



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



Specification

1x9 Form Factor

Duplex SC Receptacle

Optical Transceivers

STM-1 / OC-3 / 100BASE
155Mbit/s

Ordering Information

T S P - D x A A 2 - 6 B M

Voltage/Temperature

1:3.3V/+0 °C~ +70 °C

2:3.3V/-40 °C~ +85 °C

Model Name	Voltage	Device type	Interface	SD	Temperature	Distance
TSP-D1AA2-6BM	3.3V	FP / PIN	DC / DC Coupling	LVPECL	+0°C~+70°C	90km
TSP-D2AA2-6BM					-40°C~+85°C	

Features

- ROHS-6 Compliant
- Industry Standard 1x9 Footprint
- Laser wavelength 1310nm FP LD
- Single 3.3 Power Supply
- LVPECL Signal Output
- Wave Solderable and Aqueous Washable
- Uncooled Laser Diode with MQW structure
- Complies with Telcordia (Bellcore) GR-468-CORE
- Up to reach 90 km Transmission Distance

Applications

- Fast Ethernet
- SONET/SDH
- Routers
- Switches

Absolute Maximum Ratings

Parameter	Symbol	Min	Typ	Max	Unit
Storage temperature	T_s	-40		85	°C
Supply voltage	V_{CC}	0		4.5	V
Soldering Temperature	-	-		260	°C
Input voltage	V_{IN}	GND		V_{CC}	V
Output Current	I_{out}	0		30	mA

Operating Conditions

Parameter	Symbol	Min	Typ	Max	Unit
Supply Voltage	V_{CC}	3.15	3.3	3.45	V
Operating Case temperature (TSP-D1AA2-6BM)	T_c	0		70	°C
Operating Case temperature (TSP-D2AA2-6BM)		-40		85	
Data Rate			155		Mbps
Power Supply Current	I_{CC}			180	mA

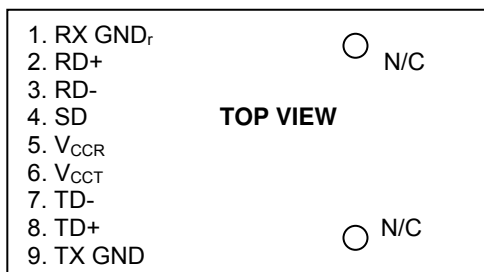
Transmitter Specifications ($V_{CC}=3.15V\sim 3.45V$; $T_C= 0^{\circ}C\sim 70^{\circ}C$ / $T_C= -40^{\circ}C\sim 85^{\circ}C$)

Parameter	Symbol	Min	Typ	Max	Unit
Optical Characteristics					
Output Optical Power	P_{out}	0		+5	dBm
Extinction Ratio	ER	10			dB
Center Wavelength	λ_c	1275	1310	1345	nm
Spectral Width (RMS)	σ			2.5	nm
Relative Intensity Noise	RIN			-116	dB/Hz
Output Eye	Compliant with ITU-T G.957				
Electrical Characteristics					
Data Input Voltage-High	$V_{IH}-V_{CC}$	-1.16		-0.88	V
Data Input Voltage-Low	$V_{IL}-V_{CC}$	-1.81.0		-1.48	V

Receiver Specifications ($V_{CC}=3.15V\sim 3.45V$; $T_C= 0^{\circ}C\sim 70^{\circ}C$ / $T_C= -40^{\circ}C\sim 85^{\circ}C$)

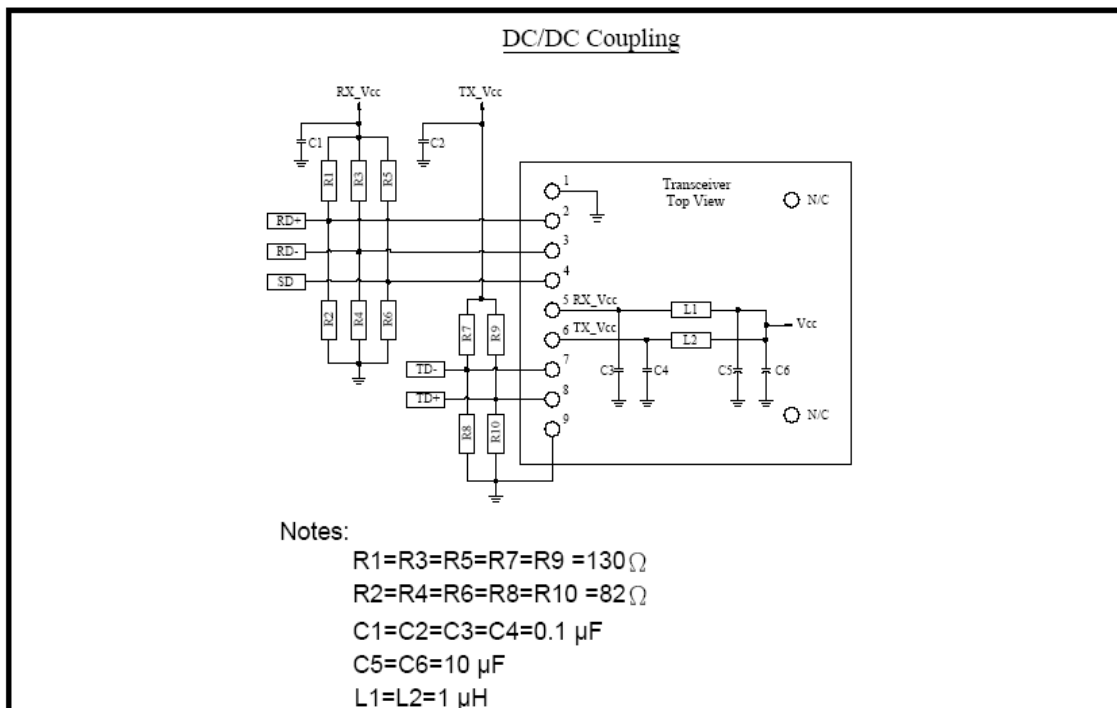
Parameter	Symbol	Min	Typ	Max	Unit
Optical Characteristics					
Optical Input Power-maximum	P_{SATIN}	-3			dBm
Receiver Sensitivity (PRBS= $2^{23}-1$; $BER \leq 10^{-10}$)	P_{SAN}			-37	dBm
Operating Center Wavelength	λ_c	1260		1600	nm
Signal Detect – Asserted	P_{SA}			-37	dBm
Signal Detect – De-asserted	P_{SD}	-45			dBm
Signal Detect - Hysteresis	P_{LH}	0.5		5	dB
Electrical Characteristics					
Data Output Voltage-High	$V_{OH}-V_{CC}$	-1.025		-0.88	V
Data Output Voltage-Low	$V_{OL}-V_{CC}$	-1.81		-1.62	V
Signal Detect Output Voltage-High	$V_{OH}-V_{CC}$	-1.025		-0.88	V
Signal Detect Output Voltage-Low	$V_{OL}-V_{CC}$	-1.81		-1.62	V

Pin Definition and Descriptions



Pin	Name	Description
1	RX GND	Receiver Signal Ground
2	RD+	Receiver Data Out
3	RD-	Receiver Data Out Bar
4	SD	Signal Detect
5	V _{CCR}	Receiver Power Supply
6	V _{CCT}	Transmitter Power Supply
7	TD-	Transmitter Data In Bar
8	TD+	Transmitter Data In
9	TX GND	Transmitter Signal Ground

Recommended Circuit Diagram



Mechanical Outlines

(Unit : mm)

