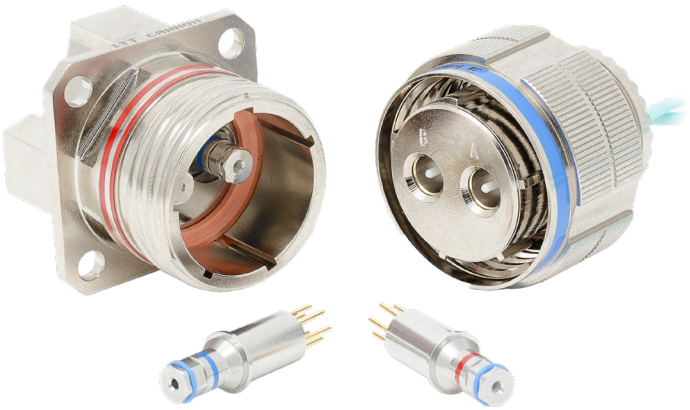
Cannon's Cu Light Series Copper-to-Fiber Conversion

Size #8 TOSA-ROSA for 10 Gbps Copper-to-Fiber conversion in military circular connectors

KJCTF Shell
38999 Series III



Transmitter TOSA
VCSEL Laser
(Blue Band)

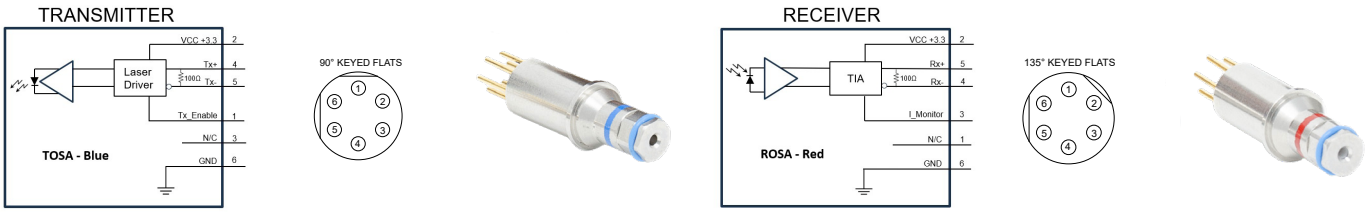
Receiver ROSA
Photodiode
(Red Band)

Features & Benefits

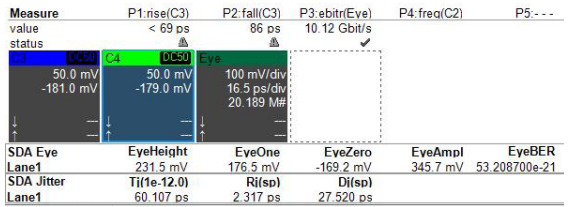
- Ruggedized Copper to Fiber Transmitters and Receivers
- Interfaces to KJCTF Plug with ARINC 801 (1.25mm Ceramic Ferrule) Termini
- Terminates to PCB or Flex Circuit with HS Interface Board Connector
- Sealed Design Eliminates Moisture Ingress
- Ruggedized for Shock and Vibration Environments
- Replacement for High-Speed Copper Quadrax Contacts
- Field Replaceable (FR-FR) Contact Retention System allows for maximum "Mission Readiness"

Designed per MIL-PRF-38534 requirements, Cu Light offers a robust, TOSA-ROSA Copper-to-Fiber conversion in a Size #8 contact system that can be deployed in any Cannon harsh-environment connector. With operating speeds +10 Gbps, this revolutionary solution allows the copper-to-fiber conversion within the connector contact system instead of requiring a secondary media converter box. This provides an ideal solution when EMI resistant optical fibers are needed for longer transmission distances. The solution also provides the designer and end-user with field-replaceable pluggable (FR-FR) contact retention system to ensure field-readiness for your mission-critical design.

Performance	100 Mbps to 10.125 Gbps
Tested to MIL-Spec Standard	MIL-PRF-38534 (MCM)
	MIL-DTL-38999 Series III
Termini Size	Size #8 Active Optical Contact System
Shell Size	9, 17, 21, 23, 25



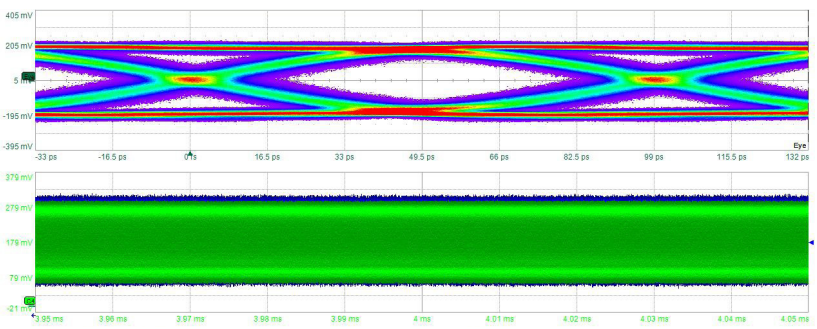
Test Performance



Measure	P1:rise(C3)	P2:fall(C3)	P3:ebitr(Eye)	P4:freq(C2)	P5:- - -
value	< 69 ps	86 ps	10.12 Gbit/s		
status					

C3	C4	Eye
50.0 mV	50.0 mV	100 mV/div
-181.0 mV	-179.0 mV	16.5 ps/div
		20.189 M#

SDA Eye	EyeHeight	EyeOne	EyeZero	EyeAmpl	EyeBER
Lane1	231.5 mV	176.5 mV	-169.2 mV	345.7 mV	53.208700e-21
SDA Jitter	Ti(1e-12.0)	Ri(sp)	Di(sp)		
Lane1	60.107 ps	2.317 ps	27.520 ps		



Ordering Guide

1 - Series	2 - Shell Stye	3 - Shell Size	4 - Hardware Finish	5 - Contact Arrangement	6 - CTF Function	7 - Contact Type	8 - Clocking Position
KJCTF	0	25	F	8	T	2	N

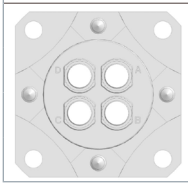
1 - Series	
KJCTF	Cu Light - Series III 38999-style / KJA
2 - Shell Style	
0	Wall Mount Receptacle with Clinch Nuts
6	Straight Plug **(Note 1)**
7	Jam Nut Receptacle
3- Shell Size	
9, 17, 21, 23, 25	

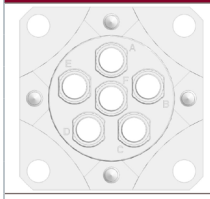
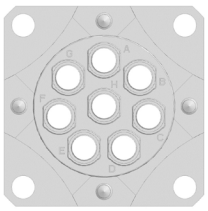
Note 1: ARINC 801 termini and cable assemblies sold separately for straight plug.

4 - Hardware Finish	
F	Aluminum Alloy with Electroless Nickel Finish
W	Aluminum Alloy with O.D. Chromate over Cadmium over Electroless Nickel Finish
Z	Aluminum Alloy with Black Zinc Nickel Finish
T	Aluminum Alloy with Teflon Nickel Finish
K	Stainless Steel with Passivation Finish
S	Stainless Steel with Electroless Nickel Finish
J	Composite with O.D. Chromate over Cadmium over Electroless Nickel Finish
M	Composite with Electroless Nickel Finish

5 - Contact Arrangement	
9*5, 17*75, 21*75, 23*6, 25*8	
6 - CTF Function (See below table)	
T	Transmit
R	Receive
X	Transceiver
P	ARINC 801 Pin Termini (Shell Style 6 Only)
7- Contact Type	
1	100 Mbps to 3.25 Gbps
2	3.25 to 10.0 Gbps
8 - Clocking Position	
N (normal), A, B, C, D, E	

Contact Arrangement Table

Layout (Shell Size * Contact Arrangement)		Contact Position	CTF Function*		
			X	T	R
	9*5	A	N/A	Transmitter	Receiver
	17*75	A	Transmitter	Transmitter	Receiver
		B	Receiver		
	21*75	A	Transmitter	Transmitter	Receiver
		B	Receiver		
		C	Transmitter		
		D	Receiver		

Layout (Shell Size * Contact Arrangement)		Contact Position	CTF Function*		
			X	T	R
	23*6	A	Transmitter	Transmitter	Receiver
		B	Receiver		
		C	Transmitter		
		D	Receiver		
		E	Transmitter		
		F	Receiver		
	25*8	A	Transmitter	Transmitter	Receiver
		B	Receiver		
		C	Transmitter		
		D	Receiver		
		E	Transmitter		
		F	Receiver		
		G	Transmitter		
		H	Receiver		

*CTF Function - X: Transceiver, T: Transmitter, R: Receiver

Specifications

Parameter	Min	Typ	Max
Absolute Maximum Ratings			
Storage Temperature (°C)	-40		+125
Operating Conditions			
Supply Voltage (V)	3.135	3.3	3.465
Supply Current (mA)		28	40
Power Supply Noise (Peak-Peak) (mV)			100
Electro-Optical Characteristics - Receiver			
Optical Wavelength (nm)	840		860
Receiver Differential Output Impedance (Ohms)		100	
Differential Output Voltage Swing (mV_{p-p})	180		330

Parameter	Min	Typ	Max
Electro-Optical Characteristics – Transmitter			
Optical Output Power (dBM)	Consult factory		
Optical Wavelength (nm)	840	850	860
Spectral Width, rms (nm)			0.05
Relative Intensity Noise (dB/Hz)			-128
Transmitter Differential Input Impedance (Ohms)		100	
Differential Input Voltage (mV_{p-p})	200		1200

ESD Handling Precautions: Both TOSA and ROSA contacts are susceptible to damage from electrostatic discharge (ESD). Please handing these contacts in an ESD controlled work area.

VCSEL Laser Safety: Emitted laser radiation by the VCSEL TOSA contacts can be harm eyes. Avoid direct eye exposure.

Connect with your ITT Cannon representative today or visit us at ittcannon.com

Follow us

NORTH AMERICA

USA - Irvine, CA
+1.800.854.3028
MEXICO - Nogales
+52.631.3110050

EUROPE

GERMANY - Weinstadt
+49.7151.699.0
UK - Basingstoke
+44.1256.347400
ITALY - Lainate
+39.02938721
FRANCE
+33.1.60.04.93.93

ASIA PACIFIC

SINGAPORE
+65 66974205
JAPAN - Kanagawa
+81.462.57.2010
KOREA
+82.2.702.7111
CHINA - Shenzhen City
+86.755.2726.7888
HONG KONG
+852.2732.2720

ITT Cannon CuLight SS 12/2025