

MF-156DS-TR124-002/003

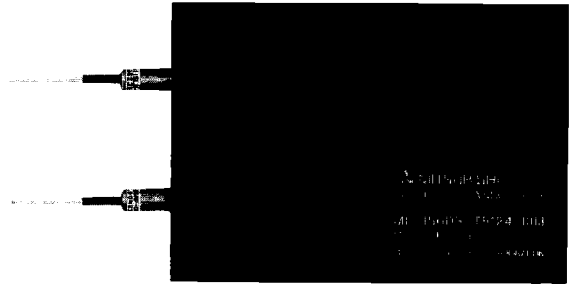
Digital Optical Transceiver Module with Clock Recovery

MF-156DS-TR124-002/003 is a high performance transceiver for CCITT SDH and ANSI SONET application. It combines both transmitting and receiving function, and its optical devices are InGaAsP LD and Ge APD.

This transceiver can operate with single -5.2V power supply and offer "ENABLE" input to shutdown the laser, "REC ALM" for optical input signal detection and clock recovery.

FEATURES

- Operation 155.52Mb/s (NRZ)
- CCITT SDH (STM-1) compliant
- Transmitter and Receiver combines in one package
- Compact package by monolithic specific IC technology
- Transmitter-disable option
- Receiver failed alarm option
- Single -5.2V power supply
- ECL logic interface



MF-156DS-TR124-003

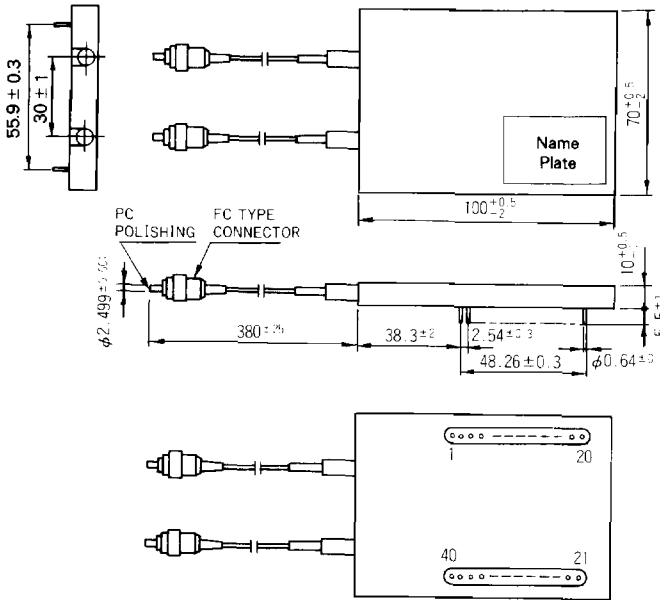
ABSOLUTE MAXIMUM RATINGS ($T_A=+25^\circ\text{C}$)

Items	Symbols	Ratings		Units	
		Min.	Max.		
Power supply voltage	V_{EE}	0	-6	V	
Input signal voltage	V_I	0	V_{EE}	V	
Soldering	temperature	T_s	-	260	$^\circ\text{C}$
	time	t_s	-	10	Sec
Operating ambient temperature	T_A	+10	+55	$^\circ\text{C}$	
Storage temperature	T_{stg}	-20	+70	$^\circ\text{C}$	
Relative Humidity*	RH	10	90	%	

* without making drops

Digital Optical Transceiver Module with Clock Recovery

OUTLINE DRAWINGS Unit (mm)

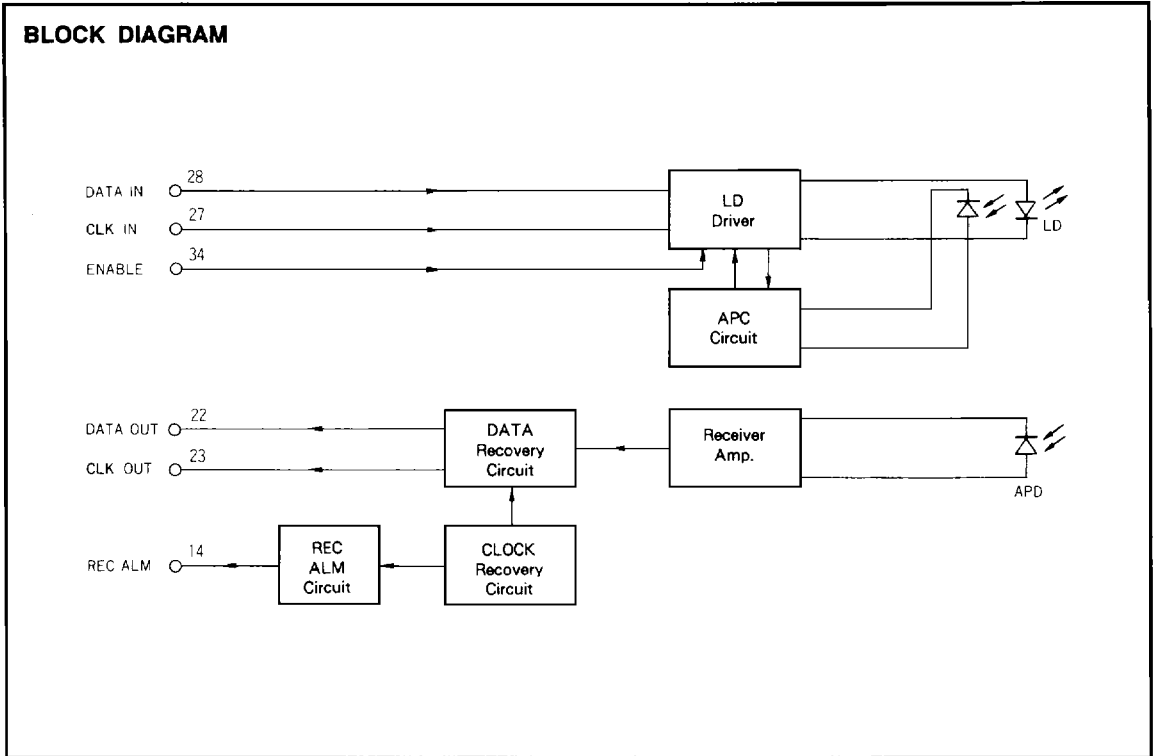


PIN ASSIGNMENT

PIN No.	FUNCTION
1, 29, 31, 36, 38, 39, 40	NC
2~13, 15, 16, 19, 20, 21, 24, 26, 30, 32, 33, 35, 37	GND
14	REC ALM
17	VEE 1
18	VEE 2
22	DATA OUT
23	CLK OUT
25	VEE 3
27	CLK IN
28	DATA IN
34	ENABLE

MF-156DS-TR124-002/003

Digital Optical Transceiver Module with Clock Recovery

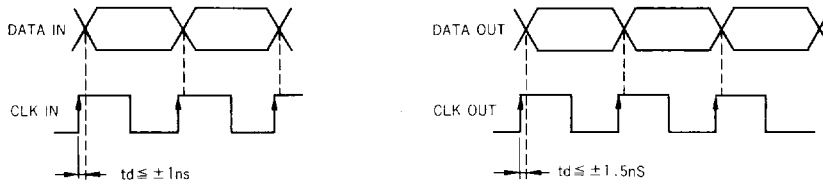


Digital Optical Transceiver Module with Clock Recovery

CHARACTERISTICS

Items	Model Name	MF-156DS-TR124-002	MF-156DS-TR124-003
Signal bit rate		155.52Mb/s \pm 20ppm	
Optical modulation		Intensity Modulation	
Line pattern/code		PN2 ²³ -1 unipolar NRZ	
Optical device (transmitter)		LD	
Center wavelength		1285~1335nm	
Spectral width		4nm (rms)	7.7nm (rms)
Optical output power		-1~-4dBm	-9~-12dBm
Optical device (receiver)		APD	
Receiver Sensitivity (average value) PRBS 2 ²³ -1		-16dBm~-37dBm	-9dBm~-35dBm
Bit error rate		$\leq 1 \times 10^{-9}$	$\leq 1 \times 10^{-9}$
Electrical interface	* 1	unipolar NRZ /ECL (10KH compatible)	
Optical interface		FC connector SM10/125	
Power supply	* 2	-5.2V \pm 5%	
Power consumption		550mA max (TYP 460mA)	

* 1 ● Electrical input and output interface condition.



- 680 Ω / -5.2V pull down resistance is built in for DATA IN and CLK IN.
- 680 Ω / -5.2V pull down resistance is built in for ENABLE input.
(ECL "H" disables the optical output power.)
- Pull down resistance is not built in for DATA OUT, CLK OUT or REC ALM OUT. Please prepare 680 Ω / -5.2V for each signal by customer's side.
(When optical input signal shuts down, REC ALM OUT changes from "L" to "H".)

* 2 ● Please reduce noise or ripple less than 10mVp-p at power supply input.