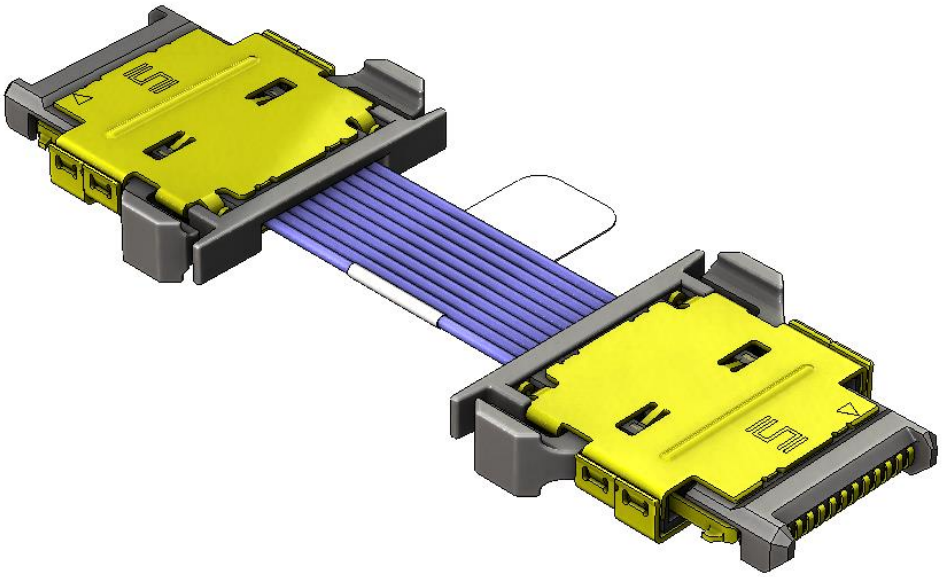
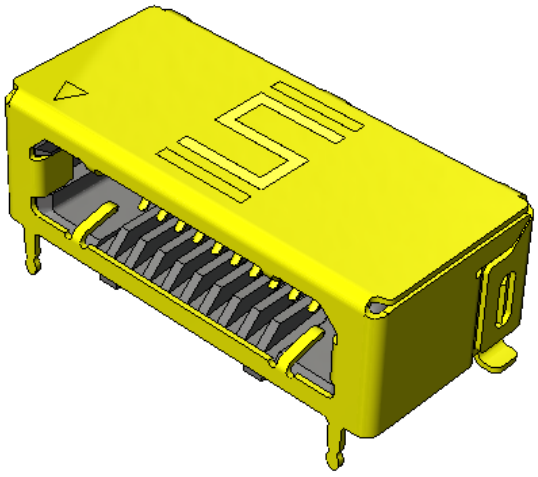
Series: FCF8 / FCS8 0,80 mm (.0315”) High Speed Cost-Effective Micro Coax Cable Assembly / Receptacle

FCF8 Series



FCS8 Series



See www.samtec.com for more information.

Series: FCF8 / FCS8 0,80 mm (.0315") High Speed Cost-Effective Micro Coax Cable Assembly / Receptacle

1.0 SCOPE

1.1 This specification covers performance, testing and quality requirements for Samtec FCF8/FCS8 0,80 mm (.0315") High Speed Cost-Effective Micro Coax Cable Assembly / PCB Receptacle. All information contained in this specification is for a 10 position assembly with 38 AWG Coax unless otherwise noted.

2.0 DETAILED INFORMATION

2.1 Product prints, catalog pages, test reports and other specific, detailed information can be found at http://www.samtec.com/?FCF8 and http://www.samtec.com/?FCS8.

3.0 TESTING

3.1 Current Rating: 1.8 A (One Pin Powered Per Row)
3.2 Voltage Rating: 260 VAC
3.3 Operating Temperature Range: -25°C to +105°C
3.4 Operating Humidity Range: 90% to 95% (Per EIA-364-31)
3.5 Electrical:

ITEM	TEST CONDITION	REQUIREMENT	STATUS
Withstanding Voltage	EIA-364-20 (No Flashover, Sparkover, or Breakdown)	780 VAC	Pass
Insulation Resistance	EIA-364-21 (1000 MΩ minimum)	5,000 MΩ	Pass
Contact Resistance (LLCR)	EIA-364-23	Δ 15 mΩ maximum (Samtec defined)/ No damage	Pass

3.6 Mechanical:

ITEM	TEST CONDITION	REQUIREMENT	STATUS
Durability	EIA-364-09C	25 cycles minimum	Pass
Random Vibration	EIA-364-28 Condition V, Letter B 7.56 G 'RMS', 50 to 2000 Hz, 2 hours per axis, 3 axis total , PSD 0.04	Visual Inspection: No Damage LLCR: Δ 15 mΩ maximum Event Detection: No interruption > 50 nanoseconds	Pass
Mechanical Shock	EIA-364-27 100 G, 6 milliseconds, sawtooth wave, 11.3 fps, 3 shocks/direction, 3 axis (18 total shocks)	Visual Inspection: No Damage LLCR: Δ 15 mΩ maximum Event Detection: No interruption > 50 nanoseconds	Pass
Normal Force	EIA-364-04	30 grams minimum for gold interface	Pass

Series: FCF8 / FCS8 0,80 mm (.0315") High Speed Cost-Effective Micro Coax Cable Assembly / Receptacle

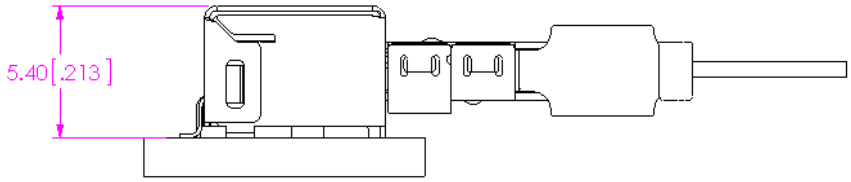
3.7 Environmental:

ITEM	TEST CONDITION	REQUIREMENT	STATUS
Thermal Shock	EIA-364-32 Thermal Cycles: 100 (30 minute dwell) Hot Temp: 85°C Cold Temp: -55°C Hot/Cold Transition: Immediate	Visual Inspection: No Damage LLCR: Δ 15 mΩ DWV: 780 VAC IR: >100,000 MΩ	Pass
Thermal Aging (Temp Life)	EIA-364-17 Test Condition 4 @ 105°C Condition B for 250 hours	Visual Inspection: No Damage LLCR: Δ 15 mΩ DWV: 780 VAC IR: >100,000 MΩ	Pass
Cyclic Humidity	EIA-364-31 Test Temp: 25°C to 65°C Relative Humidity: 90 to 95% Test Duration: 240 hours	Visual Inspection: No Damage LLCR: Δ 15 mΩ DWV: 780 VAC IR: >100,000 MΩ	Pass
Gas Tight	EIA-364-36 Gas Exposure: Nitric Acid Vapor Duration: 60 min. Drying Temp.: 50°C +/- 3°C Measurements: Within 1 hour of Exposure	LLCR: Δ 15 mΩ	Pass

Series: FCF8 / FCS8 0,80 mm (.0315") High Speed Cost-Effective Micro Coax Cable Assembly / Receptacle

4.0 MATED SYSTEM

4.1 Mated View

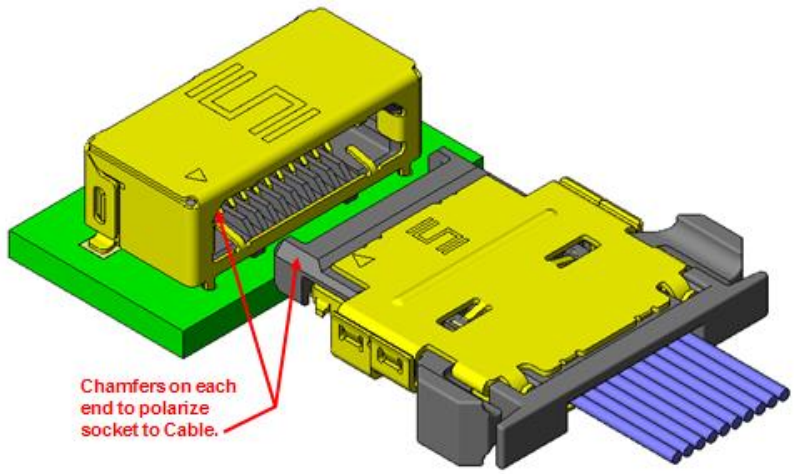


4.2 Signal Mapping

No OF POSITIONS		PIN #																																
-10	FIRST END PIN #	GND	01	02	03	04	05	06	07	08	09	10	GND																					
	SECOND END PIN #	GND	10	09	08	07	06	05	04	03	02	01	GND																					
-20	FIRST END PIN #	GND	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	GND											
	SECOND END PIN #	GND	20	19	18	17	16	15	14	13	12	11	10	09	08	07	06	05	04	03	02	01	GND											
-30	FIRST END PIN #	GND	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	GND	
	SECOND END PIN #	GND	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	09	08	07	06	05	04	03	02	01	GND	

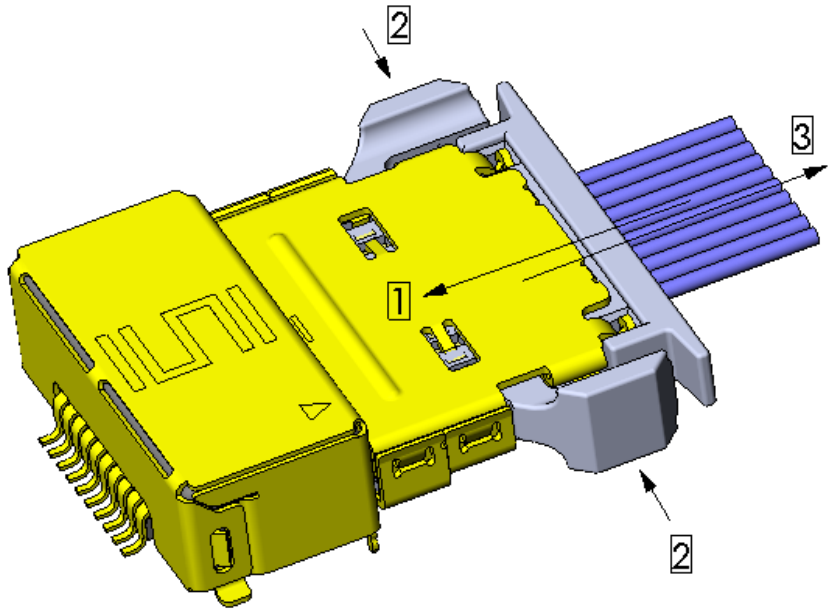
4.2.1 Custom signal mapping available as non-standard. Contact **HDR@samtec.com** for more details.

5.0 POLARIZING FEATURES



Series: FCF8 / FCS8 0,80 mm (.0315”) High Speed Cost-Effective Micro Coax Cable Assembly / Receptacle

6.0 LATCH FEATURES: To disengage cable from socket, first, fully seat connector; second fully depress latch release; third, pull straight back with latch released depressed.



7.0 HIGH SPEED PERFORMANCE

7.1 Based on a 7 dB insertion loss

Assembly	Single-Ended Signaling	Differential Pair Signaling
0.25 m (9.84”) length	6.5 GHz / 13 Gbps	7.5 GHz / 15 Gbps
1.00 m (39.37”) length	1.5 GHz / 3 Gbps	2.5 GHz / 5 Gbps

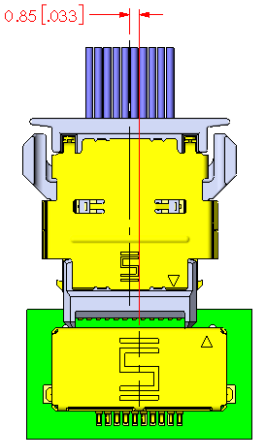
7.2 System Impedance: 50 ohm single-ended; 100 ohm differential pair

Series: FCF8 / FCS8 0,80 mm (.0315”) High Speed Cost-Effective Micro Coax Cable Assembly / Receptacle

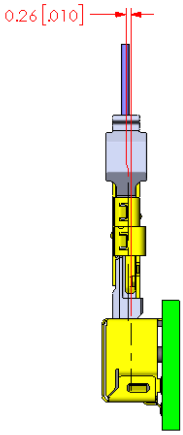
8.0 PROCESSING RECOMMENDATIONS

8.1 Mating Alignment Requirements:

8.1.1 Allowable initial linear misalignment.



INITIAL X AXIS LINEAR MISALIGNMENT

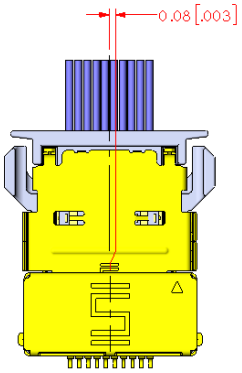


INITIAL Y AXIS LINEAR MISALIGNMENT

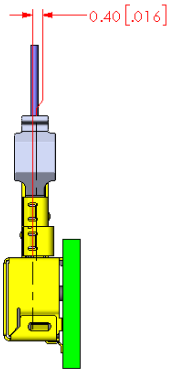
NON APPLICABLE

INITIAL Z AXIS LINEAR MISALIGNMENT

8.1.2 Allowable final linear misalignment.



FINAL X AXIS LINEAR MISALIGNMENT



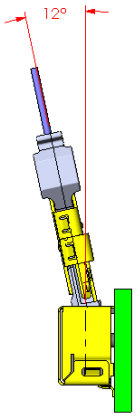
FINAL Y AXIS LINEAR MISALIGNMENT

SEE MATED VIEWS

FINAL Z AXIS LINEAR MISALIGNMENT

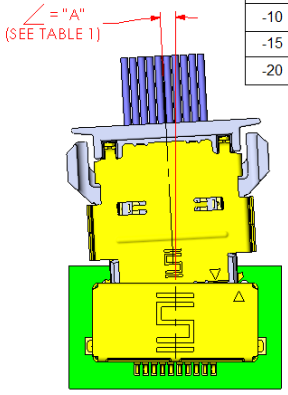
8.2 Mating Angle Requirements:

8.2.1 Allowable initial angular misalignment.



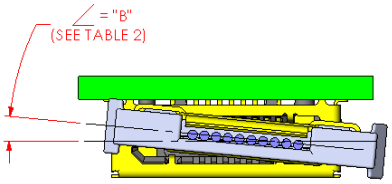
INITIAL X AXIS ANGULAR MISALIGNMENT

TABLE 1			
POS	"A"= DEG	POS	"A"= DEG
-05	6.7	-25	1.1
-10	3	-30	0.9
-15	1.9	-35	0.8
-20	1.4	-40	0.7



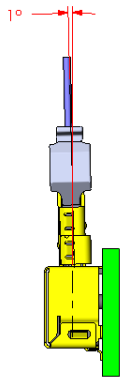
INITIAL Y AXIS ANGULAR MISALIGNMENT

TABLE 2			
POS	"B"= DEG	POS	"B"= DEG
-05	11	-25	1.9
-10	5.0	-30	1.6
-15	3.2	-35	1.3
-20	2.4	-40	1.2



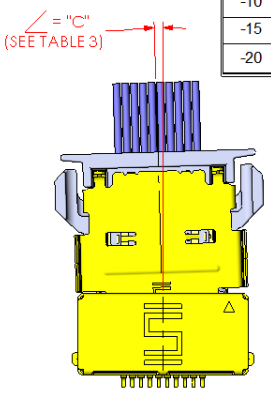
INITIAL Z AXIS ANGULAR MISALIGNMENT

8.2.2 Allowable final angular misalignment.



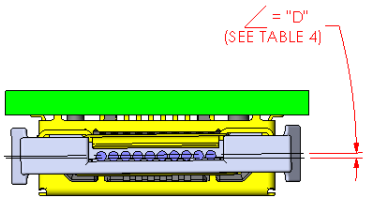
FINAL X AXIS ANGULAR MISALIGNMENT

TABLE 3			
POS	"C"= DEG	POS	"C"= DEG
-05	4.5	-25	0.8
-10	2.0	-30	0.6
-15	1.3	-35	0.5
-20	0.9	-40	0.5



FINAL Y AXIS ANGULAR MISALIGNMENT

TABLE 4			
POS	"D"= DEG	POS	"D"= DEG
-05	2.3	-25	0.4
-10	1.0	-30	0.3
-15	0.6	-35	0.3
-20	0.5	-40	0.2



FINAL Z AXIS ANGULAR MISALIGNMENT

8.3 Due to variances in equipment, solder pastes and applications (board design, component density, etc.), Samtec does not specify a recommended reflow profile for our connectors. The processing parameters provided by the solder paste manufacturer should be employed and can usually be found on their website.

All of Samtec's surface mount components are lead free reflow compatible and compliant with the profile parameters detailed in IPC/JEDEC J-STD-020 which requires that components be capable of withstanding a peak temperature of 260°C as well as 30 seconds above 255°C.

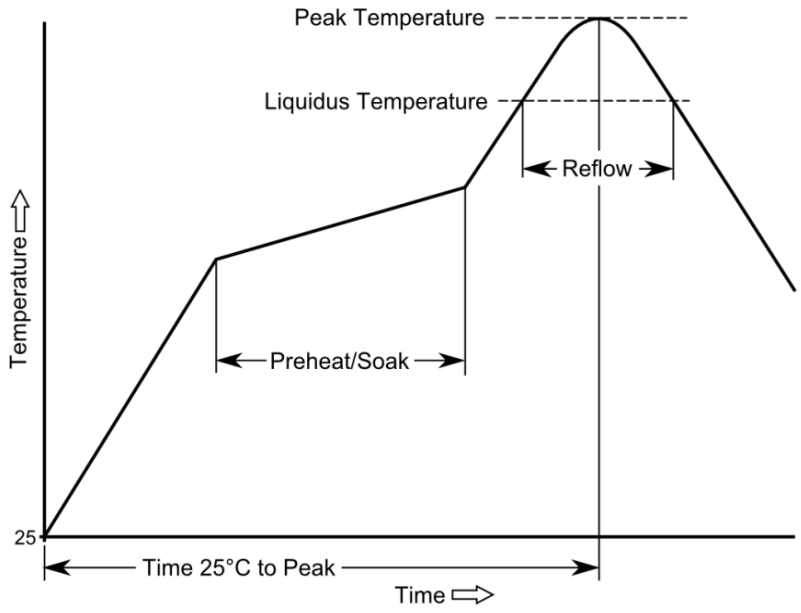
Samtec Recommended Temperature Profile Ranges (SMT)

Sn-Pb Eutectic Assembly

Preheat/Soak (100°C-150°C)	Max Ramp Up Rate	Reflow Time (above 183°C)	Peak Temp	Time within 5°C of 235°C	Max Ramp Down Rate	Time 25°C to Peak Temp
60-120 sec.	3°C/s max.	40-150 sec.	235°C	20 sec. max.	6°C/s max.	6 min. max.

Pb-Free Assembly

Preheat/Soak (150°C-200°C)	Max Ramp Up Rate	Reflow Time (above 217°C)	Peak Temp	Time within 5°C of 260°C	Max Ramp Down Rate	Time 25°C to Peak Temp
60-120 sec.	3°C/s max.	40-150 sec.	260°C	30 sec. max.	6°C/s max.	8 min. max.



8.3.1

These guidelines should not be considered design requirements for all applications.
Samtec recommends testing interconnects on your boards in your process to guarantee optimum results.

8.4 Maximum Reflow Passes: The parts can withstand three reflow passes at a maximum component temperature of 260°C.

8.5 Stencil Thickness: The recommended stencil thickness is .006" (0,15 mm).

8.6 Placement: Machine placement of the parts is strongly recommended.

8.7 Reflow Environment: Samtec recommends the use of a low level oxygen environment (typically achieved through Nitrogen gas infusion) in the reflow process to improve solderability.

8.8 Cleaning: Samtec, Inc. has verified that our connectors may be cleaned in accordance with the solvents and conditions designated in the EIA-364-11 standard.

9.0 ADDITIONAL RESOURCES

9.1 For additional mechanical testing or product information, contact our Customer Engineering Support Group at **CES@samtec.com**

9.2 For additional information on high speed performance testing, contact our Signal Integrity Group at **SIG@samtec.com**

9.3 For additional application information, contact our High Speed Cable Group at **HDR@samtec.com**

9.4 For RoHS, REACH or other environmental compliance information, contact our Product Environmental Compliance Group at **PEC@samtec.com**