

## Datasheet

# 10/100/1000Base-T SFP Copper RJ-45 100m Transceiver

SUN-2633



SUN-2633 è un modulo SFP (Small Form Pluggable) RJ45 1000 BASE-T basato sull'accordo MSA (Multi Source Agreement) SFP. Sono conformi agli standard Gigabit Ethernet e 1000BASE-T specificati negli standard IEEE STD 802.3 e 802.3ab.

Hot-Pluggable SFP Footprint

Compact RJ-45 connector assembly

Fully metallic enclosure for low EMI

100m transmission over Cat 5 UTP cable

Detailed product information in EEPROM

Commercial Temperature Range: 0~+70°C

Access to Physical Layer IC via 2-Wire serial bus

Support 10/100/1000BASE-T Operation in Host Systems with SGMII interface

## Application

Router/Server Interface

LAN 10/100/1000Base-T

Switch to Switch Interface

Gigabit Ethernet over Cat 5 Cable

## Product Specifications

### I. General Specifications

Parameter	Symbol	Typ.	Min	Max	Units	Notes/ Conditions
Data Rate		10		1000	Mbps	
Distance				100	m	Cat 6 UTP. BER<10-12

### II. Absolute Maximum Ratings

Parameter	Symbol	Min	Typ.	Max	Units
Maximum Supply Voltage	V <sub>cc</sub>	-0.5		4.0	V
Storage Temperature	T <sub>s</sub>	-40		85	°C

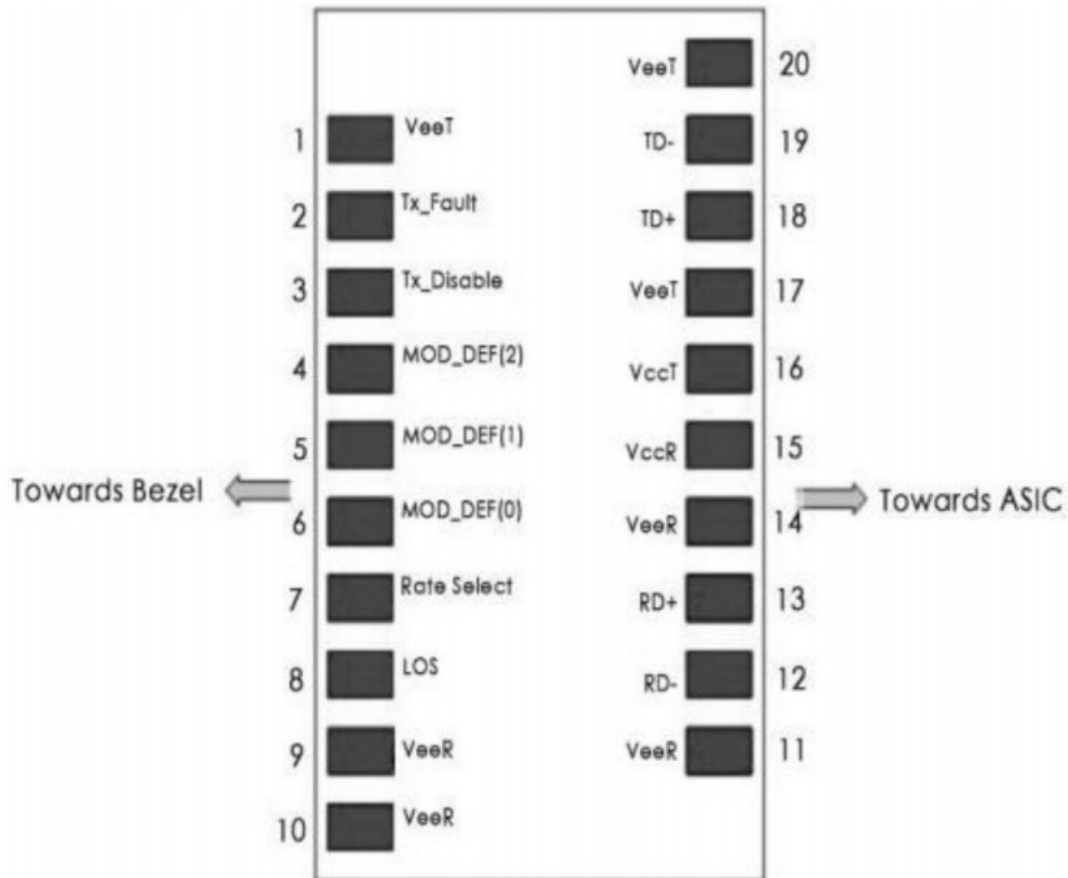
### III. Electrical Characteristics

Parameter	Symbol	Typ.	Min	Max	Units	Notes/ Conditions
<b>+ 3.3 Volt Electrical Power Interface</b>						
Supply Current	I <sub>cc</sub>		300	350	mA	
Input Voltage	V <sub>cc</sub>	3.15	3.3	3.45	V	
Surge Current	I <sub>surge</sub>			30	mA	
<b>Low-Speed Signals, Electronic</b>						
SFP Output	V <sub>OL</sub>	0		0.5	V	4.7k to 10k pull-up to
Low						host_V <sub>cc</sub> , measured at

						host side of connector
SFP Output High	VOH	host_Vcc -0.5		host_Vcc +0.3	V	4.7k to 10k pull-up to host_Vcc, measured at host side of connector
SFP Input Low	VIL	0		0.8	V	4.7k to 10k pull-up to Vcc, measured at SFP side of connector
SFP Input High	VIH	2		Vcc + 0.3	V	4.7k to 10k pull-up to Vcc, measured at SFP side of connector
<b>High-Speed Electrical Interface, Transmission Line-SFP</b>						
Line Frequency	fL		1250		MHz	5-level encoding, per IEEE802.3
Tx Output Impedance	Zout, TX		100		Ohm	Differential, for all frequencies between 1MHz and 125MHz
Rx Input Impedance	Zin, RX		100		Ohm	Differential, for all frequencies between 1MHz and 125MHz
<b>High-Speed Electrical Interface, Host-SFP</b>						
Single Ended Data Input Swing	Vin	250		1200	mV	Single ended
Single Ended Data Output Swing	Vout	350		800	mV	Single ended
Rise/Fall Time	Tr, Tf		175		psec	20%-80%
Tx Input Impedance	Zin		50		Ohm	Single ended

Rx Output Impedance	Zout		50		Ohm	Single ended
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#### IV. Pin Description



Pin No.	Name	Function	Plug Seq.	Notes
1	VeeT	Transmitter Ground	1	
2	TX Fault	Transmitter Fault Indication	3	Not used
3	TX Disable	Transmitter Disable	3	Note 1
4	MOD-DEF2	Module Definition 2	3	Note 2
5	MOD-DEF1	Module Definition 1	3	Note 2
6	MOD-DEFO	Module Definition 0	3	Note 2
7	Rate Select	Not Connected	3	

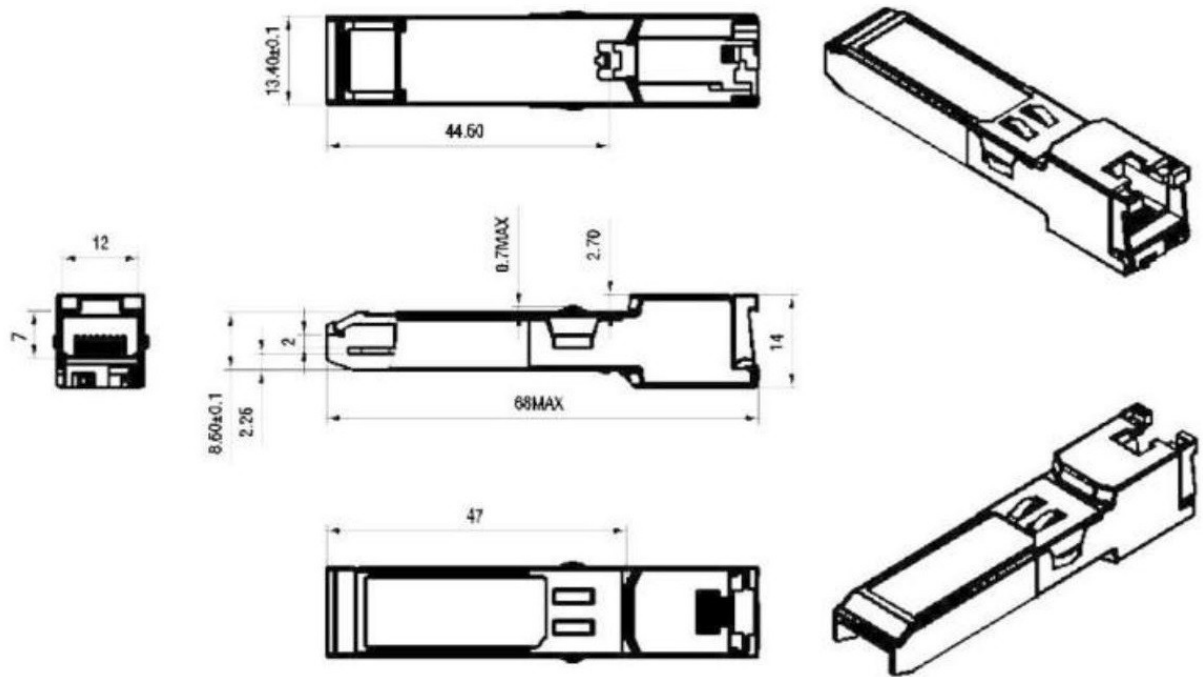
8	LOS	Loss of Signal	3	RX_LOSS
9	VeeR	Receiver Ground	1	
10	VeeR	Receiver Ground	1	
11	VeeR	Receiver Ground	1	
12	RD-	Inv. Received Data Out	3	
13	RD+	Received Data Out	3	
14	VeeR	Receiver Ground	1	
15	VccR	Receiver Power	2	
16	VccT	Transmitter Power	2	
17	VeeT	Transmitter Ground	1	
18	TD+	Transmit Data In	3	
19	TD-	Inv. Transmit Data In	3	
20	VeeT	Transmitter Ground	1	

**Notes:**

1. PHY disabled on TDIS>2.0V or open, enabled on TDIS<0.8V, used to reset the module.
2. Should be pulled up with 4.7k-10k Ohm on host board to a voltage between 2.0V and 3.6V. MOD\_DEF(0) pulls line low to indicate module is plugged in.

## Mechanical Specifications

Copper SFP transceivers are compliant with the dimensions defined by the SFP Multi Sourcing Agreement (MSA).



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