2.5 Gbps APD/TIA Fiber Pigtail Receiver

Key Features

- **Case grounded hermetic five-pin TO-46 coaxial package**
- **Separate APD and TIA bias inputs, allowing optimization of operating points and noise immunity**
- **-40 to +85°C operating temperature range with -34 dBm typical sensitivity**

Applications

- Passive Optical Networks and FTTx applications
  - GE-PON
  - GPON
- Access and Metro networks
  - SONET OC-48 LR-2 receivers

Compliance

- Telcordia qualified, front-illuminated InP based APD

The JDSU RXA M DPGX 088 XX-000 series fiber pigtail receivers incorporate a 60-front-illuminated avalanche photodiode (APD) packaged with a transimpedance amplifier (TIA) and a single-mode fiber pigtail, designed to operate up to 2.5 Gbps.

The RXA M DPGX 088 XX-000 series receivers are assembled in a rugged coaxial fiber pigtail package with a choice of connector type. Standard choices for connector type LC and FC/SC with SPC/APC end faces are available.

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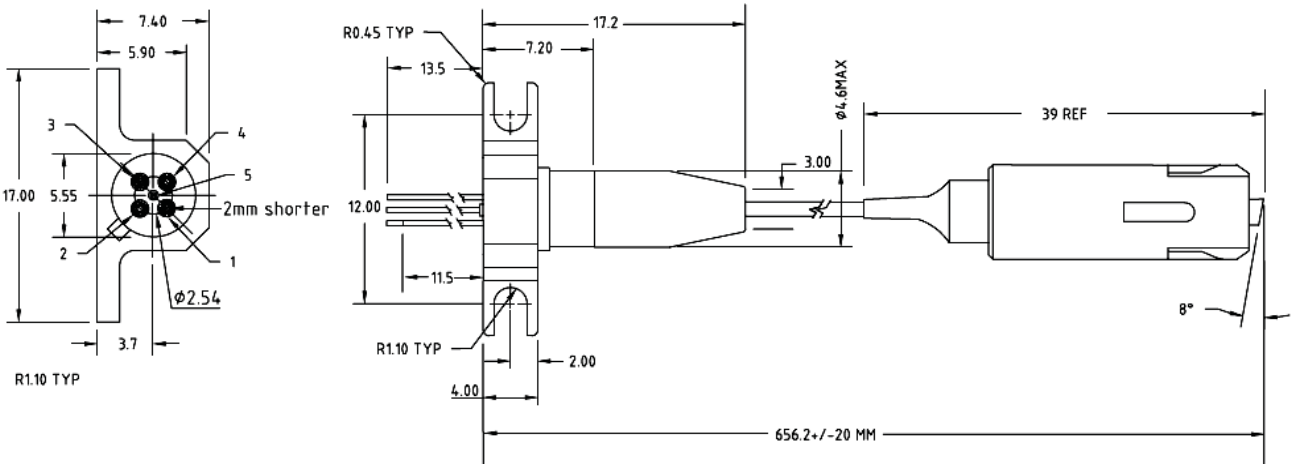
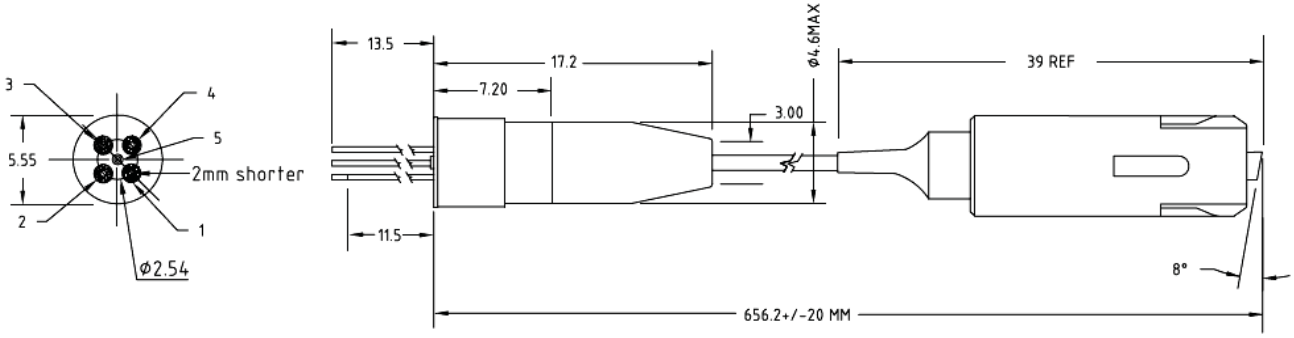
Dimensions Diagram | (Specifications in mm unless otherwise noted.)

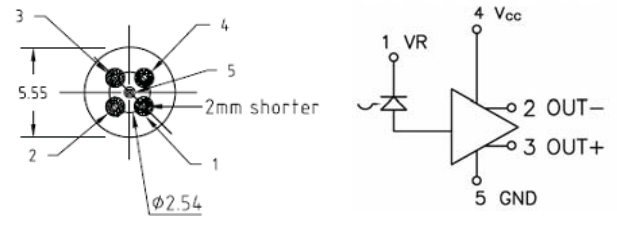
Standard, SC/APC connector



Without bracket, SC/APC connector



Electrical Schematics



Note: Compared with other pins, pin #1 has been shorted by 2 mm for orientation.

Pinout

Pin	Symbol	Description
1	VR	APD bias
2	OUT-	Negative output
3	OUT+	Positive output
4	Vcc	TIA bias
5	GND	Case ground

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Absolute Maximum Ratings

Parameter	Rating
Storage temperature	-40 to +85°C
Operating case temperature (T_{op})	-40 to +85°C
APD voltage supply (V_{cc})	V_{br} V
APD reverse current	5 mA
APD forward current	10 mA
ESD threshold (HBM)	300 V
Maximum incident optical power	+5 dBm

Note: All specifications are at T_{op} = 25°C unless otherwise stated

Specifications

Parameter	Conditions	Minimum	Typical	Maximum
TIA supply voltage		3.0 V	3.3 V	3.6 V
TIA current	V_{cc}=3.3 V, T_{op}=-40 to +85°C	-	48 mA	59 mA
Modulation bandwidth (-3 dB)	Pin = -30 dBm, Ref=200 MHz, single-ended, V_{APD}=V_{br}-2 V	1.8 GHz	2.0 GHz	-
AC transimpedance	Pin = -30 dBm, f=1.2 GHz, single-ended	1.15 KΩ	1.80 KΩ	2.35 KΩ
Output impedance		40 Ω	50 Ω	60 Ω
Dark current	V_{APD}=V_{br}-2 V	-	-	20 nA
Sensitivity	2.488 Gbps, NRZ, PRBS=2^{23-1}, BER=10^{-10}, T_{op}=-40 to +85°C, ER >10 dB	-	-34 dBm	-32 dBm
Responsivity	Pin=1 uW, V_{APD}=V_{br}-2 V	-	7.7 A/W	-
Overload	2.488 Gbps, NRZ, PRBS=2^{23-1}, BER=10^{-10}, T_{op}=-40 to +85°C, ER >10 dB	0 dBm	-	-
APD breakdown voltage	I_r=10 μA	40 V	51 V	60 V
V_{br} temperature coefficient	-40 to +85°C	0.1%/°C	-	0.3%/°C
Optical insertion loss	For connector	-	-	0.5 dB
Optical return loss		-	-	-30 dB

Note: All specifications are at T_{op} = 25°C @1550 nm,TIA supply voltage=3.3 V, beginning of life, unless otherwise stated

Electrostatic Discharge (ESD)

ESD protection is imperative. Use of grounding straps, antistatic mats, and other standard ESD protective equipment is required when handling or testing a junction photodiode. Fiber pigtail should be handled with less than 10 N pull and with bending radius greater than one inch. Soldering temperature of the leads should not exceed 260°C for more than 10 seconds.

Ordering Information

For more information on this or other products and their availability, please contact your local JDSU account manager or JDSU directly at 1-800-498-JDSU (5378) in North America and +800-5378-JDSU worldwide, or via e-mail at customer.service@jdsu.com.

Sample: RXA M DPG1 088 00-000

RXA M DPG □ 088 □□-000

Code	Connector
1	FC/SPC connetor
2	SC/SPC connetor
3	LC/SPC connetor
4	FC/APC connetor
5	SC/APC connetor
6	LC/APC connetor

Code	Package
00	Without bracket
01	With MB14 bracket