

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

**VSR5F**

---

**VITonet Co., Ltd.**

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

FIBER OPTIC RECEIVING MODULE  
FOR DIGITAL AUDIO INTERFACE

# VSR5F

**FEATURES**

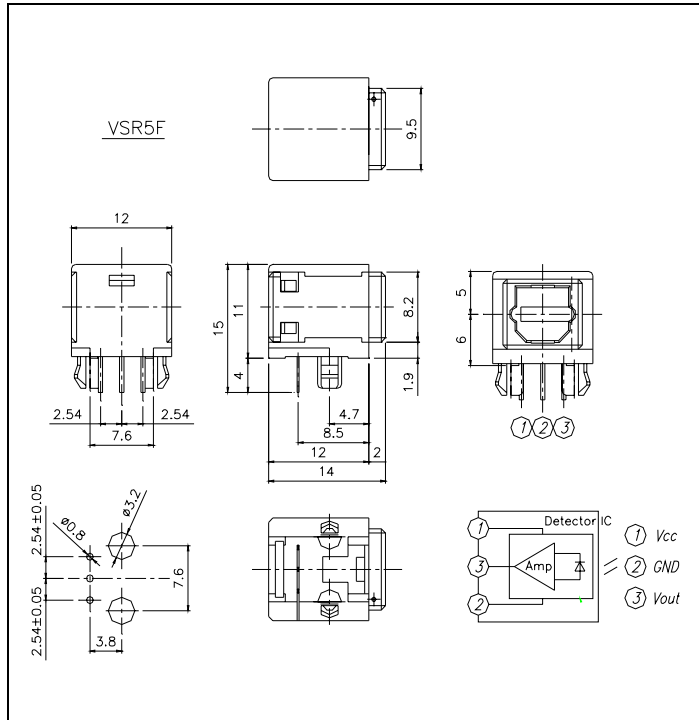
- Data Rate : 12Mbps, NRZ signal
- Directly connectable to demodulation IC for digital audio equipment

**APPLICATIONS**

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

**OUTLINE DIMENSIONS**

Unit [mm]



Unspecification tolerance : ±0.3mm

**1. ABSOLUTE MAXIMUM RATINGS [Ta=25 ]**

PARAMETER	SYMBOL	RATING	UNIT
Supply Voltage	Vcc	-0.5 ~ +7	V
High Level Output Current	I <sub>OH</sub>	-1	mA
Low Level Output Current	I <sub>OL</sub>	4	mA
Operating Temperature	T <sub>opr</sub>	-20 ~ +70	
Storage Temperature	T <sub>stg</sub>	-30 ~ +80	
Soldering Temperature <sup>[1]</sup>	T <sub>sol</sub>	260	

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

2. ELECTRICAL AND OPTICAL CHARACTERISTICS [Ta=25 ]

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP.	MAX	UNIT
Operating Voltage	V <sub>cc</sub>	-	4.75	5	5.25	V
Peak Sensitivity Wavelength	λ <sub>p</sub>	-	-	700	-	nm
Maximum Input Optical Power for Receiving Unit	P <sub>CMAX</sub>	Refer to Fig.1	-14.5	-	-	dBm
Minimum Input Optical Power for Receiving Unit	P <sub>CMIN</sub>	Refer to Fig.1	-	-	-24	dBm
Dissipation Current	I <sub>cc</sub>	Refer to Fig.2	-	10	40	mA
High Level Output Voltage	V <sub>OH</sub>	Refer to Fig.3	3.5	4.0	-	V
Low Level Output Voltage	V <sub>OL</sub>	Refer to Fig.3	-	0.1	0.4	V
Rise Time	t <sub>r</sub>	Refer to Fig.3	-	15	30	ns
Fall Time	t <sub>f</sub>	Refer to Fig.3	-	9	30	ns
Low High Propagation Delay Time	t <sub>pLH</sub>	Refer to Fig.3	-	-	100	ns
High Low Propagation Delay Time	t <sub>pHL</sub>	Refer to Fig.3	-	-	100	ns
Pulse Width Distortion	tw	Refer to Fig.3	-30	-	+30	ns
Jitter	t <sub>j</sub>	Refer to Fig.4 , P <sub>c</sub> =-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 , 90%R.H 500H.	Each characteristic given in 2 Non. 4~10 must be within the following range.  U × 1.2 or less  L × 0.8 or more  U : Upper limit  L : Lower limit	n=22, c=0
2	High temp. storage	Ta=80 , 500H.		n=22, c=0
3	Low temp. storage	Ta=-30 , 500H		n=22, c=0
4	Temperature cycling	Ta=-30 ~ +80 (30min) (30min) 20 cycle test		n=22, c=0
5	High temp. operation life	Ta=60 V <sub>cc</sub> =5V, 500H.		n=22, c=0
6	Soldering heat	Ta=260±10 5 sec/2 times		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

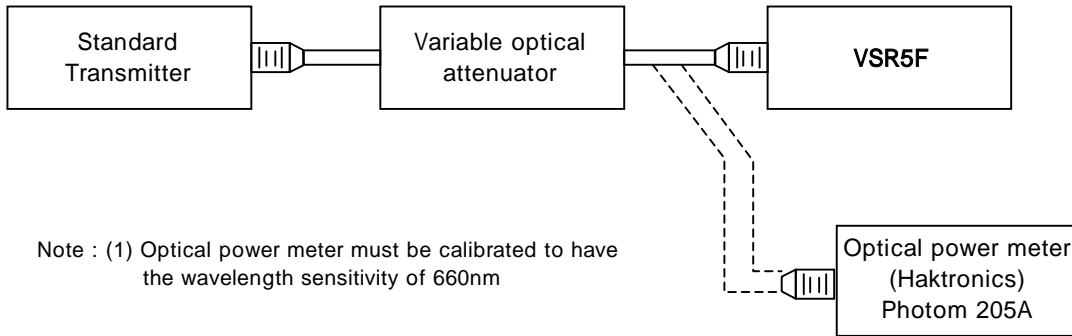


Fig.2 Measuring Method of Dissipation Current

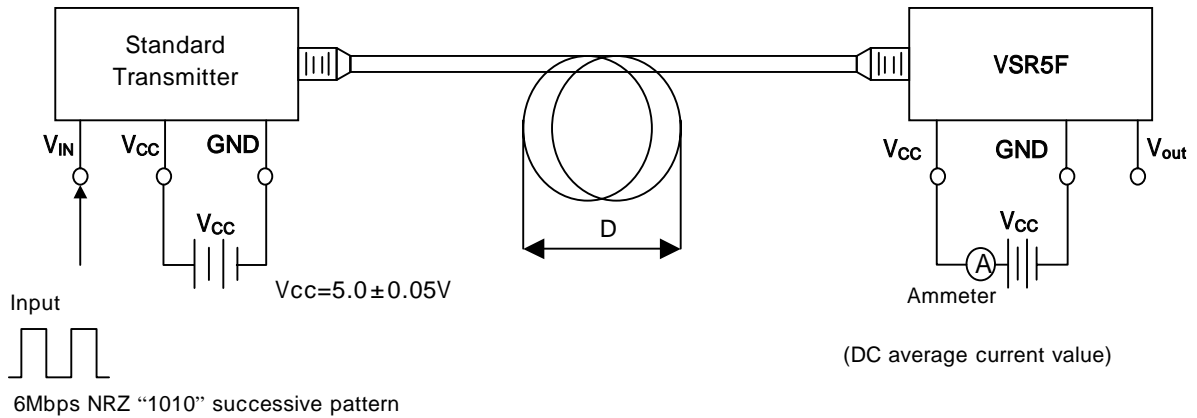


Fig.3 Measuring Method of Output Voltage and Pulse

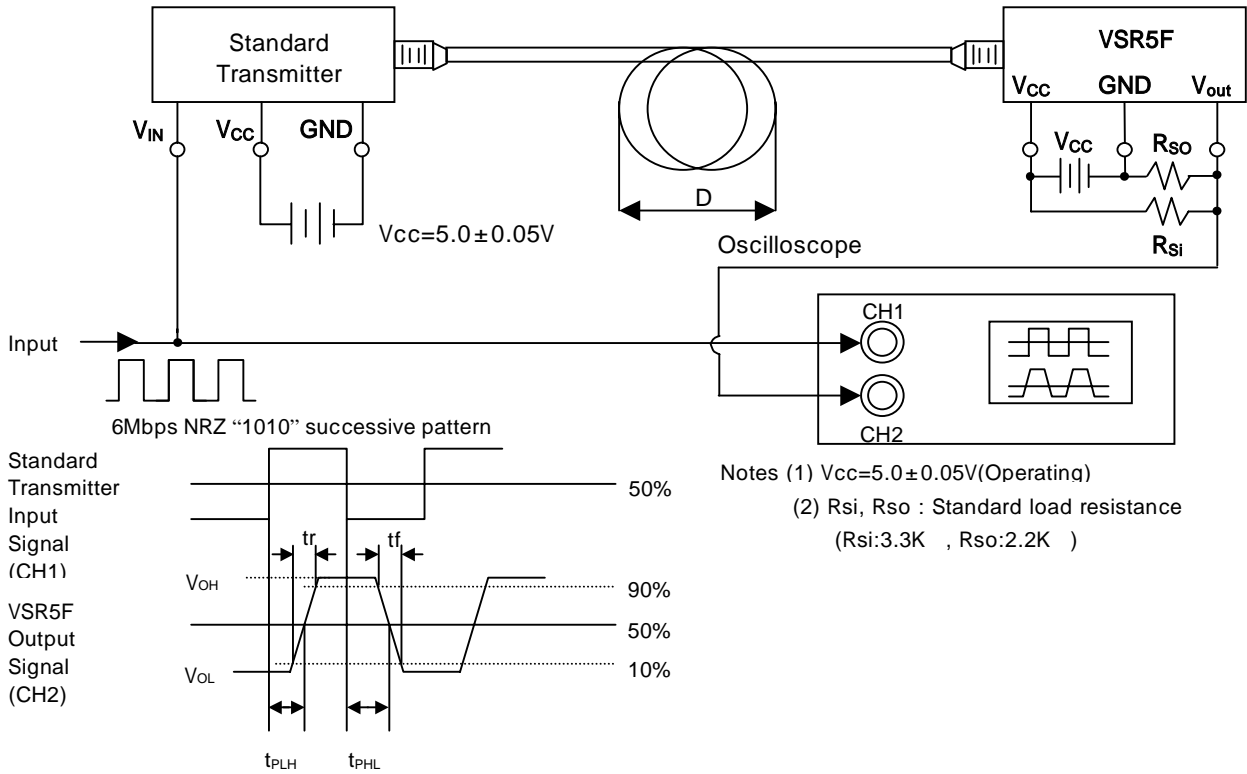
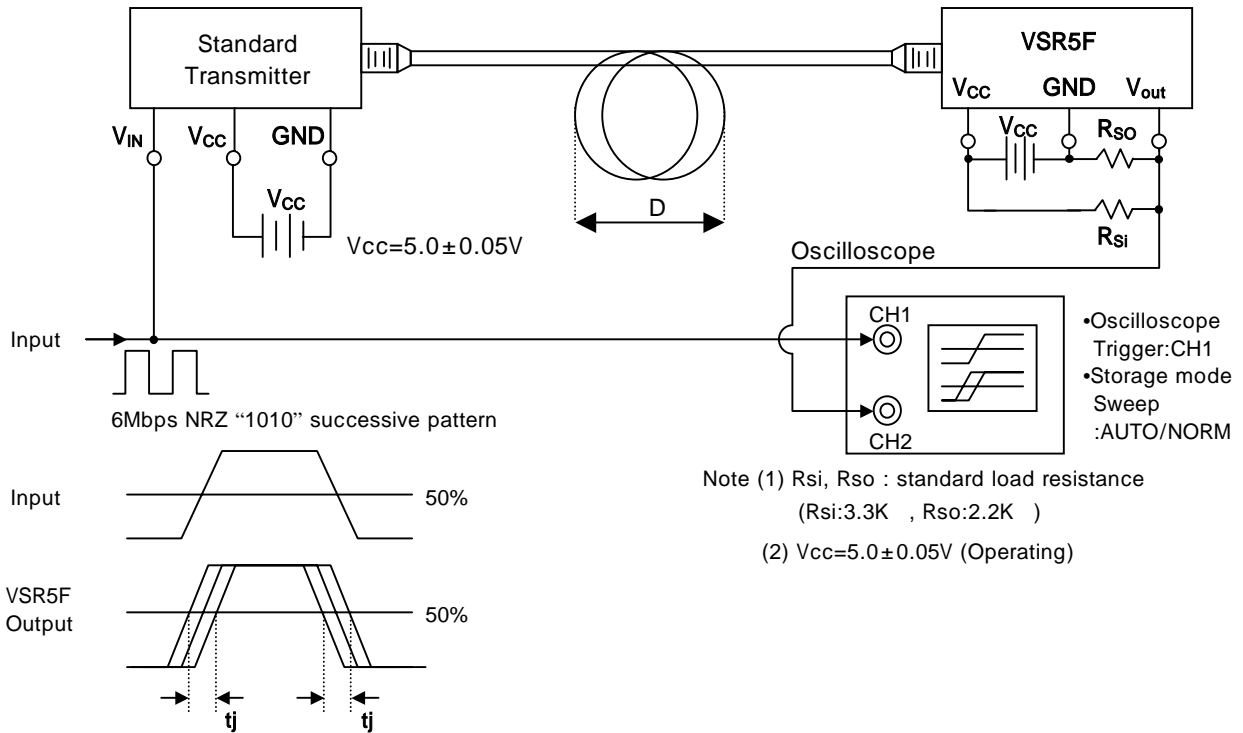


Fig.4 Measuring Method of Jitter



V  
I  
T  
*Optical*  
*New*  
*Electronic*  
*telecommunication*

***VITonet Co., Ltd.***

---

URL : <http://www.vitonet.co.kr>  
E-MAIL : [vitonet@vitonet.co.kr](mailto:vitonet@vitonet.co.kr)

**HEAD OFFICE  
&  
FACTORY** : #2309, Production Hall, 43-5, Sameum-Ri,  
Jiksan-Eub, Chunan-city, Chungnam, 330-816, Korea  
TEL : 82-41-583-6136~8 / FAX : 82-41-585-1407

**R&D CENTER** : #2401, Bunyooung Hall, 43-1, Sameum-Ri,  
Jiksan-Eub, Chunan-city, Chungnam, 330-816, Korea  
TEL : 82-41-583-4741~2 / FAX : 82-41-583-4743