

## RTXM143TL&144TL&153TL&154TL Series



## TTL 5.0V 1 × 9 52M Transceiver Module

### ***RTXM143TL&144TL&153TL&154TL Series***

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#### Features

- *Duplex SC receptacle*
- *Duplex FC receptacle*
- *or FC pigtailed optical interface*
- *Standard 1x9 package*
- *Single +5.0V power supply*
- *0 to 70oC operating temperature*
- *range*
- *TTL compatible data input/output interface*
- *TTL receiver signal-detected indication*

#### Application

- *PDH*
- *10M Fast Ethernet*

## RTXM143TL&144TL&153TL&154TL Series

### Standard

- *Compliant with ITU-T G.957*

### Absolute Maximum Ratings

Parameter	Symbol	Unit	Min	Max
Storage Temperature Range	$T_s$	°C	-40	85
Relative Humidity	RH	%	0	95
Power Supply Voltage	$V_{cc}$	V	-0.5	+6
Lead Solder Temperature	-	°C	-	260
Lead Solder Duration	-	S	-	10
Voltage on any input/output pin	$V_I$	V	0	$V_{cc}$

### Recommended Operating Conditions

Parameter	Symbol	Unit	Min	Typ	Max
Operating Temperature Range	$T_{op}$	°C	0	-	70
Power Supply Voltage	$V_{cc}$	V	4.75	5.0	5.25
Operating Data Rate	-	Mbps	-	52	-

### Specifications ( $T_{op}=0^{\circ}C$ to $70^{\circ}C$ and $V_{cc}=4.75V$ to $5.25V$ )

Parameter	Symbol	Unit	Min	Typ	Max	Note
<b>Electrical Characteristics</b>						
Supply Current	$I_{cc}$	mA	-	-	250	
Data Input Voltage - Low	$V_{OL}$	V	-	-	0.8	
Data Input Voltage -High	$V_{OH}$	V	2.0	-	-	
Data Input Current - Low	$I_{IL}$	mA	-	-	-0.6	
Data Input Current -High	$I_{IH}$	μA	-	-	20	
Data Output Voltage-Low	$V_{OL}$	mV	-	750	-	
Data Output Voltage-High	$V_{OH}$	V	3.4	3.7	-	
SD Output Voltage-Low	$V_{OL}$	mV	-	-	300	
SD Output Voltage-High	$V_{OH}-V_{cc}$	V	-	$V_{cc}$	-	
<b>RTXM143TL,RTXM153TL,RTXM153TL-JFC</b>						
<b>Optical transmitter Characteristics</b>						
Center Wavelength Range	$\lambda_c$	nm	1260	1310	1360	
Launch Optical Power	$P_o$	dBm	-14	-	-5	1
Extinction Ratio	EX	dB	10	-	-	

## RTXM143TL&144TL&153TL&154TL Series

Spectral Width	$\Delta\lambda$	nm	-	-	4
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### Optical receiver Characteristics

Receiver Sensitivity	S	dBm	-	-	-38.0	2
Overload Input Power	$P_{in}$	dBm	-8	-	-	2
Signal Detect-Deasserted	$P_D$	dBm	-52.0	-	-	
Signal Detect-Asserted	$P_A$	dBm	-	-	-38.0	
Signal Detect-Hysteresis	$P_A-P_D$	dB	-	-	6	

### RTXM144TL,RTXM154TL-JFC,RTXM154TL-JFC

### Optical transmitter Characteristics

Center Wavelength Range	$\lambda_c$	nm	1260	1310	1360	
Launch Optical Power	$P_o$	dBm	-5	-	0	1
Extinction Ratio	EX	dB	10	-	-	
Spectral Width	$\Delta\lambda$	nm	-	-	4	

### Optical receiver Characteristics

Receiver Sensitivity	S	dBm	-	-	-38.0	2
Overload Input Power	$P_{in}$	dBm	-8	-	-	2
Signal Detect-Deasserted	$P_D$	dBm	-52.0	-	-	
Signal Detect-Asserted	$P_A$	dBm	-	-	-38.0	
Signal Detect-Hysteresis	$P_A-P_D$	dB	0.5	-	6	

**Note1:** Minimum output optical level is at end of life.

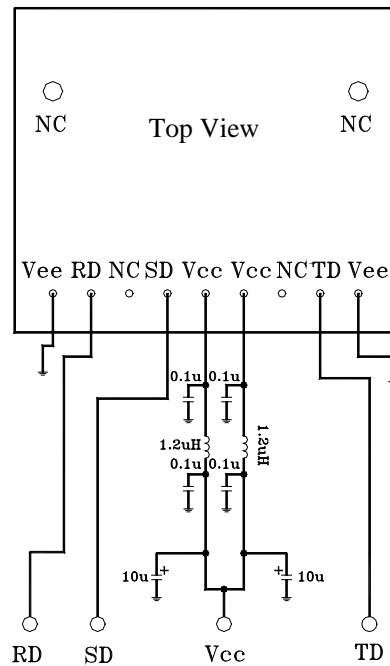
**Note2:** Sensitivity and overload for 52M PRBS  $2^{23}-1$  and Bit Error Rate better than or equal to  $10E-10$ .

## Pin Description

### Pin Name Level Description

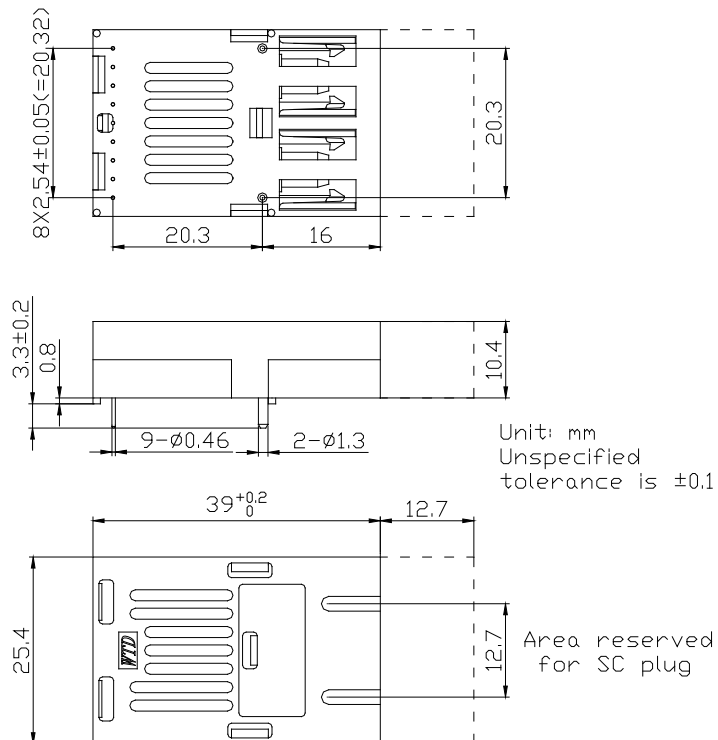
1	Vee		Negative power of receiver section, normally grounded
2	NC		
3	RD	TTL	Data output of receiver section
4	SD	TTL	Optical alarm of receiver section, High level when normal, low level when no light
5	Vcc		Positive power of receiver section, normally +5V
6	Vcc		Positive power of transmitter section, normally +5V
7	TD	TTL	Data input of transmitter section
8	NC		
9	Vee		Negative power of transmitter section, normally grounded

# RTXM143TL&144TL&153TL&154TL Series Typical application circuit



## Package outline (unit: mm)

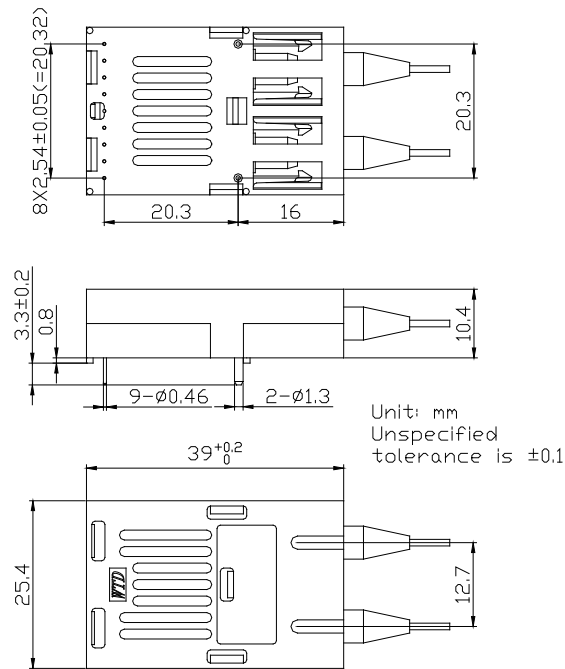
Duplex SC receptacle optical interface



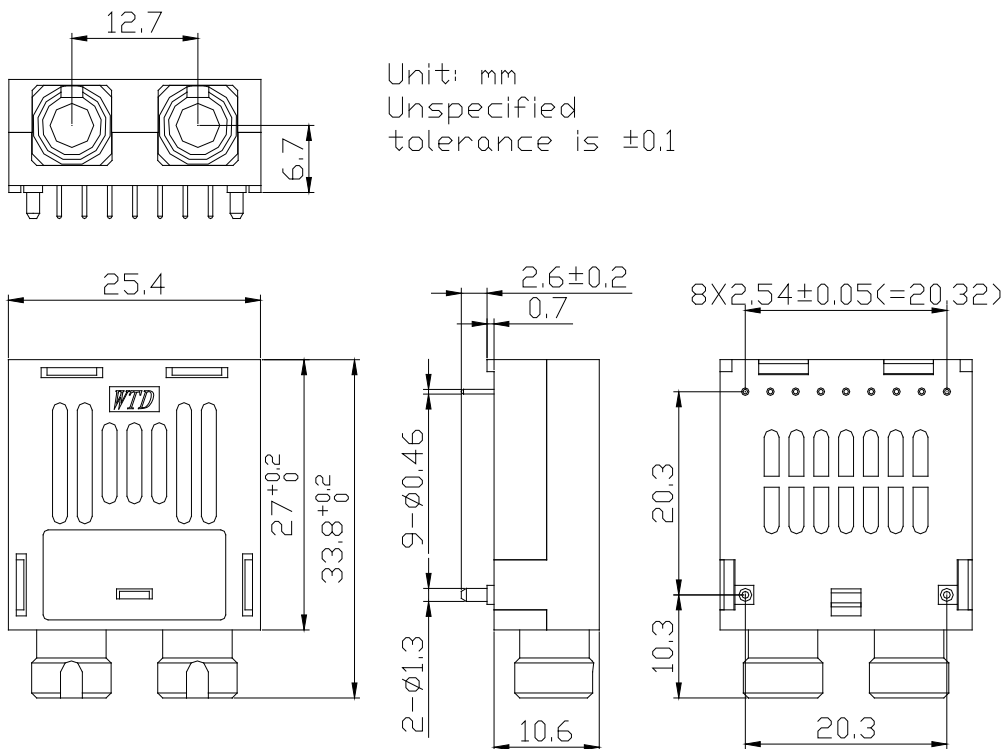
FC pigtailed optical interface

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<http://www.wtd.com.cn>

## RTXM143TL&144TL&153TL&154TL Series



Duplex FC receptacle optical interface



## Regulatory Compliance

Feature	Test Method	Performance
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## RTXM143TL&144TL&153TL&154TL Series

Electrostatic Discharge (ESD) to the Electrical Pins	MIL-STD-883E Method 3015.7	Class 1 (>1.5kV) – Human Body Model
Electrostatic Discharge (ESD) Immunity	IEC61000-4-2	Class 2(>4.0kV)
Electromagnetic Interference (EMI)	CISPR22 ITE Class B EN55022 Class B	Compliant with standards
Immunity	IEC61000-4-3 Class 2 EN55024	Typically show no measurable effect from a 3V/m field swept from 80 to 1000MHz applied to the transceiver without a chassis enclosure.
Eye Safety	FDA 21 CFR 1040.10 and 1040.11 UL TUV EN 60825-1	Compliant with Class 1 laser product UL No. E239070

## Ordering information

Part No.	Specification								
	Package	Data rate	Laser	Optical Power	Detector	Sensitivity	Temp	Reach	Interface
RTXM143TL	1×9	52Mb/s	1310nmFP-LD	-14~-5dBm	PIN+TIA	-38dBm(max)	0~70°C	15km	FC Pigtail
RTXM153TL	1×9	52Mb/s	1310nmFP-LD	-14~-5dBm	PIN+TIA	-38dBm(max)	0~70°C	15km	Duplex SC
RTXM144TL	1×9	52Mb/s	1310nmFP-LD	-5~0dBm	PIN+TIA	-38dBm(max)	0~70°C	40km	FC Pigtail
RTXM154TL	1×9	52Mb/s	1310nmFP-LD	-5~0dBm	PIN+TIA	-38dBm(max)	0~70°C	40km	Duplex SC
RTXM153TL-JFC	1×9	52Mb/s	1310nmFP-LD	-14~-5dBm	PIN+TIA	-38dBm(max)	0~70°C	15km	Duplex FC
RTXM154TL-JFC	1×9	52Mb/s	1310nmFP-LD	-5~0dBm	PIN+TIA	-38dBm(max)	0~70°C	40km	Duplex FC

\*: The product marked with \* is not available at present.

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