



Módulo Óptico BIDI SFP+ 10G 80km E-temp

BS9511Z-CN-(A) E BS5911Z-CN-(B)

Módulo óptico (gbics) SFP+ são módulos econômicos e de alto desempenho que suportam taxas de dados de 10 Gbps e seu alcance máximo de enlace é de 80km.



Observações

Somente remova a tampa quando for realizar a conexão do cordão/cabo, evitando assim sujeiras indesejadas no conector. Nunca olhe diretamente no interior do módulo óptico. A radiação óptica pode ser prejudicial aos olhos.

10Gb/s SFP+ BIDI 1490nm/1550nm&1550nm/1490nm 80km Transceivers

FEATURES

- Supports 11.1Gb/s bit rates
- Hot-pluggable SFP+ footprint
- Up to 80km for SMF transmission
- 1490nm EML laser and APD receiver
- 1550nm EML laser and APD receiver
- Compliant with SFP+ MSA with single LC receptacle
- Compatible with RoHS
- Single +3.3V power supply
- Power dissipation < 1.5W
- 2-wire interface with integrated Digital Diagnostic monitoring
- EEPROM with Serial ID Functionality
- Operating case temperature: 0 to +70°C

APPLICATIONS

- 10GBASE-BX 10.3125Gb/s Ethernet

ORDERING INFORMATION

1. ABSOLUTE MAXIMUM RATINGS

Part Number	Form Factor	Data Rate	Media	Distance (km)	Wavelength (nm)	Temperature (°C)
BS9511Z-CN	SFP+	10G	SMF	80	1490/1550	0~70
BS5911Z-CN					1550/1490	

Parameter	Symbol	Min.	Max.	Unit.
Supply Voltage	Vcc	-0.3	4	V
Storage Temperature	Ts	-40	+85	°C
Operating Humidity	-	5	95	%
Signal Input Voltage		Vcc-0.3	Vcc+0.3	V

2. RECOMMENDED OPERATING CONDITIONS

Parameter	Symbol	Min.	Typ.	Max.	Unit.
Operating Case Temperature(Standard)	Tc	0		+70	°C
Power Supply Voltage	Vcc	3.135	3.30	3.465	V
Power Supply Current	Icc			550	mA
Data Rate		9.95	10.3	11.1	Gbps
Fiber Length 9/125μm core SMF		-		80	km

3. OPTICAL CHARACTERISTICS

Optical transmitter Characteristics						
Parameter	Symbol	Min	Typical	Max	Unit	Notes
Centre Wavelength	λ_c	1480	1490	1500	nm	
		1540	1550	1560	nm	
Spectral Width	$\Delta\lambda$			0.3	nm	
Side-Mode Suppression Ratio	SMSR	30	-		dB	
Average Output Power	Pout	0		4	dBm	
		0		4	dBm	
Average Launch power of OFF transmitter	Poff			-30	dBm	1
Extinction Ratio	ER	7.5			dB	
Data Input Swing Differential	VIN	180		1200	mV	2
Input Differential Impedance	ZIN	80	100	120	Ω	
Transmitter Fault Output-High	VFaultH	2.4		Vcc	V	
Transmitter Fault Output-Low	VFaultL	-0.3		0.8	V	
TX Disable	Disable	VDisH	2		Vcc+0.3	V
	Enable	VDisL	-0.3		0.8	V

Optical receiver Characteristics						
Parameter	Symbol	Min	Typical	Max	Unit	Notes
Centre Wavelength	λ_c	1540	1550	1560	nm	
		1480	1490	1500	nm	
Receiver Sensitivity				-23	dBm	3
Receiver Overload		-6			dBm	3
LOS De-Assert	LOSD			-25	dBm	
LOS Assert	LOSA	-38			dBm	
LOS Hysteresis		0.5		4	dB	
Differential Output Impedance	Rout	80	100	120	Ω	
Differential data output swing	Vout,pp	300		850	mV	
Data Output Rise/Fall time	tr/tf		24		ps	
LOS Output Voltage-High	VLOSH	Vcc -1.3		Vcc	V	
LOS Output Voltage-Low	VLOSL	Vee		Vee +0.8	V	

Notes:

- 1) The optical power is launched into SMF
- 2) PECL input, internally AC-coupled and terminated
- 3) Measured with a PRBS2³¹-1 test pattern @10312Mbps, BER $\leq 1E-12$

4. PIN DESCRIPTIONS

Pin	Symbol	Function/Description	Ref.
1	VeeT	Transmitter Ground	1
2	TX FAULT	Transmitter Fault Indication	2
3	TX DISABLE	Transmitter Disable	3
4	SDA	2-wire Serial Interface Data Line	4
5	SCL	2-wire Serial Interface Clock Line	4
6	MOD_ABS	Module Absent. Grounded within the module	4
7	RS0	Rate Select 0	5
8	LOS	Loss of Signal	6
9	RS1	Not Connected	1
10	VeeR	Receiver ground	1

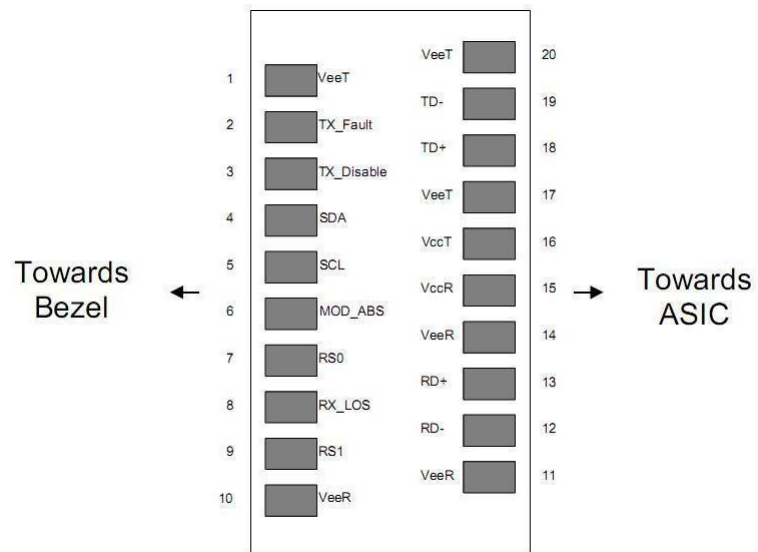
11	VeeR	Receiver ground	1
12	RD-	Inv. Received Data Out	
13	RD+	Received Data Out	
14	VeeR	Receiver ground	1
15	VccR	Receiver Power Supply	
16	VccT	Transmitter Power Supply	
17	VeeT	Transmitter Ground	1
18	TD+	Transmit Data In	
19	TD-	Inv. Transmit Data In	
20	VeeT	Transmitter Ground	1

Notes:

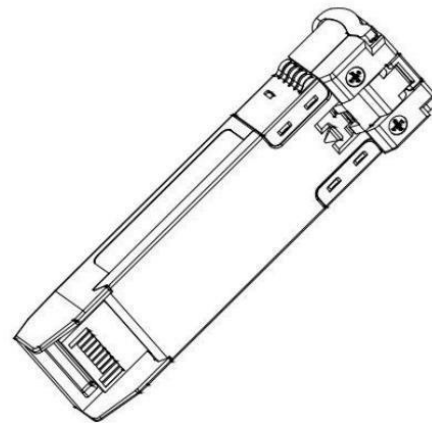
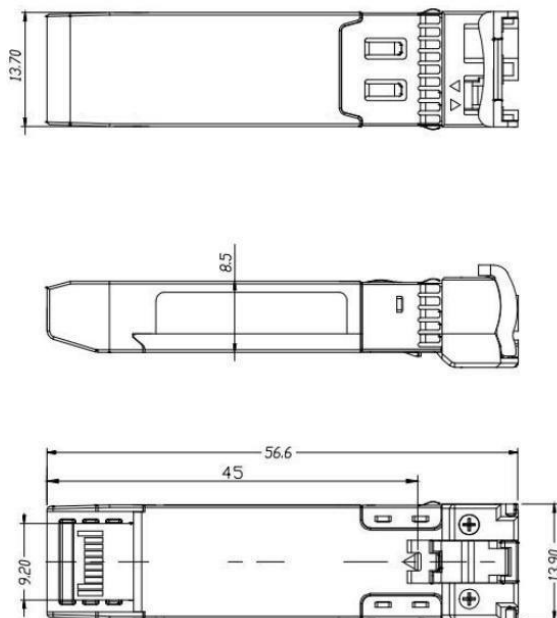
Plug Seq.: Pin engagement sequence during hot plugging

- 1) Circuit ground is internally isolated from chassis ground
- 2) TFAULT is an open collector/drain output, which should be pulled up with a 4.7k – 10k Ohms resistor on the host board if intended for use. Pull up voltage should be between 2.0V to Vcc + 0.3V. A high output indicates a transmitter fault caused by either the TX bias current or the TX output power exceeding the preset alarm thresholds. A low output indicates normal operation. In the low state, the output is pulled to <0.8V
- 3) Laser output disabled on TDIS >2.0V or open, enabled on TDIS <0.8V
- 4) Should be pulled up with 4.7kΩ- 10kΩ host board to a voltage between 2.0V and 3.6V.
MOD_ABS pulls line low to indicate module is plugged in
- 5) Internally pulled down per SFF-8431 Rev 4.1
- 6) LOS is open collector output. It should be pulled up with 4.7kΩ– 10kΩ on host board to a voltage between 2.0V and 3.6V. Logic 0 indicates normal operation; logic 1 indicates loss of signal

5. PIN DIAGRAM



6. Mechanical Design Diagram



All dimensions are
 $\pm 0.2\text{mm}$ unless otherwise
 specified.
 Unit: mm



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