

## *Fiber Optic Modules for Digital Data-Link Systems*



raytron

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## Fiber Optic for Digital Data-Link Systems.

### 1. Description

The RFT.. series are Fiber Optic Transmitting modules for data link interface and Digital Audio Equipment, integrate LED and Driver IC with constant current output.

### 2. Applications

- Digital optical Data-Link.
- AV equipment (DVD Player, Audio, CD player, STB, etc)
- Home appliances (PC, Notebook, etc)
- Sound card.

### 3. Features

- Wide operating supply voltage between 2.7V to 5.5V.
- High speed transmission of high quality audio signal such as DVD players and AV amplifiers.  
Signal transmission speed : 25Mbps Max.(NRZ Signal)
- Directly connectable to modulation IC for digital audio equipment.
- TTL compatible interface.

### 4. Absolute maximum ratings

(Ta = 25°C)

Parameter	Symbol	Ratings	Unit
Supply Voltage	V <sub>CC</sub>	-0.5 to +7.0	V
Output Current	I <sub>IN</sub>	-0.5 to V <sub>CC</sub> +0.5	V
Max. Loss	V <sub>OUT</sub>	125	mW
Operating Temperature	T <sub>opr</sub>	-20 to +70	°C
Storage Temperature	T <sub>stg</sub>	-30 to +80	°C
Soldering Temperature ※1	T <sub>sd</sub>	260 , 5sec	°C

※1. t<5 s, 2.0mm from package

### 5. Reliability Test Items

Parameter	Test Conditions	Remark
High Temperature	Ta=+60, V <sub>CC</sub> =5.0V t=500h	※1, ※2
Low Temperature	Ta=-20, V <sub>CC</sub> =5.0V t=500h	※1, ※2
High Temp./ High Humidity	Ta=+60°C 90%RH, V <sub>CC</sub> =5.0V t=500h	※1, ※2
Heat Cycle	Ta=-30°C(0.5h) to +80°C(0.5h) 20 cycle	※2, ※3
Soldering Heat	In case of solder bath method, Ta=260±10°C, 5s, 2times. Thickness : 2.0mm In case of solder bath method, Ta=350°C, 3s, 1times. Soldering at the place more than 7mm away from the Center a lens	
Soldering Ability	Soldering at the place more than 3mm away from the Foot of the terminal. Used as resin flux.	
Fall Test	Height=75cm, 3 times	

※ 1. Supply voltage of load test is 5V.

※ 2. Electro-optical characteristics shall be satisfied after leaving 2 hours in the normal condition.

※ 3. Heat cycle test shall repeat above condition 20 times under no load.

**6. Electro-optical Characteristics**

 (V<sub>CC</sub>=5.0V, T<sub>a</sub> = 25°C)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Peak Emission Wavelength	$\lambda_P$	V <sub>CC</sub> =4.75~5.25V	630	660	690	nm
Optical Power Output Coupling with Fiber ※1	P <sub>c</sub>	Ref. to Fig.1	-21	-17	-14	dBm
Transmission Speed ※2	T	NRZ signal	DC		25	Mbps
Dissipation Current	I <sub>CC</sub>	Ref. to Fig.1	-	4	8	mA
High Level Input Voltage	V <sub>IH</sub>	Ref. to Fig.1	2.0	-	-	V
Low Level Input Voltage	V <sub>IL</sub>	Ref. to Fig.1	-	-	0.8	V
Rise Time	t <sub>r</sub>	Ref. to Fig.1	-	30	50	ns
Fall Time	t <sub>f</sub>	Ref. to Fig.1	-	30	50	ns
Low to High Propagation Delay Time	t <sub>pLH</sub>	Ref. to Fig.2	-	-	100	ns
High to Low Propagation Delay Time	t <sub>pHL</sub>	Ref. to Fig.2	-	-	100	ns
Pulse Width Distortion	$\Delta tw$	Ref. to Fig.1,2	-15	-	15	ns
Jitter	$\Delta tj$	Ref. to Fig.2	-	-	15	ns
Transmission Distance ※3		Using POF	-	-	20	m

※ 1. Measure with a standard optical fiber, Peak value.

※ 2. LED is on when input signal is high level, it is high level, it is off when low level.

The duty factor must be kept 25 to 75%.

※ 3. Polymer Optical Fiber

**7. Package for Fiber Optic Modules.**
