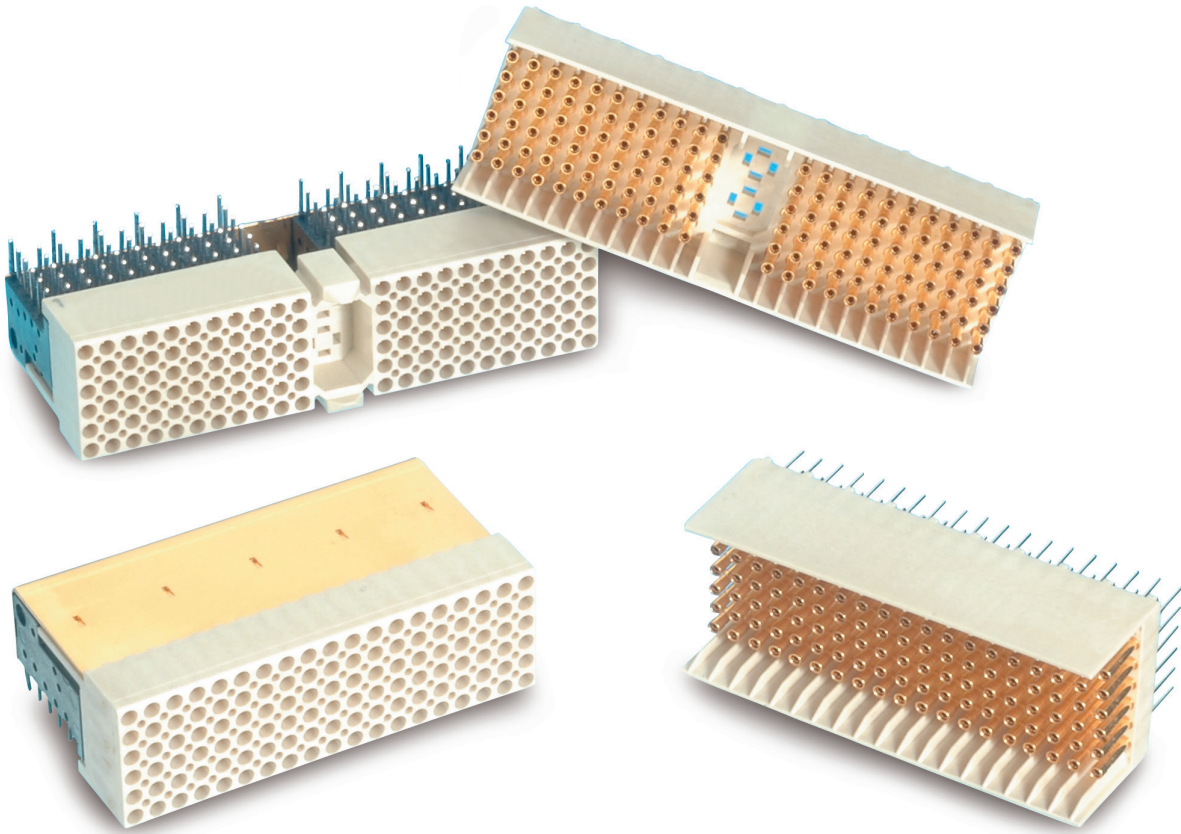


smiths connectors

cPCI SERIES

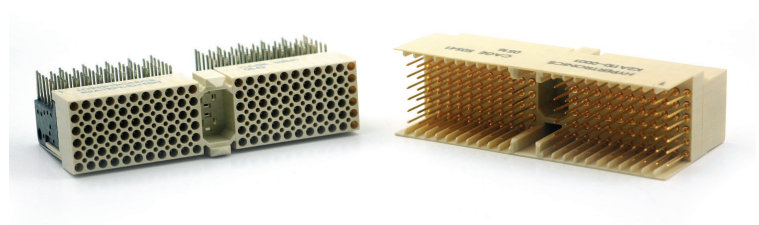


RUGGEDIZED cPCI SERIES (2MM) CONNECTORS

INTERCHANGEABLE COMPACT PCI COTS SYSTEMS

FEATURES:

- ▶ Rugged implementation of the Compact PCI Standard
 - Physical hole pattern in accordance with cPCI PICMG 2.0
 - Contact identification in accordance with IEC 1076-4 101
- ▶ Reliable Hypertac® contact technology with its field proven immunity to shock and vibration
- ▶ Highly optimized connector design for ruggedness and high speed signal integrity up to 3.125 Gbps
- ▶ Hi-Rel and NASA GSFC Qualified versions
 - Only cPCI approved by NASA
 - LCP insulator meets NASA outgassing requirements
 - Press –Fit also available for receptacle assembly: consult factory

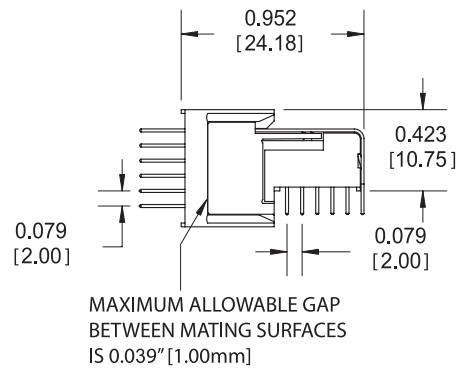
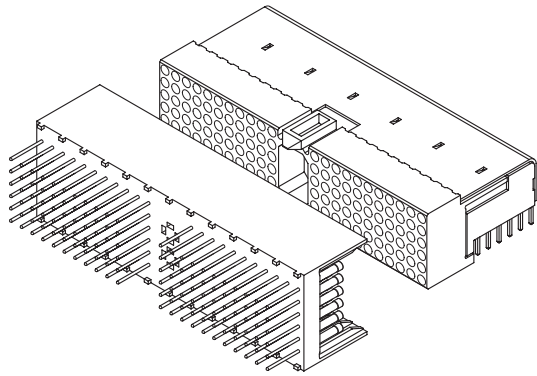


Qualification Testing

The 2mm cPCI family of connectors meets applicable performance requirements of EEE-INST-002, GEVS-SE Rev. A, and is qualified to NASA GSFC S-311-P-822 specifications.

GENERAL SPECIFICATIONS	QCI (Quality Conformance Inspections)					
	K2 Series = MIL-DTL-55302 311P Series = NASA GSFC S-311-P-822					
3U / 6U Form Factor	P1 / P4	P2 / P5	P3	J1 / J4	J2 / J5	J3
Part Number Reference	K2A110FMD	K2B110FMD	K2B095FMD	K2A110FFD	K2B110FFD	K2B095FFD
Design Criteria	IEC 1076-4 101					
Contact Gender	Male Pin			Hypertac 0.40mm socket		
Contact Termination	Solder tail 63/37 tin lead plated			Gold or 63/37 tin lead dipped		
Contact Spacing	2.00mm					
Number of Contacts	110 signal 22 ground		95 signal 19 ground	110 signal 22 ground		95 signal 19 ground
Contact Current Rating	1 Amp					
Temperature Range	-55° C to 125° C					
Insulator Material	30% Glass Filled LCP (meets NASA outgassing specification)					
Flammability Rating	94 V-O					
Insulation Resistance	> 5000 megohm					
Contact Material	Beryllium copper pin contacts			Beryllium copper Hypertac socket wires and brass body		
Mating Contact Plating	50µin gold / 50µin nickel min.					
Maximum Allowable Gap Between Mating Connectors	0.039 inches [1.00mm]					
Suggested Printed Circuit Board Hole Diameter	0.71±.05mm after plating			0.60mm after plating		
Weight	0.55 oz.	0.53 oz.	0.38 oz.	0.38 oz.	0.45 oz.	0.31 oz.

2MM CONNECTOR MATED PAIR



PERFORMANCE SPECIFICATIONS

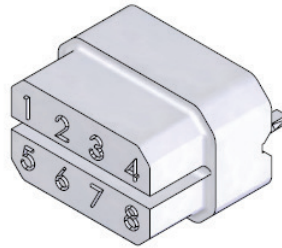
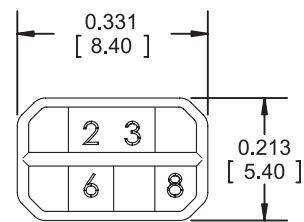
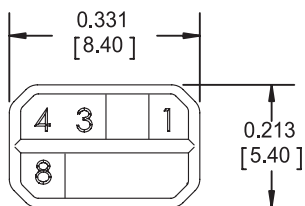
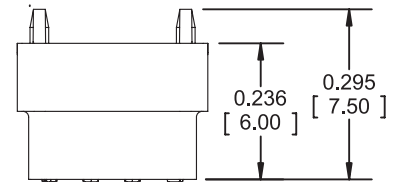
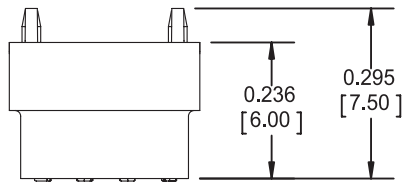
3U / 6U Form Factor	P1 / P4	P2 / P5	P3	J1 / J4	J2 / J5	J3
Part Number Reference	K2A110FMD	K2B110FMD	K2B95FMD	K2A110FFD	K2B110FFD	K2B95FFD
LLCR (Low Level Contact Resistance)	7.20 milliohms average					
DWV (Dielectric Withstanding Voltage)	1000V RMS					
Contact Life (Mate / Demate)	> 4000 Cycles (per mated connector pair)					
Mating Force	16.38 LBF average (per mated connector pair)					
Demating Force	13.2 LBF average (per mated connector pair)					
Vibration (Sinusoidal)*	Frequency 10 to 2000 HZ at 15 G (MIL-DTL-55302) (NASA GSFC S311-P-822)					
Vibration (Random)**	Flight chassis unit level vibration (NASA Goddard GEVS SE Rev A)					
Mechanical Shock*	100 G peak value (NASA GSFC S311-P-822)					

* Testing was performed to determine if fretting occurs due to mechanical motion and to evaluate the integrity of the Hypertac contact system under severe shock. To validate the test, event detection was performed at 10 nanoseconds. **There were no events recorded.**

** Testing was performed using a 6U Flight Chassis to determine if fretting occurs due to mechanical motion and to evaluate the integrity of the test samples relative to severe mechanical environment. To validate the test, event detection was performed at 50 nanoseconds. **There were no events recorded.**

MPC (MULTI-PURPOSE CENTER) KEYING OPTIONS AVAILABLE

Material: 30% glass filled LCP – meets NASA outgassing requirements.
Color: natural



[EXAMPLE FOR CODE 1348]

[EXAMPLE FOR CODE 2368]

MATCHING CODES MALE SIDE (PCB)	KEYSET MPC KEY P/N	Intermates with	MATCHING CODES FEMALE SIDE (BACKPLANE)	KEYSET MPC KEY P/N
1234	ZK2000-002-01	→	5678	ZK2000-001-01
1236	ZK2000-002-03	→	4578	ZK2000-001-03
1237	ZK2000-002-04		4568	ZK2000-001-04
1238	ZK2000-002-05		4567	ZK2000-001-05
1246	ZK2000-002-07		3578	ZK2000-001-07
1247	ZK2000-002-08		3568	ZK2000-001-08
1268	ZK2000-002-14		3457	ZK2000-001-14
1345	ZK2000-002-16		2678	ZK2000-001-16
1348	ZK2000-002-19		2567	ZK2000-001-19
1357	ZK2000-002-21		2468	ZK2000-001-21
1358	ZK2000-002-22		2467	ZK2000-001-22
1378	ZK2000-002-25		2456	ZK2000-001-25
1457	ZK2000-002-27		2368	ZK2000-001-27
1467	ZK2000-002-29		2358	ZK2000-001-29
1478	ZK2000-002-31		2356	ZK2000-001-31
1568	ZK2000-002-33		2347	ZK2000-001-33
1678	ZK2000-002-35		2345	ZK2000-001-35
2346	ZK2000-002-37		1578	ZK2000-001-37
3467	ZK2000-002-59		1258	ZK2000-001-59
3478	ZK2000-002-61		1256	ZK2000-001-61
4678	ZK2000-002-69		1235	ZK2000-001-69

Note:
When assembling MPC keys into the connector, the lowest numbers should be oriented closest to row 1 on the connector.

HOW TO ORDER



1 ▶ CONNECTOR FAMILY

K2

2 ▶ CONNECTOR STYLE*

(Per IEC 1076-4-101)

A = WITH MULTI-PURPOSE CENTER (MPC; polarization feature)

B = WITHOUT MPC

3 ▶ NUMBER OF SIGNAL PINS

110 = 110 CONTACTS

095 = 95 CONTACTS

4 ▶ NUMBER OF ROWS

F = TOP SHIELD (6 row)

5 ▶ CONTACT GENDER

M = MALE D.C.

F = FEMALE B.P.

6 ▶ STRAIGHT DIP SOLDER

DESIGNATION	BACKPLANE CONNECTOR TAIL LENGTH	DAUGHTER BOARD CONNECTOR TAIL LENGTH
D	0.216 [5.50]	0.123 [3.12]
D4	0.166 [4.22]	0.166 [4.22]

7 ▶ PLATING

TAH = 50MIN GOLD OVER NICKEL (mating surface only)

OTHER SURFACES GOLD FLASH OVER NICKEL (female contacts only)

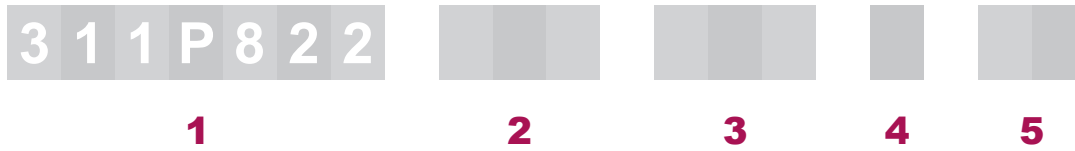
TABH = SAMPE AS TAH WITH TIN/LEAD (63/67) OVER NICKEL ON CONTACT TERMINATIONS (female contacts only)

TBH = SAME AS TH WITH TIN/LEAD (63/67) OVER NICKEL ON CONTACT TERMINATIONS (male contacts only)

Quality Conformance Inspection = MIL-DTL 55302 Group A & B

* Pin one locations per 1076-4-101

NASA GODDARD PART NUMBERS AND ORDERING INFORMATION



1 † GODDARD DESIGNATOR

2 † CONNECTOR GENDER DESIGNATION

MC = MALE CONNECTOR

FC = FEMALE CONNECTOR

MA = MALE ADAPTER

FA = FEMALE ADAPTER

FFA = FEMALE-TO-FEMALE ADAPTER

3 † NUMBER OF CONTACTS

110 = 110 CONTACTS

095 = 95 CONTACTS

4 † CONNECTOR STYLE

A = WITH MULTI-PURPOSE CENTER (MPC; polarization feature)

B = WITHOUT MPC

SOLDER TAIL FINISH

G = GOLD FLASH OVER NICKEL

S = 63/37 TINE/LEAD SOLDER OVER NICKEL

5 † SOLDER TAIL LENGTH

DESIGNATION	BACKPLANE CONNECTOR TAIL LENGTH	DAUGHTER BOARD CONNECTOR TAIL LENGTH
D	0.216 [5.50]	0.123 [3.12]
D1	0.380 [9.65]	
D2	0.630 [16.00]	
D4	0.166 [4.22]	0.166 [4.22]
D5	0.265 [6.73]	TBD

Quality Conformance Inspection = NASA GSFC S-311-P-822 Table II

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FOR MORE INFORMATION | smithsconnectors.com |



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