

**FIBER OPTIC RECEIVING MODULE
FOR DIGITAL AUDIO INTERFACE**

VSR5A/B

VITonet Co., Ltd.

<http://www.vitonet.co.kr>

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FOR DIGITAL AUDIO INTERFACE

VSR5A

FEATURES

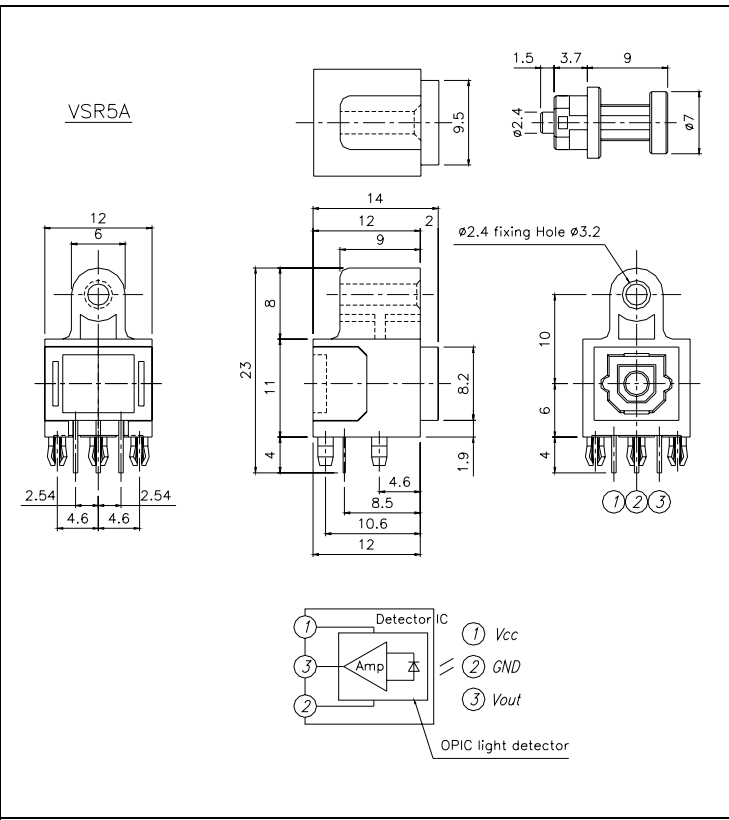
- ▶ Data Rate : 12Mbps, NRZ signal
- ▶ Directly connectable to demodulation IC for digital audio equipment

APPLICATIONS

- ▶ AC-3 amp
- ▶ PC-sound card
- ▶ MD player

OUTLINE DIMENSIONS

Unit [mm]



Unspecification tolerance : $\pm 0.3\text{mm}$

1. ABSOLUTE MAXIMUM RATINGS [Ta=25°C]

PARAMETER	SYMBOL	RATING	UNIT
Supply Voltage	Vcc	-0.5 ~ +7	V
High Level Output Current	I _{OH}	-1	mA
Low Level Output Current	I _{OL}	4	mA
Operating Temperature	T _{opr}	-20 ~ +70	°C
Storage Temperature	T _{stg}	-30 ~ +80	°C
Soldering Temperature ^[1]	T _{sol}	260	°C

Note [1] : Soldering time=5 seconds 2 times or less

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FEATURES

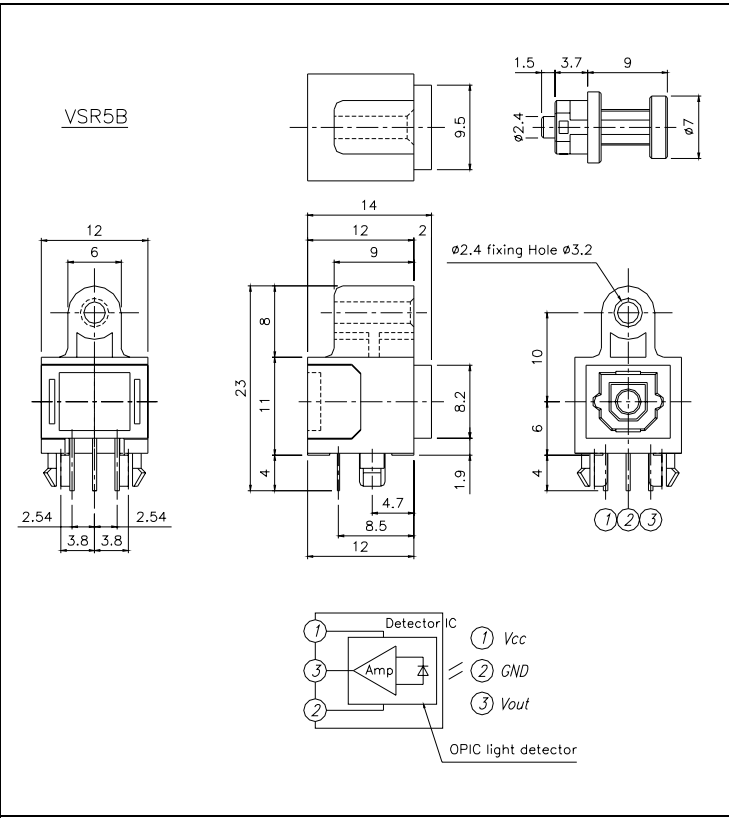
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OUTLINE DIMENSIONS

Unit [mm]



Unspecification tolerance : ±0.3mm

1. ABSOLUTE MAXIMUM RATINGS [Ta=25°C]

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Note [1] : Soldering time=5 seconds 2 times or less

2. ELECTRICAL AND OPTICAL CHARACTERISTICS [Ta=25°C]

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP.	MAX	UNIT
Operating Voltage	V _{CC}	-	4.75	5	5.25	V
Peak Sensitivity Wavelength	λ_p	-	-	700	-	nm
Maximum Input Optical Power for Receiving Unit	P _{C MAX}	Refer to Fig.1	-14.5	-	-	dBm
Minimum Input Optical Power for Receiving Unit	P _{C MIN}	Refer to Fig.1	-	-	-24	dBm
Dissipation Current	I _{CC}	Refer to Fig.2	-	10	40	mA
High Level Output Voltage	V _{OH}	Refer to Fig.3	3.5	4.0	-	V
Low Level Output Voltage	V _{OL}	Refer to Fig.3	-	0.1	0.4	V
Rise Time	t _r	Refer to Fig.3	-	15	30	ns
Fall Time	t _f	Refer to Fig.3	-	9	30	ns
Low→High Propagation Delay Time	t _{p LH}	Refer to Fig.3	-	-	100	ns
High→Low Propagation Delay Time	t _{p HL}	Refer to Fig.3	-	-	100	ns
Pulse Width Distortion	Δtw	Refer to Fig.3	-30	-	+30	ns
Jitter	Δtj	Refer to Fig.4 , P _c =-15dBm	-	1	30	ns
Operating Transfer Rate	T	-	-	-	12	Mbps
Transmission Distance	-	-	-	-	20	m

3. RELIABILITY

The Reliability of products shall be satisfied with items listed below.

Reliability level : 90%, LTPD :10%/20%

NO.	TEST ITEMS	TEST CONDITIONS	FAILURE JUDGEMENT CRITERIS	SAMPLES (n)
				DEFECTIVE (c)
1	High temp. and high humidity storage	Ta=40°C, 90%R.H 500H.	Each characteristic given in 2 Non. 4~10 must be within the following range.	n=22, c=0
2	High temp. storage	Ta=80°C, 500H.		n=22, c=0
3	Low temp. storage	Ta=-30°C, 500H		n=22, c=0
4	Temperature cycling	Ta=-30°C ~ +80°C (30min) (30min) 20 cycle test	U × 1.2 or less	n=22, c=0
5	High temp. operation life	Ta=60°C V _{CC} =5V, 500H.	L × 0.8 or more	n=22, c=0
6	Soldering heat	Ta=260±10°C 5 sec/2 times	U : Upper limit L : Lower limit	n=11, c=0
7	Terminal strength (Tension)	Weight : 500g 30 sec./each terminal		n=11, c=0
8	Terminal strength (Bending)	Weight : 250g 0° -90° -0° 2 times/each terminal		n=11, c=0
9	Shock	Acceleration : 100G Pulse width : 6ms X, Y, Z/3 times each		n=11, c=0
10	Vibration	Frequency range: 10~55Hz/sweep 1 min. Overall amplitude: 1.5mm X, Y, Z/2H, each		n=11, c=0
11	Repeated operation	500 times (fiber optics cable VITonet used)	Coupling force≤4kg, 0.6kg≤detaching force≤4kg	n=11, c=0

3.1 MEASUREMENT

In the test 7~11 above, to measure the characteristics, leave 2 hours at normal temperature and humidity after being tested.

Fig.1 Maximum Input Optical Power Level/Minimum Input Optical Power Level
Measuring Method of Receiving Unit

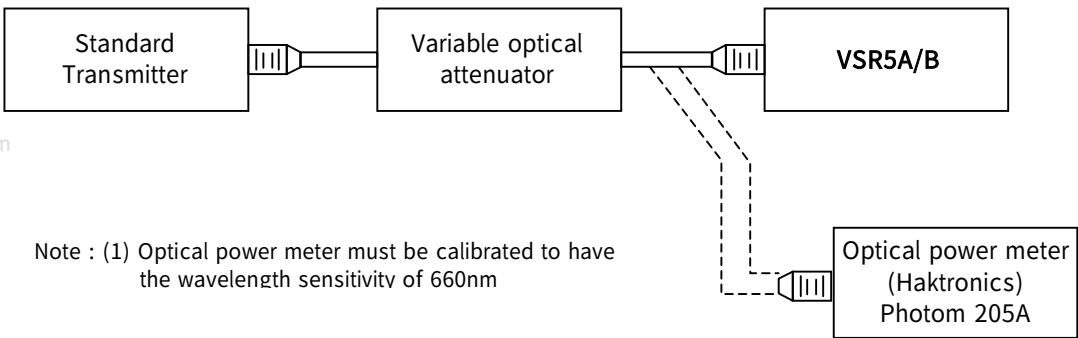


Fig.2 Measuring Method of Dissipation Current

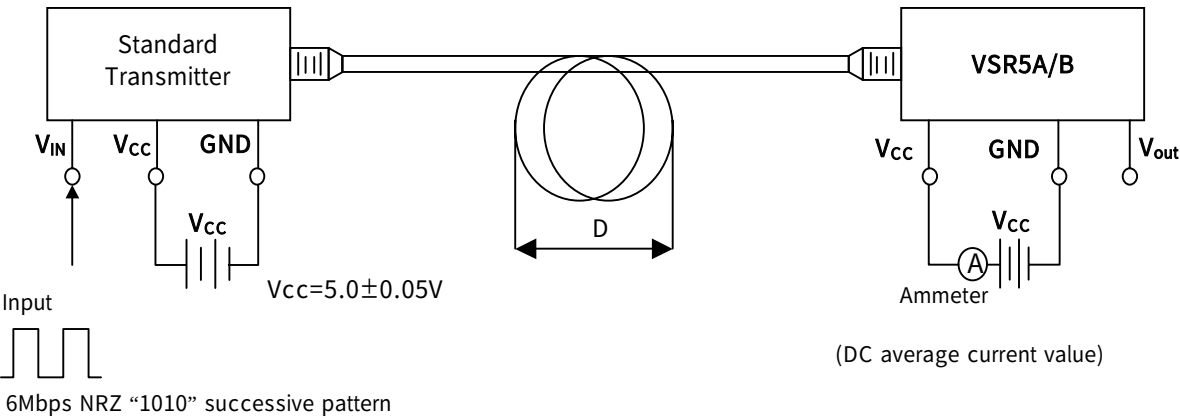


Fig.3 Measuring Method of Output Voltage and Pulse

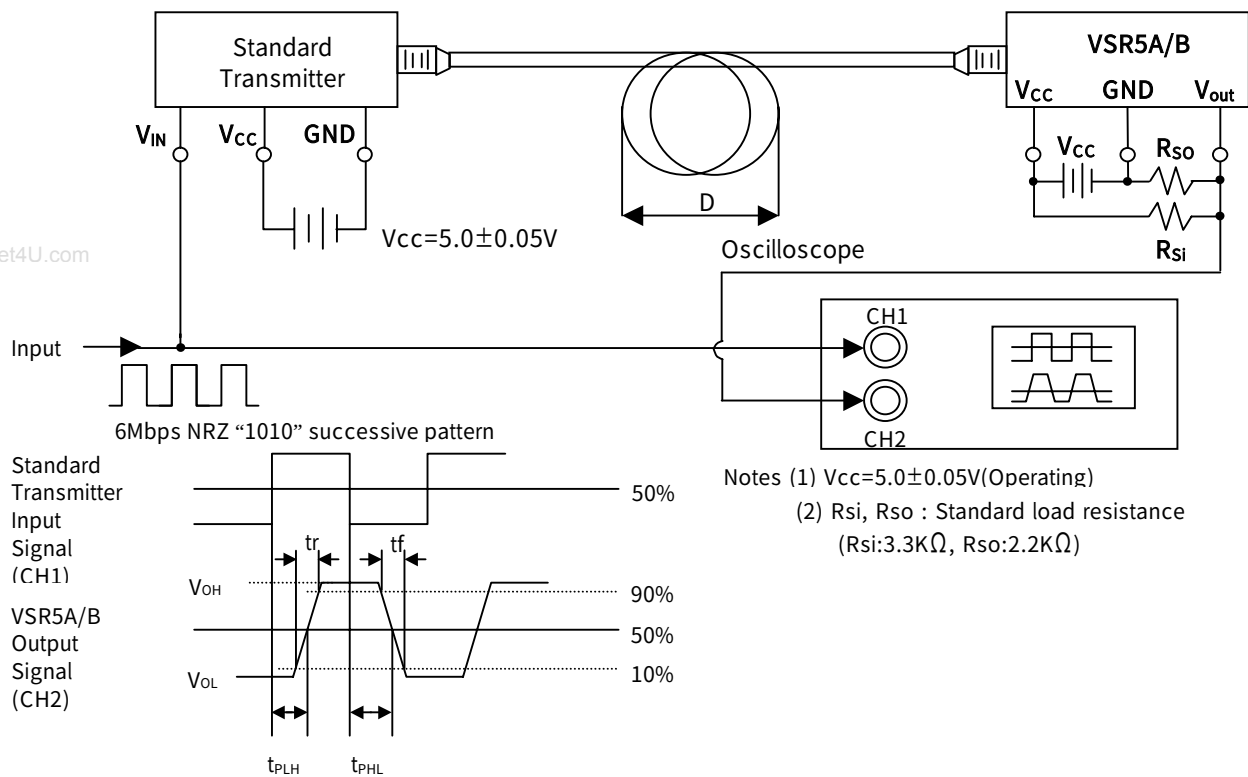
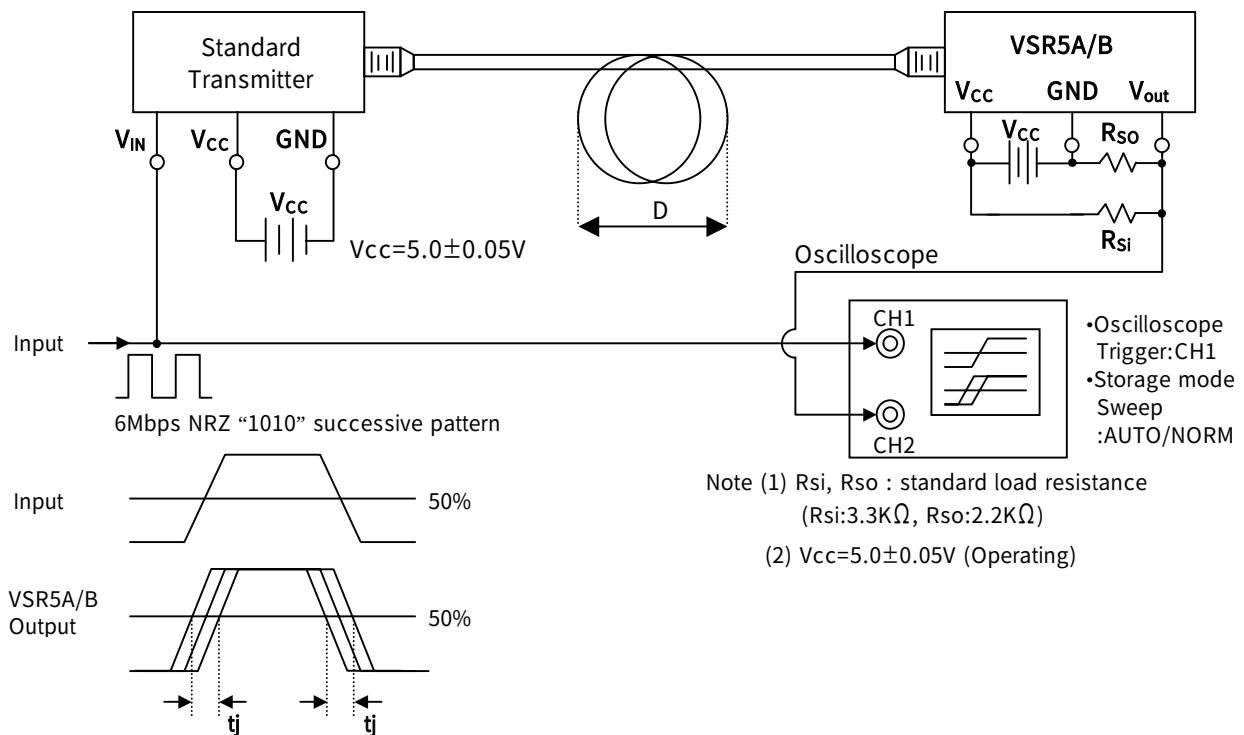


Fig.4 Measuring Method of Jitter



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