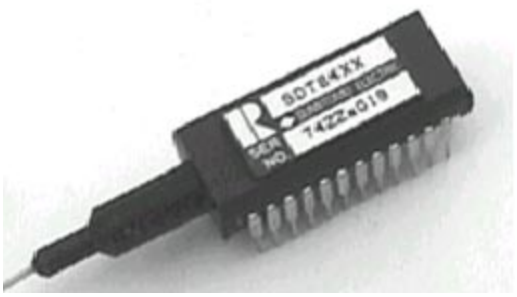


Technical Specification
for
2.5Gbps Fiber Optic Receiver Module

SDT8408-R_-QN

☐ 155.52Mb/s	☐ 622.08Mb/s	☑ other ~2.5Gbps Intra Office
☑ Short Haul Intermediate Reach	☐ Long Haul Long Reach	☑ other Short Reach
☑ Single 5.0 V	☐ Single 3.3 V	☐ other
☑ 1.3 µm	☐ 1.55 µm	☐ other
☐ Transmitter	☑ Receiver	☐ Transceiver
	(☑ 2R / ☐ 3R)	(☐ 2R / ☐ 3R)

SUMITOMO ELECTRIC

SUMITOMO Electric reserves the right to make changes in the specification described hereinafter without prior notice.

#Safety Precaution Symbols This specification uses various picture symbols to prevent possible injury to operator or other persons or damage to properties for appropriate use of the product. The symbols and definitions are as shown below. Be sure to be familiar with these symbols before reading this specification.

⚠ Warning	Wrong operation without following this instruction may lead to human death or serious injury.
⚠ Caution	Wrong operation without following this instruction may lead to human injury or property damage.

Example of picture symbols ❗ indicates prohibition of actions. Action details are explained thereafter.

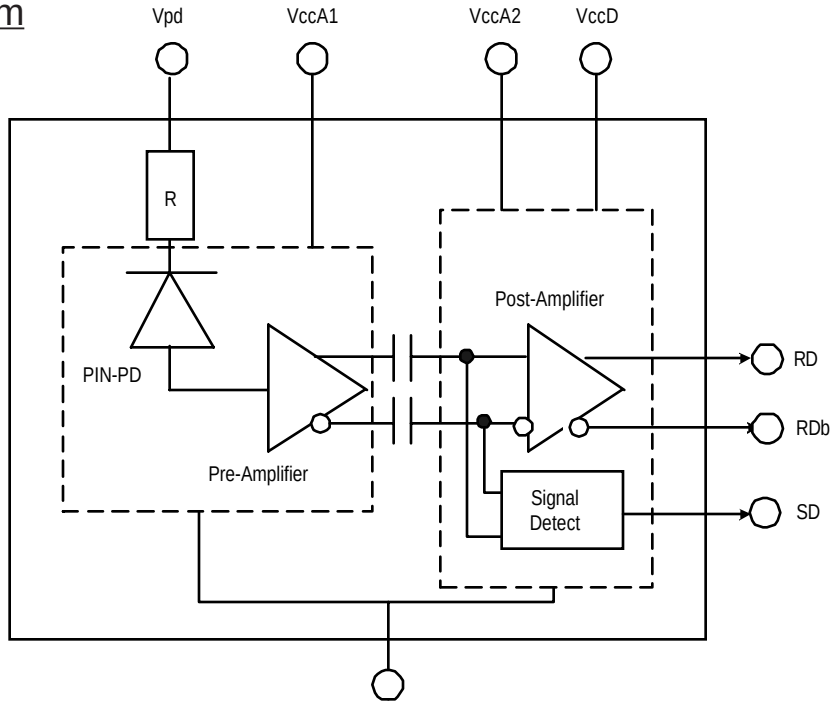
⃠ indicates compulsory actions or instructions. Action details are explained thereafter.

1. General

SDT8408-R_-QN is a compact and high performance digital fiber optic receiver module ideally designed for high speed data communication systems or telecommunication transmission systems.

* Data Rate	155Mbps ~ 2.5Gbps
* Power Supply Voltage	Single +5.0V
* Electrical Interface	ECL for Data, CMOS for Signal Detect
* Photo Diode	InGaAs PIN-PD
* Sensitivity	0 to -18 dBm
* Connector Interface	SC or FC/PC connector
* Pin Configuration	24 Pin Dual in Line

2. Block Diagram



3. Package Dimension

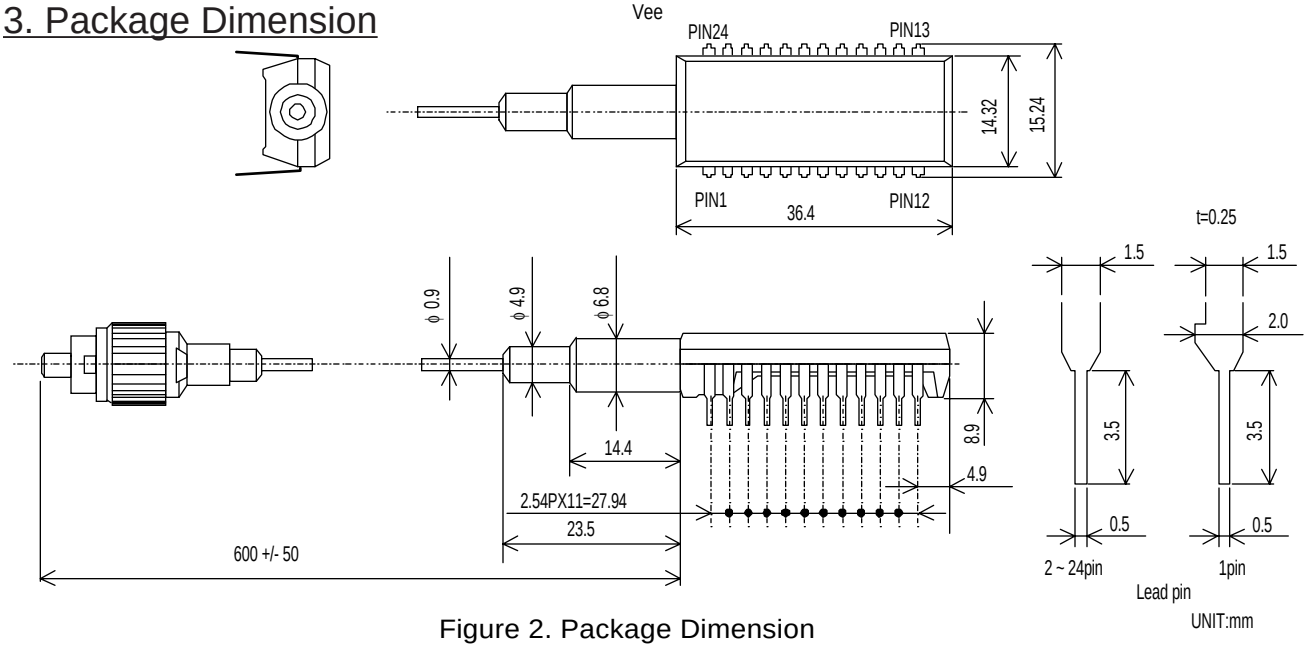


Figure 2. Package Dimension

⚠Caution

Do not disassemble this product. Otherwise, failure, electrical shock overheating or fire may occur.
Handle the lead pin carefully. Use assisting tools or prospective aids as required. A lead pin may injure skin or human body

4. Pin Assignment

Function	Symbol	No.		No.	Symbol	Function
Non Connection.	NC	1		24	NC	Non Connection.
Non Connection.	NC	2		23	NC	Non Connection.
Signal Detect (SD)	SD	3		22	NC	Non Connection.
Vee=GND for Vcc=+5.0V	Vee	4		21	Vee	Vee=GND for Vcc=+5.0V
Vee=GND for Vcc=+5.0V	Vee	5		20	Vpd	Vpd=+5.0V for Vee=GND
Vee=GND for Vcc=+5.0V	Vee	6		19	Vee	Vee=GND for Vcc=+5.0V
Vee=GND for Vcc=+5.0V	Vee	7		18	VccA1	VccA1=+5.0V for Vee=GND
Data Output (Negative)	RDb	8		17	VccA2	VccA2=+5.0V for Vee=GND
Data Output (Positive)	RD	9		16	Vee	Vee=GND for Vcc=+5.0V
VccD=+5.0V for Vee=GND	VccD	10		15	Vee	Vee=GND for Vcc=+5.0V
Vee=GND for Vcc=+5.0V	Vee	11		14	Vee	Vee=GND for Vcc=+5.0V
Vee=GND for Vcc=+5.0V	Vee	12		13	Vee	Vee=GND for Vcc=+5.0V

*NC pins are not connected to the internal circuit.
*NC pins should be left open for additional functions in the future
*VccA1, VccA2, VccD and Vpd are not connected each other internally.
All the Vcc and Vpd pins should be connected to the appropriate voltages.

5. Absolute Maximum Ratings

Parameter	Symbol	min.	Max	Unit	Note
Storage Case Temperature	Ts	-40	85	°C	1
Operating Case Teperature	Tc	-5	70	°C	1
Supply Voltage	VccA1-Vee VccA2-Vee VccD-Vee Vpd-Vee	0.0	6.0	V	2
Lead Soldering (Temperature) (Time)			260 10	°C sec.	3

Note 1. No condensation allowed.
2. VccA1, VccA2, VccD and Vpd>Vee, Vee=GND
3. Measured on lead pin at 2mm (0.079in.) off the package bottom

⚠ Warning

Use the product with the rated voltage described in the specification. If the voltage exceeds the maximum rating, overheating or fire may occur.

⚠ Caution

Do not store the product in the area where temperature exceeds the maximum rating, where there is too much moisture or dampness, where there is acid gas or corrosive gas, or other extreme conditions. Otherwise, failure, overheating or fire may occur.

6. Electrical Interface

(Unless otherwise specified, Vcc-Vee = 4.75 to 5.25 V and all operating temparature shall apply.)

Parameter		Symbol	min.	Typ.	Max.	Unit	Note
Supply Voltage		VccA1-Vee VccA2-Vee VccD-Vee Vpd-Vee	4.75	5.00	5.25	V	
Supply Current		Idrx		95	140	mA	1
Output Voltage	High	Vdoh	Vcc-1.10		Vcc-0.86	V	2, 4
of RD and RDb	Low	Vdol	Vcc-1.86		Vcc-1.62	V	2, 4
Output Voltage	High	Vsoh	2.40		Vcc		2
of SD	Low	Vsol	0		0.40		2
Rise / Fall Time of RD and RDb		Trd / Tfd		130		psec.	3, 4
Fall Time of SD		Tfs			100	psec.	2

Note 1. Output current is not included. 2488.32Mbps, PRBS2^23-1
2. VccA1, VccA2 , VccD and Vpd=+5.0V, Tc=25°C , Output load resistance Rl=50Ω to Vcc-2V for RD and RDb
3. 20~80%, Input capacitance and stray capacitance of measuring devices should be less tham 2pF
4. Refer to Figure 3.

7. Optical Interface

(Unless otherwise specified, Vcc-Vee = 4.75 to 5.25 V and all operating temparature shall apply.)

Parameter		Symbol	min.	Typ.	Max.	Unit	Note
Bit Rate Range		-	155.52		2500.0	Mbps	
Center Wavelength		-	1261		1580	nm	
Minimum Sensitivity		Pmin		-20.0	-18.0	dBm	1
OverLoad		Pmax	0.0			dBm	1
PD Sensitivity		Ipdrx	0.62		0.90	A / W	2
SD Level	Assert	Pa		-22.0		dBm	
	Deassert	Pd		-25.0		dBm	

Note 1. BER = 10^-9. Measured at 2488.32Mbps, PRBS2^23-1.
2. Optical Input Power : -18.0 ~ 0.0 dBm, Vpd=5.0V, Vee=GND

8. Relation between Received Optical Signal and Data Output

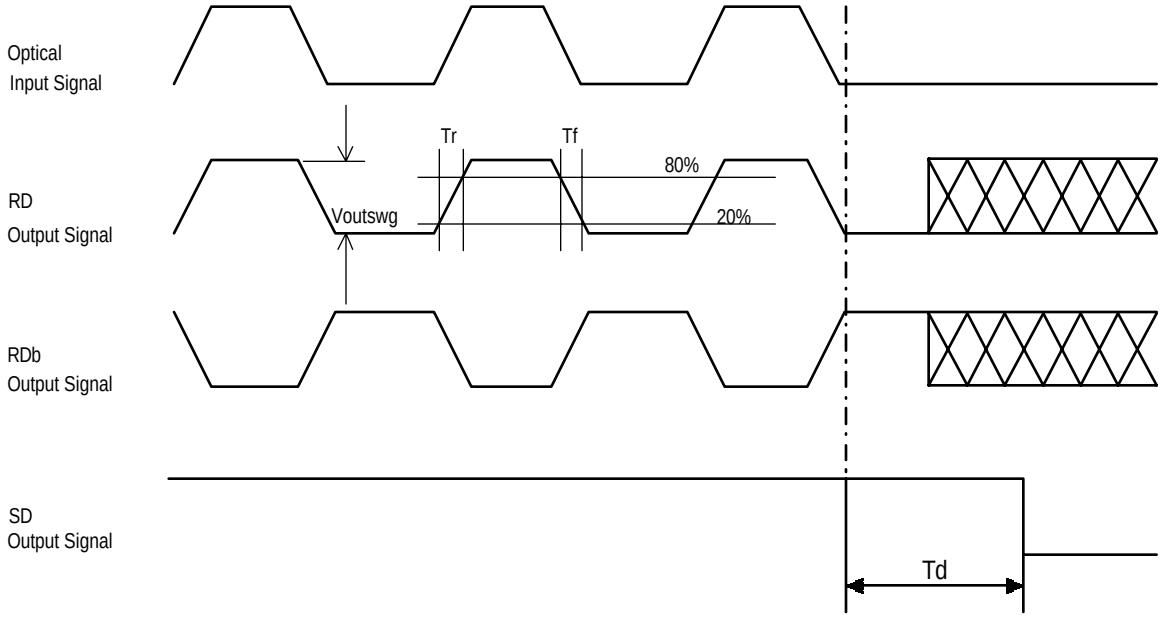


Figure 3 Output Signal Chart

9. Fiber Pigtail Specification

Parameter	Min.	Typ.	Max.	Unit	Note
Core Diameter		9.5		μm	
Cladding Diameter		125		μm	
Outer Diameter		0.9		mm	
Optical Cord Tensile Beak Strength			9.8	N	1
Bend Radius	30			mm	

Note 1. Strength between receiver body and optical fiber should be less than 9.8N

10. Recommended User Interface

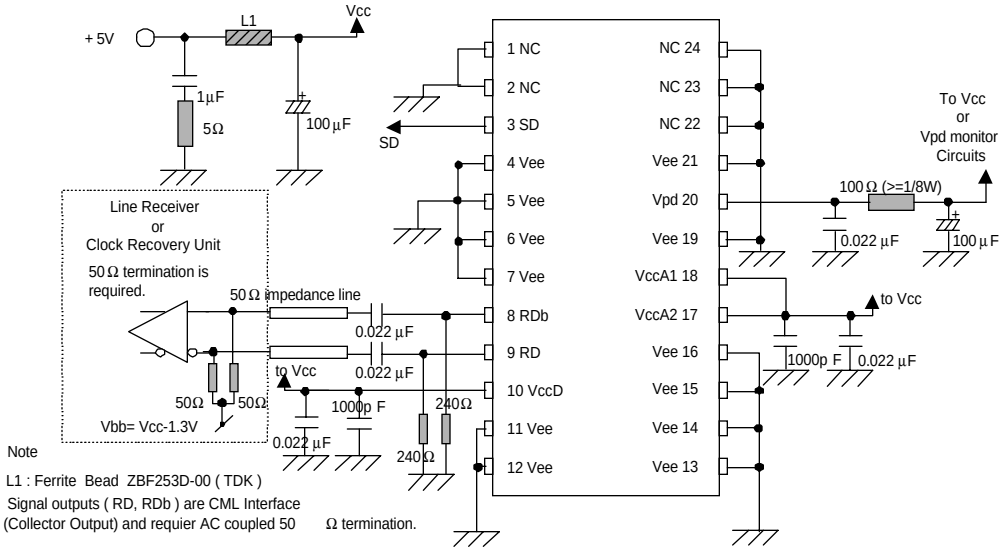


Figure 4. Recommeded User Interface

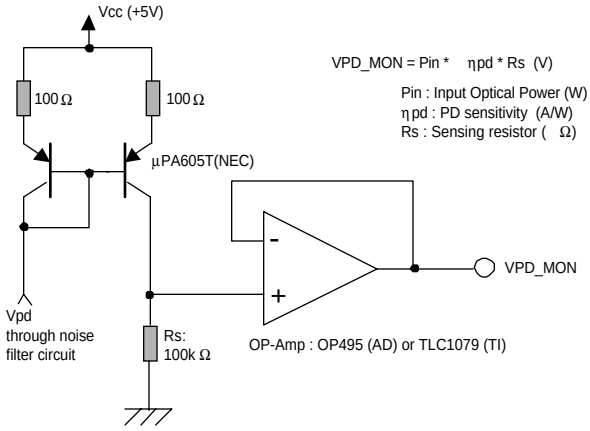


Figure 5. Example of Vpd monitor circuit

11. Ordering Information

Ordering Number	Connector type
SDT8408-RC-QN	SC Connector
SDT8408-RD-QN	FC/PC Connector

12. Other Precaution

Under such a strong vibration environment as in automobile, the performance and reliability are not guaranteed.

The governmental approval is required to export this product to other countries. To dispose of these components, the appropriate procedure should be taken to prevent illegal exportation.

This module must be handled, used and diposed of according to your company's safe working practice.

⚠Warning

Be sure to carry out correct soldering for connection to peripheral circuits in order to prevent contact failure or short-circuit.
Otherwise, a strong laser beam may cause eye injury, overheating or fire.

Do not put this product or components of this product into your mouth. This product contaions material harmful to health.

⚠Caution

Be sure to turn the power off when you touch this product connected to the printed circuit boards.
Otherwise, electric shock may occur.

Dispose this product or equipment including this product properly as an industrial waste according to the regulations.

13. For More Information

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