ABCU-5741ARZ-OPC

Avago® ABCU-5741ARZ Compatible TAA 10/100/1000Base-TX SFP Transceiver (Copper, 100m, RJ-45, -40 to 85C)

Features

- INF-8074 Compliance
- RJ-45 Connector
- Copper Media Type
- Industrial Temperature -40 to 85 Celsius
- Hot Pluggable
- Metal with Lower EMI
- Excellent ESD Protection
- RoHS Compliant and Lead Free

Applications:

- 1000Base Ethernet
- Access and Enterprise

Product Description

This Avago® ABCU-5741ARZ compatible SFP transceiver provides 10/100/1000Base-TX throughput up to 100m over a copper connection via a RJ-45 connector. It is capable of withstanding rugged environments and can operate at temperatures between -40 and 85C. This TX module supports 10/100/1000Base auto-negotiation and can be configured to fit your needs. Our transceiver is built to meet or exceed OEM specifications and is guaranteed to be 100% compatible with Avago®. It has been programmed, uniquely serialized, and tested for data-traffic and application to ensure that it will initialize and perform identically. All of our transceivers comply with Multi-Source Agreement (MSA) standards to provide seamless network integration. This transceiver is Trade Agreements Act (TAA) compliant. We stand behind the quality of our products and proudly offer a limited lifetime warranty.

Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Data Rate	DR	10		1000	Mb/sec	2
Cable Length	CL			100	m	3
Bit Error Rate	BER			10		
Operating Temperature	T_{OP}	-40		85	℃	4
Storage Temperature	T_{STO}	-40		85	℃	5
Supply Current	IS		320	375	mA	6
Input Voltage	V_{CC}	3.14	3.3	3.46	V	7
Maximum Voltage	VMAX			4	V	6

Notes:
1. IEEE 802.3 compatible
2. Category 5 UTP
3. Case Temperature
4. Ambient Temperature
5. For electrical power interface
6. Referenced to GND. For electrical power interface

Electrical Characteristics

Parameter		Symbol	Min.	Typ.	Max.	Unit	Notes
High Speed Electrical Interface Host-SFP							
Single ended Input Swing		V_{IN}	250		1200	mV	1
Single ended output Swing		V_{OUT}	275		800	mV	1
Rise time (20%-80%)		T_R		175		ps	
Fall Time (20%-80%)		T_F		175		ps	
Tx Input Impedance		Z_{IN}		50		ohm	1
Rx Output Impedance		Z_{OUT}		50		ohm	1
High Speed Electrical Interface Transmission Line-SFP							
Line Frequency		F_L		125		MHz	2
Tx Output Impedance Differential		Z_{OUT_TX}		100		Ohm	3
Rx Input Impedance Differential		Z_{IN_RX}		100		Ohm	3
Low Speed Electrical Signal							
SFP Output	Low	V_{OL}	0		0.5	V	4
	High	V_{OH}	Host_V_{CC} −0.5		Host_V_{CC} +0.3	V	4
SFP Input	Low	V_{IL}	0		0.8	V	4
	High	V_{IH}	2		VCC + 0.3	V	4

Notes:

1. Single ended
2. 5-level encoding
3. For all frequencies between 1MHz and 125MHz
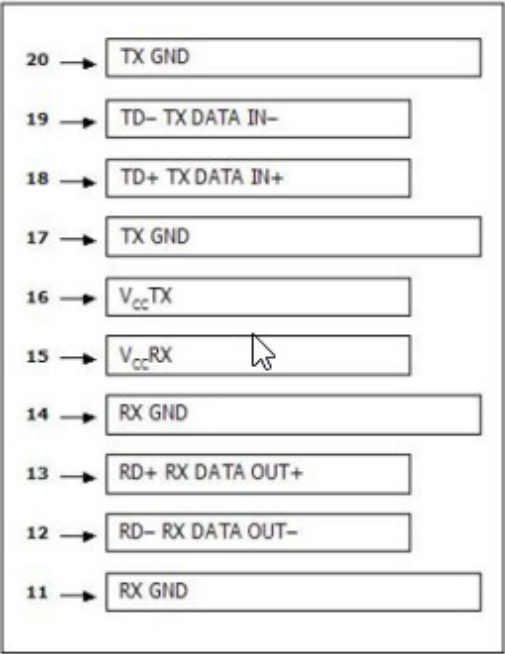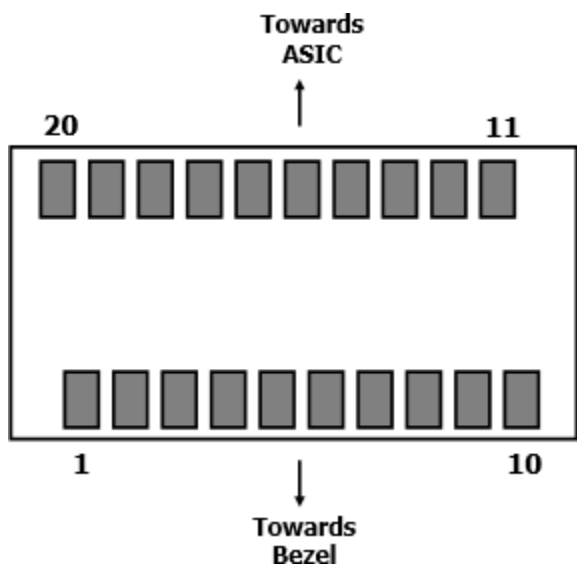4. External 4.7-10k ohm pull-up resistor required

Pin Descriptions

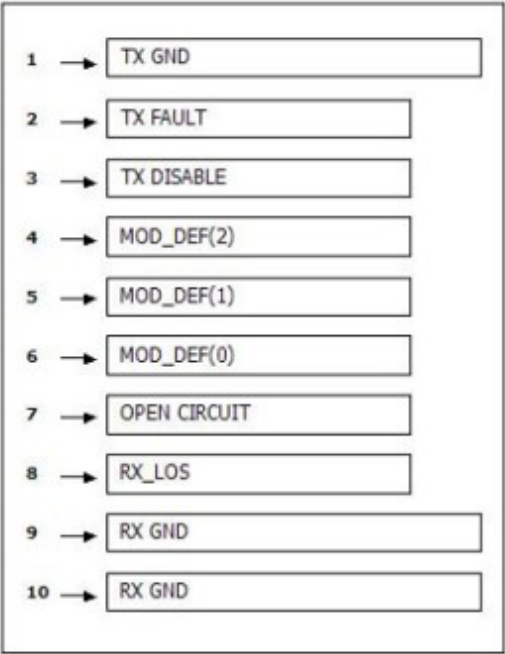| Pin	Symbol	Name/Descriptions	Ref.
1	V$_{EET}$	Transmitter ground (common with receiver ground)	1
2	TX_FAULT	Transmitter Fault. Not supported	
3	TX_DISABLE	Transmitter Disable. PHY disabled on high or open	2
4	MOD_DEF (2)	Module Definition 2. Data line for serial ID	3
5	MOD_DEF (1)	Module Definition 1. Clock line for serial ID	3
6	MOD_DEF (0)	Module Definition 0. Grounded within the module	3
7	Rate Select	No connection required	
8	RX_LOS	Loss of Signal	
9	VEER	Receiver ground (common with transmitter ground)	1
10	VEER	Receiver ground (common with transmitter ground)	1
11	VEER	Receiver ground (common with transmitter ground)	1
12	RD–	Receiver Inverted DATA out. AC coupled	
13	RD+	Receiver Non-inverted DATA out. AC coupled	
14	VEER	Receiver ground (common with transmitter ground)	1
15	VCCR	Receiver power supply	
16	VCCT	Transmitter power supply	
17	VEET	Transmitter ground (common with receiver ground)	1
18	TD+	Transmitter Non-Inverted DATA in. AC coupled	
19	TD–	Transmitter Inverted DATA in. AC coupled	
20	VEET	Transmitter ground (common with receiver ground)	1

Notes:

1. Circuit ground is connected to chassis ground
2. Disabled: TX_DISABLE>2V or open, Enabled: TX_DISABLE <0.8V
3. Should be pilled up with 4.7k-10k ohm on host board to a voltage between 2V and 3.6V
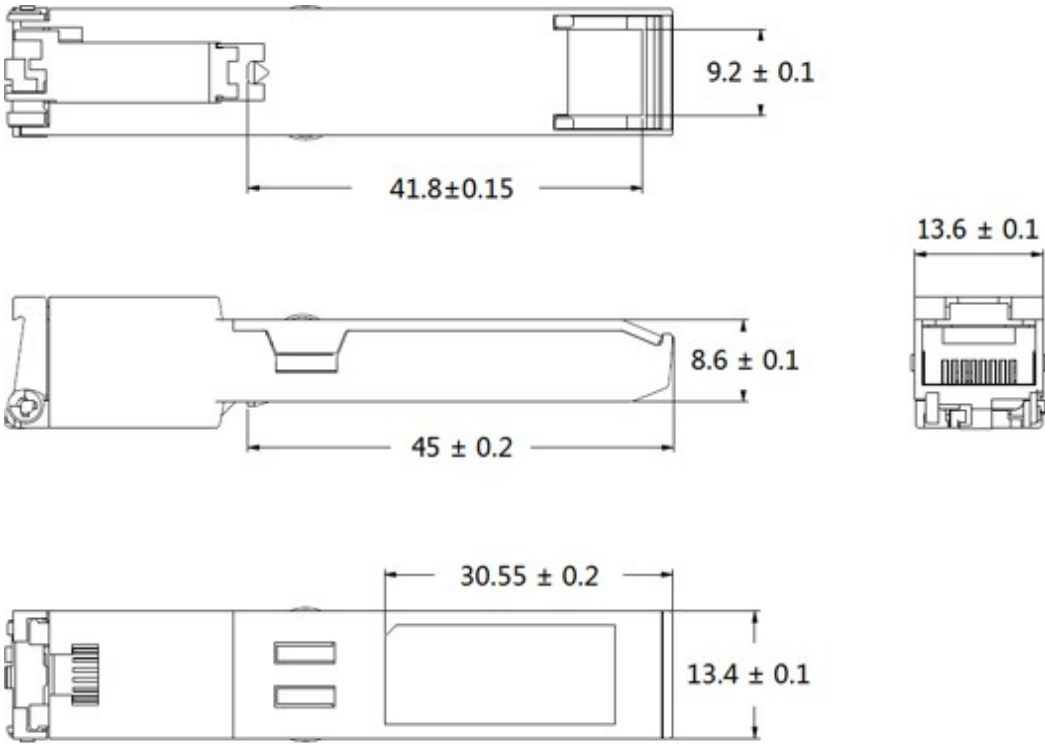
Electrical Pad Layout

Towards ASIC ↑

| 20 | | | | | | | | | 11 |

| 1 | | | | | | | | | 10 |

↓ **Towards Bezel**

Top of Board

20 →	TX GND
19 →	TD– TX DATA IN–
18 →	TD+ TX DATA IN+
17 →	TX GND
16 →	V_{CC}TX
15 →	V_{CC}RX
14 →	RX GND
13 →	RD+ RX DATA OUT+
12 →	RD– RX DATA OUT–
11 →	RX GND

Bottom of Board

1 →	TX GND
2 →	TX FAULT
3 →	TX DISABLE
4 →	MOD_DEF(2)
5 →	MOD_DEF(1)
6 →	MOD_DEF(0)
7 →	OPEN CIRCUIT
8 →	RX_LOS
9 →	RX GND
10 →	RX GND

Mechanical Specifications

9.2 ± 0.1

41.8±0.15

13.6 ± 0.1

8.6 ± 0.1

45 ± 0.2

30.55 ± 0.2

13.4 ± 0.1

UNIT: mm