

SFFB-43-622Q-BP



Features

- Burst receive SFF PON transceiver
- 1490 nm DFB Tx/1310 nm Rx
- Small Form Factor, pigtailed bi-directional
- 622 Mbps downstreamTx/155 Mbps upstream Rx
- 0 to 70 °C temperature operation
- Single 3.3 V supply
- FSAN G.983.3 Class B Compliant

General Operating

Parameter	Symbol	Min.	Typ.	Max.	Unit
Operating Voltage	V_{CC}	3.135	3.3	3.465	V
Total Current	I_{CC}	-	-	300	mA
Power Supply Noise Rejection		100	-	-	mVp-p
Operating Temperature(case)	T_{opr}	0	-	70	°C
Storage Temperature	T_{stg}	-40	-	85	°C

General Optical Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Back Reflection at 1490 nm		-	-	-6	dB
Back Reflection at 1310 nm		-	-	-20	dB
1490 nm to 1310 nm crosstalk		-	-	-47	dB

Transmitter Specifications (Optical)

Parameter	Symbol	Min	Typical	Max	Unit
Optical Power	P_{op}	-2	1	4	dBm
Average launch power of off Tx	P_{off}	-	-	-30	dBm
Wavelength	λ	1480	1490	1500	nm
$\Delta\lambda_{20}$		-	-	1	nm
Side Mode Suppression Ratio		30	-		dB
Extinction Ratio	ER	10	-		dB
Transmit eye mask		Fig 6, G.983.3			
Bit Rate		-	622	-	Mbps
Optical Rise time ^a		-	-	500	ps
Optical Fall time ^a		-	-	500	ps
Tolerance to TX back reflection ^b		-24	-		dB
Optical Jitter generation	J_{gen}	-	-	0.002	UI
Total Jitter		-	-	200	ps(p-p)
TX enable time	t_{on}	-	-	1	ms
TX disable time	t_{off}	-	-	10	μs

a) 20% to 80% values

b) 1 dB degradation of receiver sensitivity

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Transmitter Specifications (Electrical)

Parameter	Symbol	Min	Typical	Max	Unit
Input Differential Impedance	R_{in}	80	100	120	Ω
PECL Single Ended data input swing(LVPECL)	$V_{in, p-p}$	300	-	1250	mV
Tx Disable (LVTTL)	V_{fault}	$V_{cc}-1.3$	-	V_{cc}	V
Tx Enable (LVTTL)	V_{normal}	0	-	0.8	V

Receiver Specifications (Optical)

Parameter	Symbol	Min	Typical	Max	Unit
Wavelength ^c	λ	1260	1310	1360	nm
Data Rate (burst)		-	155	-	Mbps
Receiver Power Low ^d	$R_{sens, low}$	-	-	-31.5	dBm
Receiver Power High ^d	$R_{sens, high}$	-	-	-11	dBm
Damage Threshold for Receiver	$P_{in, damage}$	0	-	-	dBm
Maximum Reflectance of Receiver	RX_r	-	-	-20	dB
Signal Detect Threshold Assert	-	-41.5	-	-	dBm
Signal Detect Threshold De-assert	-	-	-	-31.5	dBm
Signal Detect Hysteresis	-	1	-	-	dB

c) Operational over 1200-1625 nm range

d) at 10^{-10} BER, PRBS $2^{23}-1$, 20 Km fiber

Electrical Output

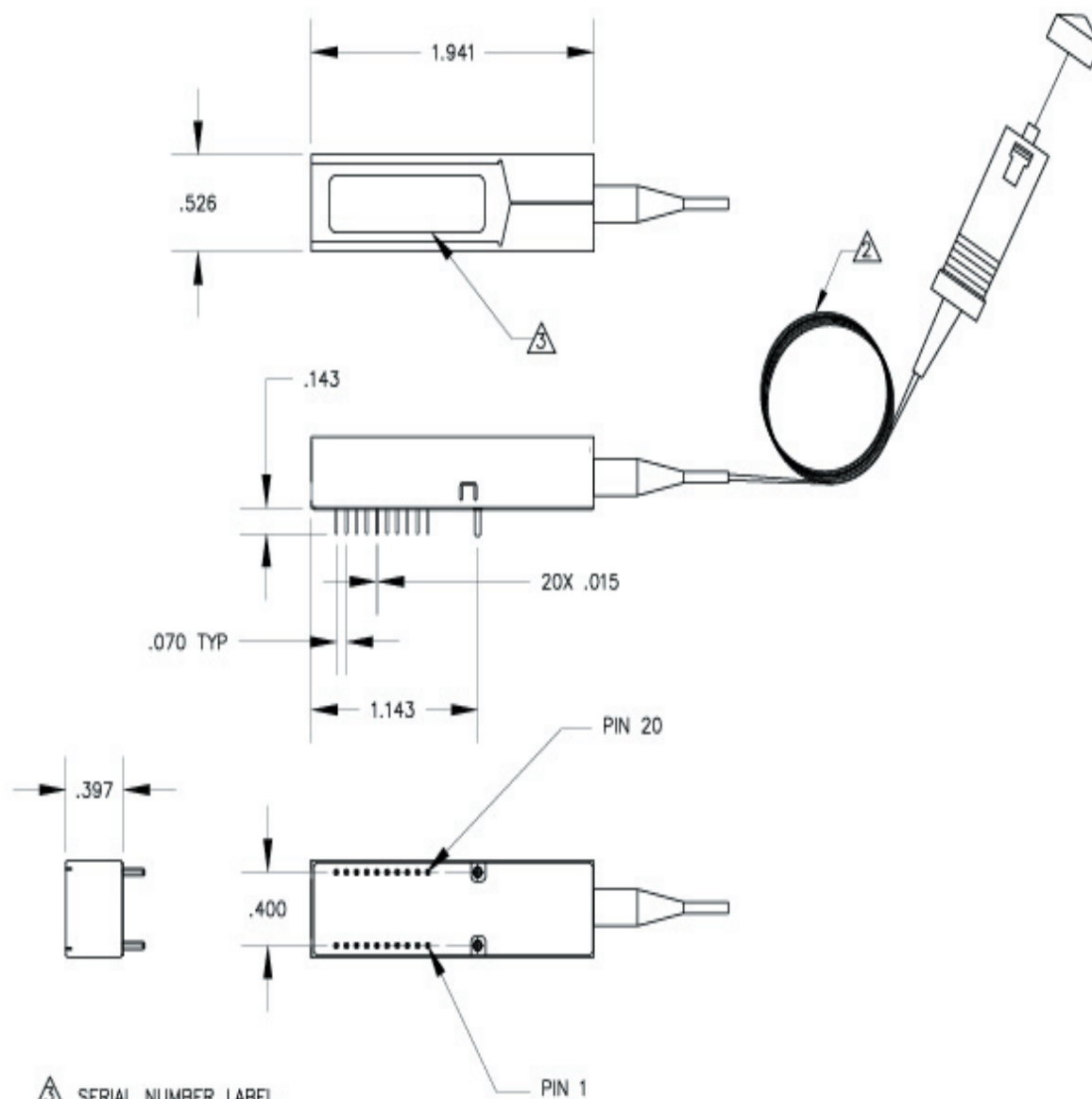
Parameter	Symbol	Min	Typical	Max	Unit
PECL Single ended data output swing(LVPECL)	$V_{out, p-p}$	500	-	940	mV
Data output rise time ^e	t_r	-	-	500	ps
Data output fall time ^e	t_f	-	-	500	ps
Data output time delay		-	-	100	ns
Signal detect time delay		-	-	100	ns
Signal detect output HIGH (LVTTL)		2.4	-	V_{cc}	V
Signal detect output LOW(LVTTL)		0	-	0.8	V

e) 20% to 80% values

Pinout Definitions

Pin	Function
1	NC
2	NC
3	Rx Gnd
4	RST Bar
5	RST
6	Rx Gnd
7	Rx Vcc
8	NC
9	Rx Data Bar
10	Rx Data
11	Tx Vcc
12	Tx Gnd
13	Tx Dis
14	Tx Data
15	Tx Data Bar
16	Tx Gnd
17	SCL
18	SDA
19	NC
20	NC

Outline Drawing



3 SERIAL NUMBER LABEL.

2 1.0 METER 900μm BUFFERED FIBER TERMINATED WITH SC CONNECTOR OR UNLESS OTHERWISE SPECIFIED.

1. CUSTOMER MAKES ALL EXTERNAL CONNECTIONS TO FIBER COMPONENTS AND WIRING.

NOTES: UNLESS OTHERWISE SPECIFIED

Ordering information

SFFB -	Wavelengths -	Data Rate Tx (Mbps)	Data Rate Rx (Mbps)	Interface (Standard or Luminent Specified)	Adapter	Connector type -	Digital Diagnostics	Temperature Range	Customer Specific
					(Separator)				
	• TR - T= Transmit wavelength - R = Receive wavelength 3=1310 4=1490 5=1550						• Blank = no connector or receptacle - SCX - LCX - FCX - STX - X = blank = no connector - X = A (angled) - X= U (Ultra)		
	• 155 622 1250 2488						• Blank= no diagnostic - D1 = external calibration - D2 = internal calibration		
	• Blank = symmetric - F= Four times Tx data rate - T= Twice Tx data rate - H= Half time Tx data rate - Q= Quarter Tx data rate						• Blank = commercial - T = industrial Temp (-40 to 85°C) - R = reduced industrial Temp (-20 to 85)		
	• SR1 - IR1 - IR2 - LR1 - LR2 - LR3 - LR (for CWDM) - LX - XD - ZX - A = Class A - B = Class B - C = Class C						• Blank = standard procedure - shipping instruction etc.		
	• Blank= Receptacle - P = Pigtailed								

Handling Precautions: This device is susceptible to damage as a result of electrostatic discharge (ESD). A static free environment is highly recommended. Follow guidelines according to proper ESD procedures.

Laser Safety: Radiation emitted by laser devices can be dangerous to human eyes. Avoid eye exposure to direct or indirect radiation.

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