

## SFP Transceivers

### 10-Gb/s Singlemode Modules

258-SFPC10G41K3 SFP Transceiver Module • SFP+ • 10Gb/s • LC • 850 nm • 300 m • DDM

#### CHARACTERISTICS

Applications:	up to 11.3 Gb/s (10GBASE-SR/SW, SDH STM64).		
Performance:	data transmission rate:	10.3125 Gb/s	
	transmission distance:	300 m (50- $\mu$ m multimode optical fiber);	
General construction:	format:	SFP+ footprint;	
	light source:	850-nm VCSEL laser;	
	plugging:	hot-pluggable;	
	connector type:	duplex LC;	
Electrical:	encasing:	metal, EMI-screening.	
	supply voltage:	3.135 V–3.465 V, 3.3 V typ;	
	limit supply voltage:	min: -0.5 V;	
		max: 3.6 V;	
	supply current:	300 mA max.	
	power consumption:	1 W max;	
	grounding:	circuit/chassis grounds internally isolated.	
	TRANSMITTER:		
	single-ended input voltage tolerance:	min: -0.3 V;	
		max: 4 V;	
	AC CM input voltage tolerance:	15 mV RMS min;	
	differential input voltage swing:	min: 180 mVpp;	
	max: 700 mVpp;		
transmit disable assert time:	10 $\mu$ s max;		
differential input impedance <sup>1</sup> :	min: 90 Ohm;		
	typ: 100 Ohm;		
	max: 110 Ohm;		
transmit enable voltage <sup>2</sup> :	min: Vee;		
	max: Vee+0.8 V.		
RECEIVER:			
differential output voltage swing:	min: 300 mVpp;		
	max: 850 mVpp;		
differential output impedance <sup>3</sup> :	min: 90 Ohm;		
	typ: 100 Ohm;		
	max: 110 Ohm;		
data output rise and fall time <sup>4</sup> :	28 ps min;		
LOS assert voltage <sup>5</sup> :	min: Vcc-1.3 V;		
	max: Vcc;		
LOS de-assert voltage <sup>5</sup> :	min: Vee;		
	max: Vee+0.8 V;		
power supply rejection <sup>6</sup> :	100 mVpp min;		
Optical:	TRANSMITTER:		
	center wavelength <sup>7</sup> :	min: 840 nm;	
		typ: 850 nm;	
		max: 860 nm;	
	average optical power <sup>8</sup> :	min: -6 dBm;	
		max: -1 dBm;	
	off output power:	-30 dBm max;	
	relative intensity noise:	-128 dB/Hz max;	
	spectral width:	0.85 nm max;	
	extinction ratio:	3 dB min;	
	eye mask:	IEEE 802.3ae.	
	RECEIVER:		
center wavelength:	min: 770 nm;		
	typ: 850 nm;		
	max: 860 nm;		
sensitivity (average power) <sup>9</sup> :	-10 dBm max;		
input saturation power (overload):	0.5 dBm min;		
damage threshold:	5 dBm;		
LOS de-assert:	-14 dBm max;		
LOS assert:	-30 dBm min;		
LOS hysteresis:	0.5 dB min.		
Environmental:	case operating temperature:	min: 0 °C ( 32 °F);	
		max: 70 °C (158 °F);	
Mechanical:	storage temperature:	min: -40 °C (-40 °F);	
		max: 85 °C (185 °F).	
	operating humidity:	85 % RH max, non-condensing.	
Compliance:	SFF8472 Management Interface for SFP+.		
	European Directive 2002/95/EC (RoHS).		
Compatibility:	Cisco Systems tagged.		



- <sup>1</sup> Connected directly to Tx data input pins, AC-coupled thereafter.
- <sup>2</sup> Or open circuit.
- <sup>3</sup> Input 100-Ohm differential termination.
- <sup>4</sup> Unfiltered 20–80% values.
- <sup>5</sup> Loss of Signal is LVTTTL. Logic 0 indicates normal operation; logic 1 indicates no signal detected.
- <sup>6</sup> Receiver sensitivity is compliant with power supply sinusoidal modulation of 20 Hz to 1.5 MHz up to specified value.
- <sup>7</sup> Class 1 Laser Safety per FDA/CDRH and IEC-825-1 regulations.
- <sup>8</sup> Launched power (average) is power coupled into a singlemode fiber with master connector.
- <sup>9</sup> Measured with 850-nm light source, ER=3.0 dB, BER=<math>10^{-12}</math> @ 10.3125 Gb/s, PRBS=2<sup>31</sup>-1 NRZ.

BEZEL	1	VeeT	VeeT	20	HOST
	2	TXFault	TD-	19	
	3	TXDisable	TD+	18	
	4	SDA	VeeT	17	
	5	SCL	VccT	16	
	6	MOD-ABS	VccR	15	
	7	RS0	VeeR	14	
	8	RX-LOS	RD+	13	
	9	RS1	RD-	12	
	10	VeeR	VeeR	11	

