540	1550	1560	
	Slave4		1560	1570	1580	
RF GAIN	TX(88~2700MHz)	dB	-3.5	0	+3.5	Frequency can be Customized
	RX(88~2700MHz)					
Flatness	Forward	dB(p-p)	-	-	4	-
	Reverse					
VSWR	Forward	S11	1.5 : 1			-
	Reverse	S22				
IP3 (0dBm/Tone)	Forward	dBm	25	-	-	-
	Reverse					
Output Noise Floor	Forward	dBm/Hz	-	-	-130	-
	Reverse					
Isolation	Master	dBc	50	60	-	-
	Slave					
Alarm	LD	dBm	-	-3	-	Normal High
	PD	dBm	-	-15	-	
Current	Master	mA	-	-	700	12VDC
	Slave					
FSK Modem	Forward Frequency	MHz		26		Optional
	Reverse Frequency	MHz		29		
	Data Rate	bps		9600		
Connector		FC/APC or SC/APC, 9Pin D-sub, SMA(f)				

Multi-wave Optic Transceiver

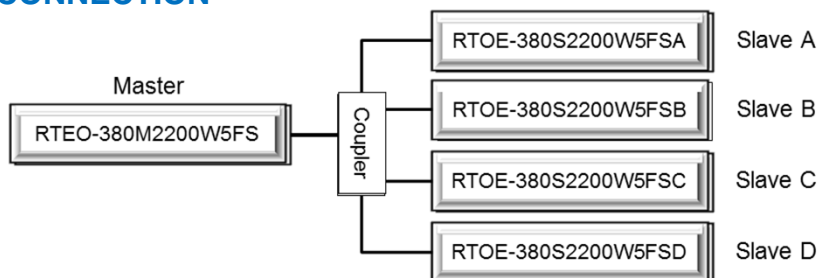
INTERFACE DESCRIPTION

Pin Number	Specification		Remark
	Master	Slave	
1	Enable Modem	Enable Modem	Enable: Low, Disable: +5V or NC
2	GND	GND	
3	+12V	+12V	
4	TX_DATA	TX_DATA	RS232 Interface
5	RX_DATA	RX_DATA	
6	LD MONITOR	LD MONITOR	Alarm Type: Open Collector Normal- High Alarm- Low
7	LD ALARM	LD ALARM	
8	PD MONITOR	PD MONITOR	
9	PD ALARM	PD ALARM	

FUNCTIONAL BLOCK DIAGRAM



MODULE CONNECTION



[5-wave Fiber Optical Transceiver]

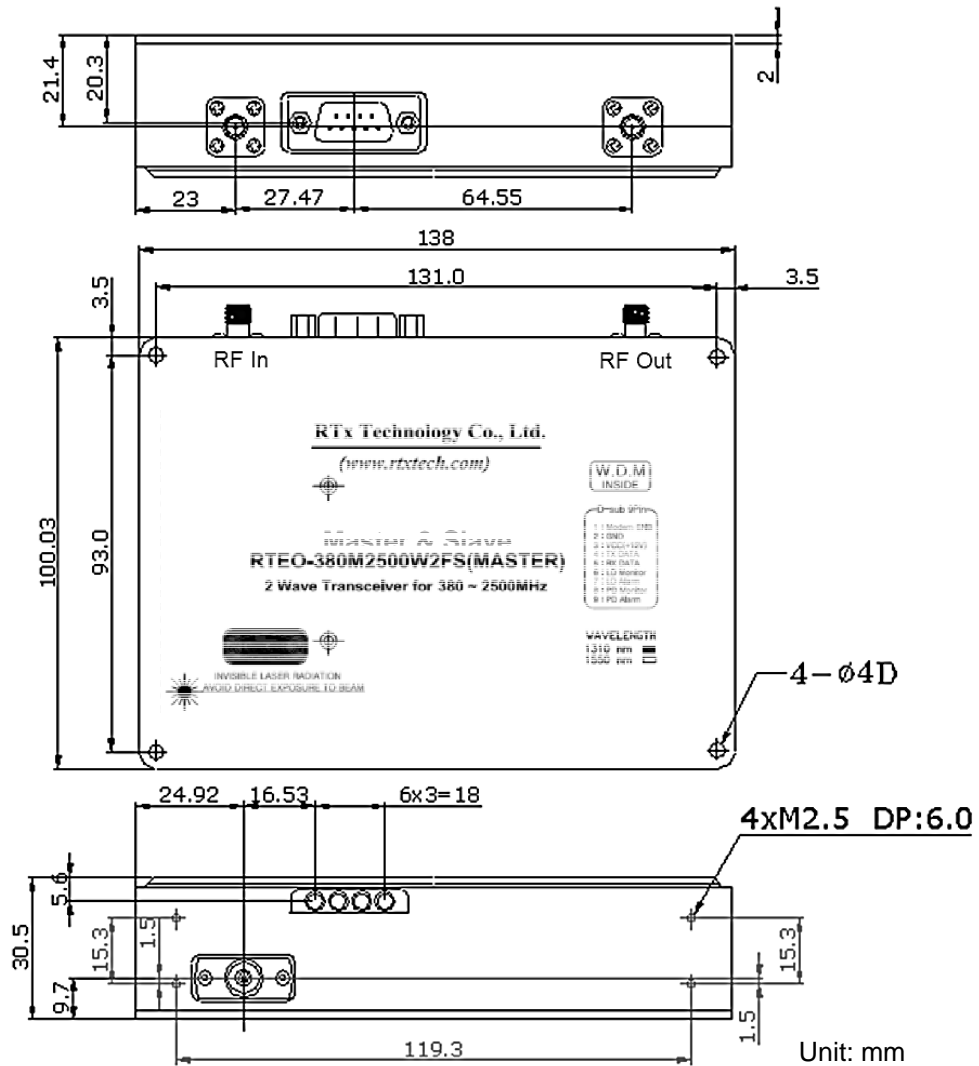
Multi-wave Optic Transceiver

PART NUMBER

Model	Part Number	
	Master	Slave
2Waves	RTEO-xxMyyyW2FS	RTOE-xxSyyyW2FS
3Waves	RTEO-xxMyyyW3FS	RTOE-xxSyyyW3FSA, RTOE-xxSyyyW3FSB
4Waves	RTEO-xxMyyyW4FS	RTOE-xxSyyyW4FSA, RTOE-xxSyyyW4FSB, RTOE-xxSyyyW4FSC
5Waves	RTEO-xxMyyyW5FS	RTOE-xxSyyyW5FSA, RTOE-xxSyyyW5FSB, RTOE-xxSyyyW5FSC, RTOE-xxSyyyW5FSD

• xx: Start Frequency, yyy: Stop Frequency

DRAWING



Optic Transmitter & Receiver

SUMMARY OF FEATURE

- Broadband Operation
- Low Noise & Low Back Reflection



SPECIFICATION

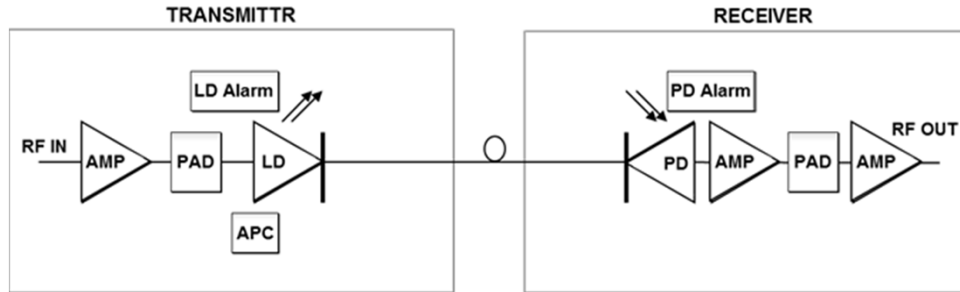
Parameter	Unit	Item			Remarks
		Min.	Typ.	Max.	
Frequency Range	500~1800KHz, 500KHz~230MHz, 50~500MHz, 50~1000MHz, 88~2200MHz, 88~2700MHz, 380~2700MHz				
Optical Output Power	dBm	2	-	7	
Wave Length	nm	1300	1310	1320	
RF Gain	dB	-3.5	0	+3.5	
Gain Flatness	dB(p-p)	-	-	4	
VSWR	-	1.5:1			
IP3 (0dBm/tone)	dBm	+25	-	-	
Output Noise Floor	dBm/Hz	-	-	-130	
Alarm	LD	dBm	-	-3	Normal High
	PD	dBm	-	-15	
Current	Transmitter	mA	-	-	350
	Receiver	mA	-	-	350
Connector	FC/APC or SC/APC, 9Pin D-sub, SMA(f)				

INTERFACE DESCRIPTION

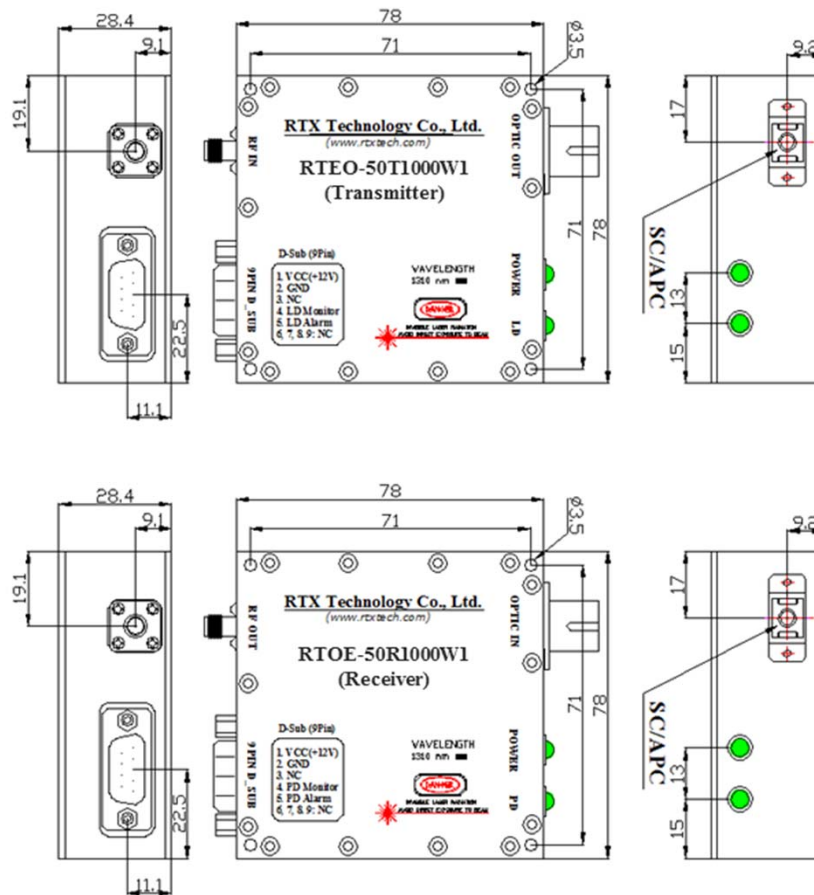
Pin Number	Specification		Remark
	Master	Slave	
1	+12V	+12V	Can be Customized
2	GND	GND	
3	NC	NC	
4	LD Monitor	PD Monitor	Alarm Type: Open Collector Normal- High, Alarm- Low
5	LD Alarm	PD Alarm	
6	NC	NC	
7	NC	NC	
8	NC	NC	
9	NC	NC	

Optic Transmitter & Receiver

FUNCTIONAL BLOCK DIAGRAM



DRAWING



Fiber Optic Coupler

SUMMARY OF FEATURE

- Low Excess Loss & High Performance
- Good Uniformity
- Wide Wavelength Range
- for Optical Repeater System
- for Local Area Network

CWDM / WDM

PN	Port	Insertion Loss(dB)	Isolation (dB)	Feature
OC-T3CW	1310	1.3	30	
	1330	1.2	15	
	15xx	0.7	17	
OC-T2SW	1310	0.7	17	
	15xx	0.7	17	

* Node Length: 500mm

TAB

PN	Port	Insertion Loss(dB)	Feature
OC-WC82	20%	7.9	
	80%	1.2	
OC-WC73	30%	6.0	
	70%	1.9	
OC-WC64	40%	4.7	
	60%	2.7	
OC-WC55	50%	3.6	
	50%	3.6	

* Node Length: 500mm

LD(Optic Laser Diode)

SUMMARY OF FEATURE

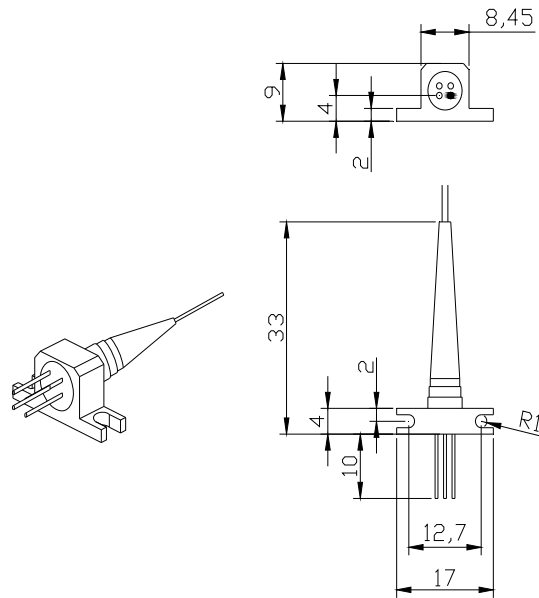
- 1.31um/1.55um FD-LD or 1.27um to 1.61um DFB-LD(20nm Spacing)
- 2.3GHz Bandwidth
- Single-mode or Multi-mode Fiber Pigtailed with Optional Connector
- Customizing Design According to Customer Request
- For Local Area Network and Optical Repeater System

MODEL

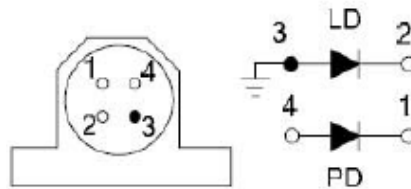
PN	Feature
LD1310	<p>Unit : mm</p> <p>500</p> <p>SC/APC</p> <p>LD 1310</p>
LD1330	<p>Unit : mm</p> <p>500</p> <p>SC/APC</p> <p>LD 1330</p>
LD1510	<p>Unit : mm</p> <p>500</p> <p>SC/APC</p> <p>LD 1510</p>
LD1530	<p>Unit : mm</p> <p>500</p> <p>SC/APC</p> <p>LD 1530</p>
LD1550	<p>Unit : mm</p> <p>500</p> <p>SC/APC</p> <p>LD 1550</p>
LD1570	<p>Unit : mm</p> <p>500</p> <p>SC/APC</p> <p>LD 1570</p>
LD1590	<p>Unit : mm</p> <p>500</p> <p>SC/APC</p> <p>LD 1590</p>

LD(Optic Laser Diode)

MECHANICAL DRAWING



[4 pin Coaxial Package with Outer Diameter $7.0 \pm 0.1 \text{ mm}$]



[Bottom View]

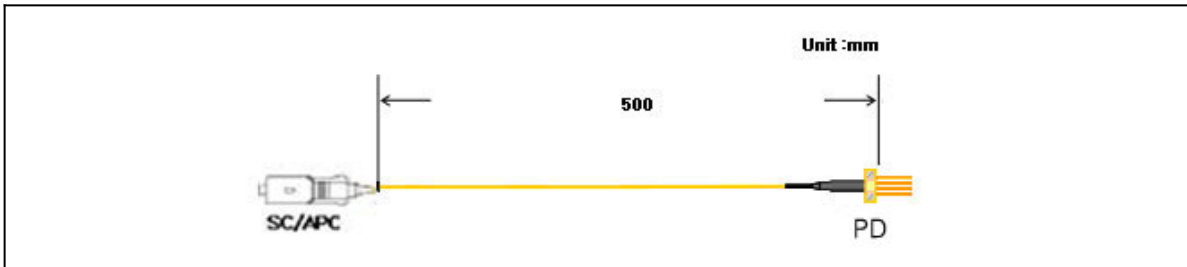
Pin No	Description
1	PD Cathode
2	LD Cathode
3	Case/LD Anode
4	PD Anode

PD(Optic Photo Diode)

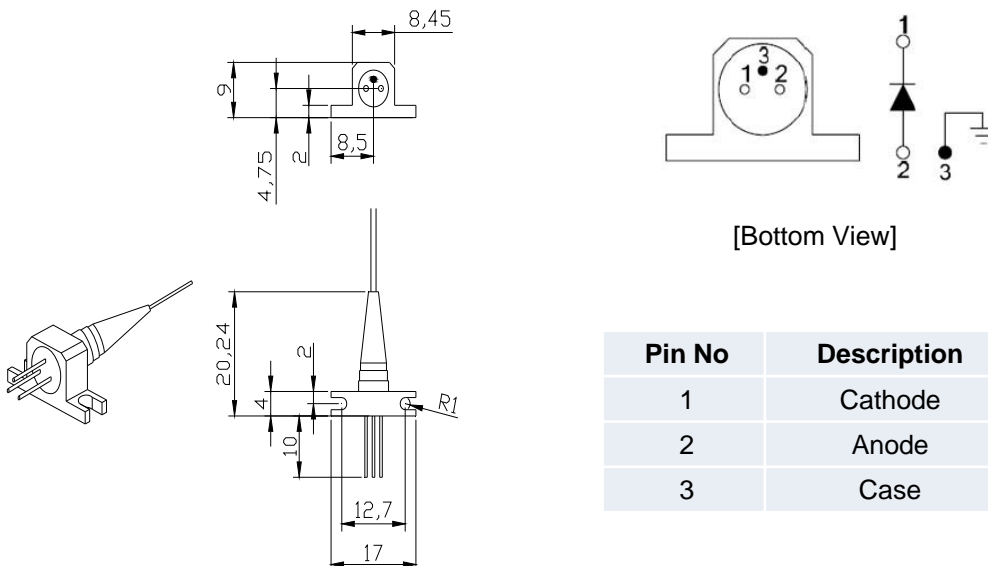
SUMMARY OF FEATURE

- InGaAs PIN Photodiode, 2.3GHz Bandwidth
- Operation at 910nm~1650nm
- High Responsibility, Low Dark Current and Low Capacitance
- Maximum Input Optical Overload +10mW
- Customizing Design According to Customer Request
- For Local Area Network and Optical Repeater System

STRUCTURE



MECHANICAL DRAWING



Pin No	Description
1	Cathode
2	Anode
3	Case

[3 pin Coaxial Package with Outer Diameter 7.0±0.1mm]

■ Fiber Optic Product

LD + PD + WDM + Optical Cable Assembly

SUMMARY OF FEATURE

- Low Excess Loss and High Performance
- Good Uniformity
- Coupling Ratio can be customized
- Optional Pre-connected Output
- Wide Wavelength Range
- For Local Area Network and Optical Repeater System

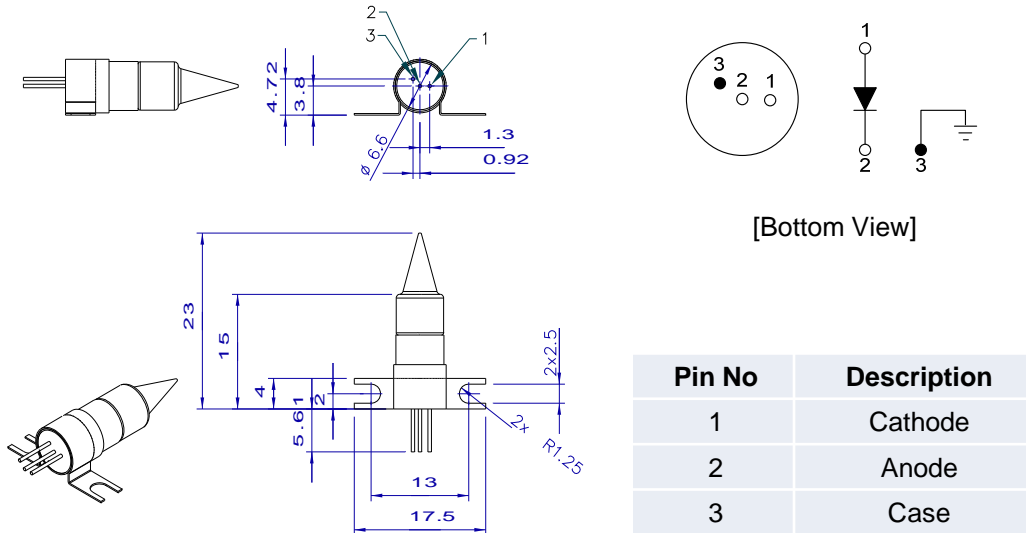
MODEL

PN	Feature
OC-T2WM	<p>Diagram of OC-T2WM assembly. Dimensions: 350mm total length, 54±2mm distance from ferrule to WDM, 300mm distance from WDM to LD, 300mm distance from WDM to PD. Components: SC/APC input, 3.6mm ferrule, WDM, LD (1310nm), PD, LD (1510nm).</p>
OC-T2WSA	<p>Diagram of OC-T2WSA assembly. Dimensions: 350mm total length, 54±2mm distance from ferrule to WDM, 300mm distance from WDM to PD, 300mm distance from WDM to LD. Components: SC/APC input, 3.6mm ferrule, WDM, PD, LD (1510nm).</p>
OC-T2WSB	<p>Diagram of OC-T2WSB assembly. Dimensions: 350mm total length, 54±2mm distance from ferrule to WDM, 300mm distance from WDM to PD, 300mm distance from WDM to LD. Components: SC/APC input, 3.6mm ferrule, WDM, PD, LD (1530nm).</p>
OC-T2WSC	<p>Diagram of OC-T2WSC assembly. Dimensions: 350mm total length, 54±2mm distance from ferrule to WDM, 300mm distance from WDM to PD, 300mm distance from WDM to LD. Components: SC/APC input, 3.6mm ferrule, WDM, PD, LD (1550nm).</p>

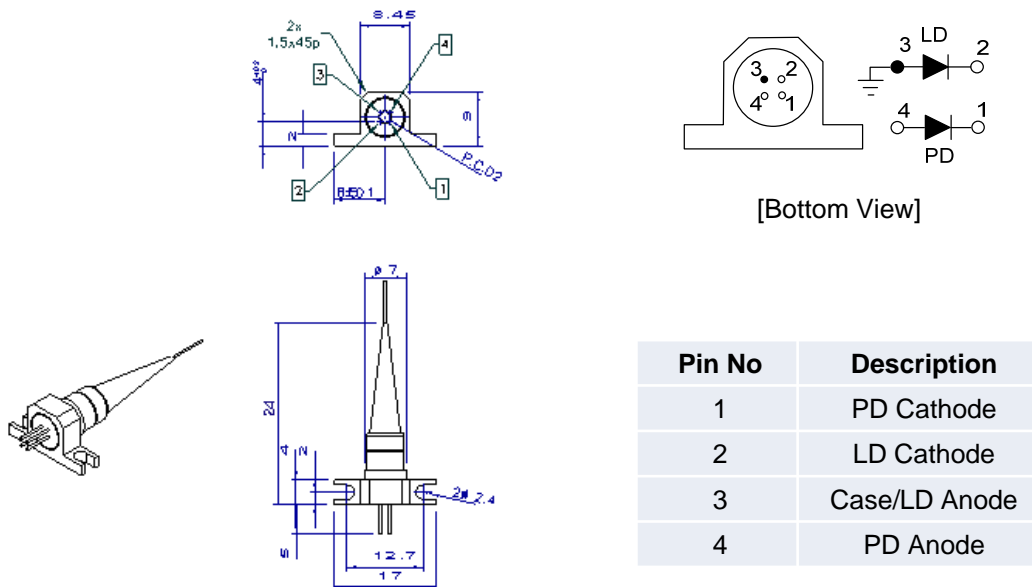
■ Fiber Optic Product

LD + PD + WDM + Optical Cable Assembly

MECHANICAL DRAWING



[3 pin coaxial TO package with outer diameter 7.0±0.1mm]



[4 pin coaxial package with outer diameter 7.0±0.1mm]