High Speed InGaAs Photodetector Receptacle Modules

ETX 100

Key Features

- **Electro-optical**
  - **High responsivity at 1310 and 1550 nm**
  - **Bandwidth greater than 1 GHz**
  - **High sensitivity**
- **Packaging**
  - **Small surface area, LC receptacle for PC boards**
  - **FC coaxial receptacle for panel mounts**
  - **Direct-mating SC receptacle for PC boards or panel mounts**

Applications

- Fiberoptics telecommunication networks
- Digital receivers
- Optical interconnects
- Test and measurement
- Datacom
- LAN

The ETX 100Rxx series are high speed receptacled photodiode modules designed primarily for use in optical communications applications in which high speed and reliability are critical. These modules feature bandwidths of at least 1 GHz and are designed for peak wavelength response at 1300 and 1550 nm. The connector receptacle designs permit mounting on PC boards or back planes. Each of the four modules making up the ETX 100Rxx series incorporates a 100 µm diameter InGaAs PIN photodiode mounted in an industry standard, precision connector receptacle which assures excellent mating repeatability. Standard receptacles available include LC, FC, and SC. These modules will accept either Single Mode or Multi Mode connectorized fiber.

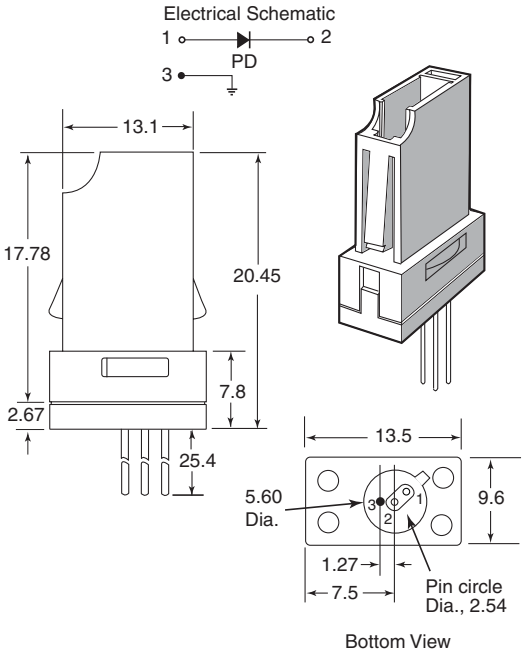
The ETX 100 RLC is mounted in an LC receptacle and is designed primarily to provide a high performance package for telecommunication and datacom applications with reduced surface density and easier mounting procedures. This next generation small form factor (The LC receptacle is respectively, 52% and 34%, smaller in packaging surface density than the FC and SC receptacles) is half the footprint required for LAN interfaces, thereby reducing costs and increasing packing density. Like the RSC, the ETX 100 RLC mates directly with the connector and does not require fastening of the connector to assure mating.

All receptacled detector modules are qualified to Telecordia and MIL standards.

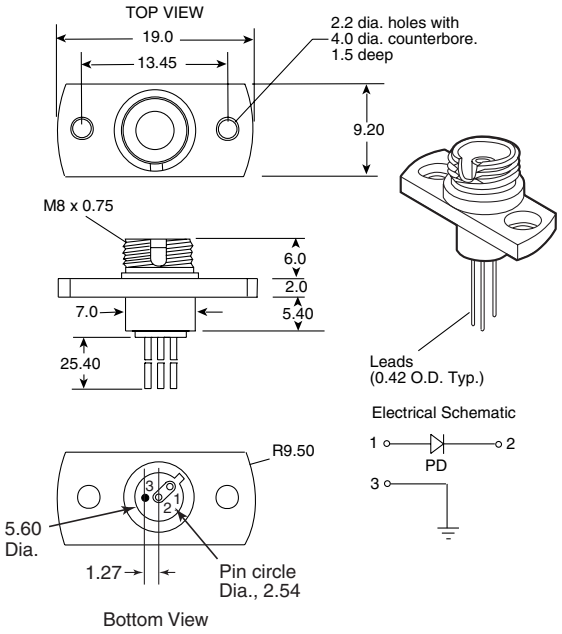
Dimensions Diagram

(Specifications in mm unless otherwise noted.)

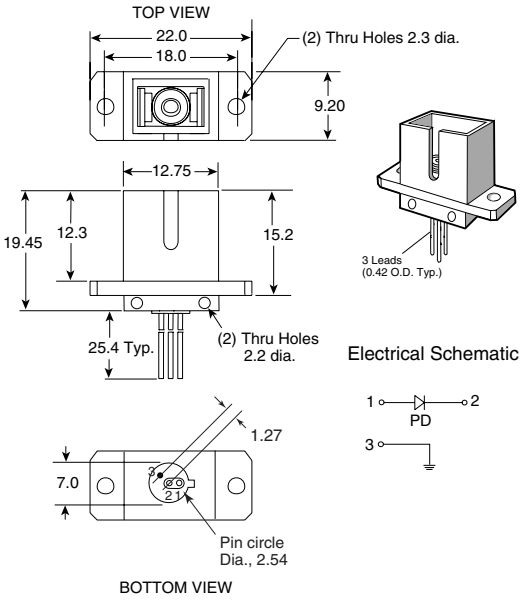
ETX 100RLC



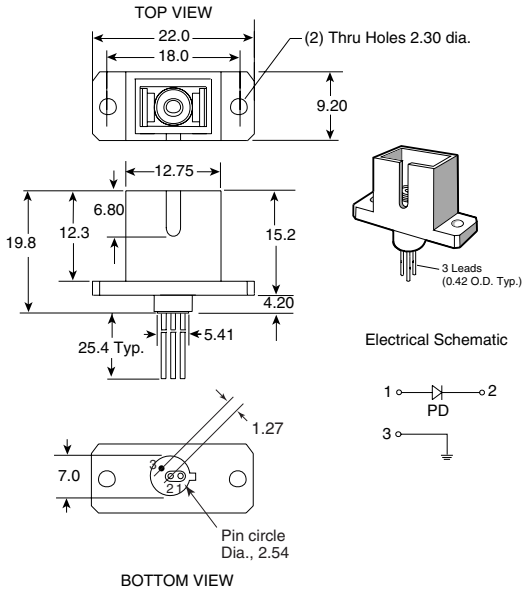
ETX 100RFC2



ETX 100RSC-DM



ETX 100RSC-FM



Note: Critical dimensions meet NTT specifications.
Other dimensions subject to revision.

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Figure 1

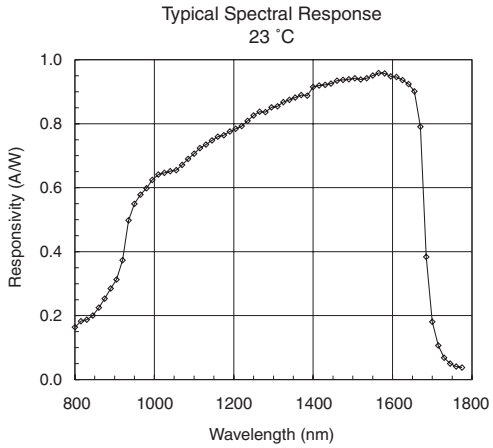


Figure 2

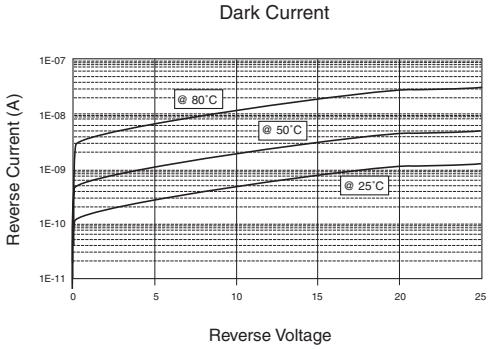


Figure 3

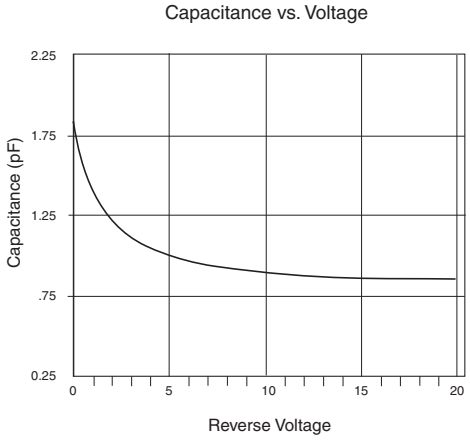
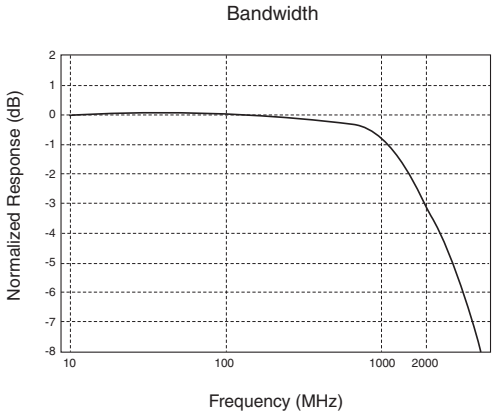


Figure 4



Specifications

(Temperature = 25°C, V_R = 5 V unless noted.)

Parameter	Conditions		Specification
Active diameter		Typical	100 µm
Responsivity	λ = 1310 nm[1]	Minimum	0.65 A/W
		Typical	0.75 A/W
	λ = 1550 nm[1]	Minimum	0.70 A/W
Dark current		Typical	0.30 nA
		Maximum	1.0 nA
Capacitance[2]		Typical	1.1 pF
		Maximum	1.25 pF
Bandwidth[3]		Typical	1.5 GHz
Rise time[4]		Typical	250 ps

1. Measured with 50 µm, 0.2 N.A., graded index fiber.
2. Measured with case grounded.
3. -3 dB point into a 50 Ω load.
4. R_{LOAD} = 50 Ω.

Maximum Ratings

Parameter		Specification
Forward current[1]	Maximum	10 mA
Reverse current[2]	Maximum	10 mA
Reverse voltage	Maximum	25 V
Operating case temperature	Minimum	-40°C
	Maximum	85°C
Storage temperature	Minimum	-40°C
	Maximum	85°C

1. Under forward bias, current at which device may be damaged.
2. Under reverse bias, current at which device may be damaged.

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: ETX 100 RLC

ETX 100 + □

Code	Package
RLC	LC receptacle
RFC2	FC receptacle with 2-hole flange
RSC-DM	SC receptacle, dual-mount (panel & board)
RSC-FM	SC receptacle, front-mount (panel only)

Precautions for Use

ESD protection is imperative. Use of grounding straps, anti-static mats, and other standard ESD protective equipment is required when handling or testing an InGaAs PIN or any other junction photodiode. Fiber pigtails should be handled with less than 10 N pull and with bending radius greater than 1 inch. Soldering temperature of the leads should not exceed 260 °C for more than 10 seconds.

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