

L711/3 Series High & Low Frequency Integrated Connector

Brief introduction

- Comply with ILD711A (Equivalent to MIL-DTL-38999) III series
- Power, high speed, high frequency and optical contacts can be mixed
- Different contacts with the same size can be interchanged
- Microwave signal, high speed data, optical fiber and power signal can be integrately connected
- A quick screw coupling with anti-decoupling mechanism
- 100% scoop-proof
- Excellent EMI/RFI shielding
- Application: aviation, aerospace crafts and other electronic & electrical equipment

Main technical characteristics

[Mechanical]

—Shell: Aluminum alloy, stainless steel, composite material

—Plating:

W—olive green cadmium plating, aluminum alloy

F—electroless nickel plating, aluminum alloy

K—stainless steel passive

J—olive green cadmium plating, composite material

M—electroless nickel plating, composite material

—Insulator: Thermoplastic or thermoset

—Grommet and seal: Silicon rubber

—Contact: gold plating, copper alloy

—Endurance: 500 cycles

—Shock: At 3 ms half sinusoid, peak value of acceleration: 300g

—Vibration:

Sine: 60g, with temperature cycling and simulated accessories (36 hours)

Random: 44.1grms in high temperature

49.5grms in ambient temperature

[Electrical]

—shells continuity

W class: 2.5 mΩ F class: 1 mΩ

—Shielding

—10GHz: 65dB (F)

—10GHz: 50dB (W)

—1GHz: 85dB (F and W)

—Withstanding voltage (Vrms)

Service rating	Sea level	21000m
M	1300	800
N	1000	600
I	1800	1000
II	2300	1000

—Insulation resistance:

≥5000MΩ at 500Vdc

—Contact retention (mini force in N)

22D#: 45N, 20#: 67N, 8 #: 111N, 12#: 111N,

16 #: 111N

[Environmental]

—Operating temperature:

W and J class: -65°C ~ 175°C

F, K and M class: -65°C ~ 200°C

—Sealing: mated connectors meet altitude immersion requirements of MIL-C 38999

—Salt spray: According to GJB 1217, method 1001

F class: 48 h W and K class: 500 h J and M class: 2000 h

—Damp heat: according to MIL-C-38999: 24 hours, 10 cycles

—Fluid resistance: Various fuels, coolant, solvent

[Electrical characteristics of contact]

—**Power contact**

—Contact resistance:

22D#: 14.6mΩ 20#: 7.3 mΩ

16#: 3.8 mΩ 12#: 1.7 mΩ

—Current rating:

22D#: 5A 20#: 7.5A

16#: 13A 12#: 23A 10#: 40A

—**16# shielding contact**

—Low level contact resistance (only for inner contact)

Max contact resistance (mΩ)	
Initial	After test
170	204

—Test current and voltage drop:

Contact	Test current (A)	Max voltage drop (mV)		
		25°C		175°C
		Initial	After test	After test
Inner contact	1	170	204	290
Outer contact	12	150	180	255

—Voltage rating :(Between inner contact and outer contact):

Sea level: 800 Vrms; 15240m: 250 Vrms

—12# shielding contact

—Low level contact resistance (only for inner contact): initial : 55mΩ; after test: 66mΩ.

—Contact resistance (test current and voltage drop):

Contact	Test current (A)	Max voltage drop (mV) max		
		25 ₀ ⁺³ °C		200 ₀ ⁺³ °C
		Normal	After test	
Inner contact	1	170	204	290
Outer contact	12	150	180	255

—Withstanding voltage: Sea level: 750V; 15240m (11.59KPa): 250 Vrms

—12# coaxial contact

—Nominal impedance: 50Ω

—Low level contact resistance (only for inner contact)

Max contact resistance (mΩ)	
Initial	After test
55	66

—Withstanding voltage: Sea level: 1000V; 15240m (11.59KPa): 250 Vrms

—Contact resistance (Voltage drop and test current):

Contact	Test current (A)	Max voltage drop (mV)		
		25 ₀ ⁺³ °C		200 ₀ ⁺³ °C
		Normal	After test	
Inner contact	1	55	66	94
Outer contact	12	75	90	128

—VSWR:

Frequency: 500MHz~3GHz, under the following three conditions, VSWR≤1.20+0.04F(F unit: GHz)

- (1) Pin and socket are mated completely
- (2) Pin/ socket contact: 1.27±0.13mm;
- (3) Pin/ socket contact: 2.54±0.13mm;

—Insertion loss: dB max=0.11√F

(F unit: GHz), When F is at 3GHz and tested in accordance with MIL-C-39012., insertion loss should not be more than 0.20dB

— **8# twinaxial contact**

—Low level contact resistance (only for center contact and intermediate middle contact)

Max contact resistance (mΩ)	
Initial	After test
55	66

—Contact resistance (Test current and voltage drop):

Contact	Test current (A)	Max voltage drop (mV)		
		25°C		175°C
		Initial	After test	After test
Center contact	1.0	55	66	94
Intermediate contact	1.0	55	66	94
Outer contact	12	75	90	128

—Operating frequency: 0~20MHz

—Voltage rating: Sea level: 500 Vrms; 21336m: 125 Vrms

—Withstanding voltage:

Contact	Height	Test voltage (V) rms
From center to intermediate	Sea level	500
From intermediate to outer		1000

— **TDB4 contact**

—Impedance: 50Ω

—Operating frequency: 0~10GHz

—VSWR: ≤1.3

—Withstanding voltage (Between center conductor and outer conductor): 750 (Vrms)

—Insulation resistance: ≥ 1000MΩ at 500Vdc

— **8# differential contact**

2 types: 2 contacts & 4 contacts

—Withstanding voltage (Vrms)

Normal: from center conductor to outer conductor: 500V AC

- Between center conductor: 1000V AC
- Contact resistance: $\leq 15\text{m}\Omega$ (only for center contact)
- Insulation resistance (Between center conductors) : $\geq 1000\text{M}\Omega$ at 500Vdc
- Rated current: Center conductor 1A
- Data rate: 1.65Gbps

High frequency contact

Contact size	GJB P/N	International P/N	Applicable wire	
			National wire	International wire
16# shielding pin	J1216/76-424	M3	SFF-50-1.5-1	M17/113-RG316
16# shielding socket	J1216/77-428	M3	SFF-75-1.5-1	
12# shielding pin	J1216/28-211	M39029/28-2 1	SFF-50-1.5-1	M17/113-RG316
	J1216/28-412	M3		M17/173-RG316D
12# shielding socket	J1216/75-416	M3	SYV-50-2-51	M17/113-RG316
	J1216/75-422	M3		M17/173-RG316D
12# coaxial pin	J1216/102-558	M39029/102-558	SFF-50-1.5-1	M17/113-RG316
12# coaxial socket	J1216/103-559	M39029/103-559	SFF-75-1.5-1	
8# twinaxial shielding pin	J1216/90-529	M3	SEFF-78-1-51	M17/176-00002
8# twinaxial shielding socket	J1216/91-530	M3		
TDB4 high frequency pin	TDB4-Ka		670-141	
TDB4 high frequency socket	TDB4-Ja		670-141	
8# differential (2-pin, 100 Ω)	CF81/211-01	—		HDP700001070
8# differential (2-socket, 100 Ω)	CF82/211-01	—		
8# differential (4-pin, 100 Ω)	CF81/411-01	—		CEC-RWC-18664
8# differential (4-socket, 100 Ω)	CF82/411-01	—		

High Frequency Contact Assembly Instruction

For high frequency contact assembly note, see appendix 2

Ordering information

Basic series	L711/	20	W	B	10	P	N			
Type	20- Square flange receptacle 24- Jam nut receptacle 26-RFI-shielding plug									
Plating	W –Olive green cadmium plating F –Electroless nickel plating K–Stainless steel passive J–Composite, olive green cadmium plating M–Composite, electroless nickel plating									
Shell size	A to J	<u>09</u>	<u>11</u>	<u>13</u>	<u>15</u>	<u>17</u>	<u>19</u>	<u>21</u>	<u>23</u>	<u>25</u>
Index No.		A	B	C	D	E	F	G	H	J
Insert arrangement	See insert arrangement									
Contact type*	P – pin A designated pin S – socket B designated socket PF—8# differential pin SF—8# differential socket									
Polarization	N –Normal A/B/C/D/E –alternative									

Note: When the pin or socket is normal, contact type should be P (or S); When the pin or socket is special, P (or S) should be changed to A (or B) and the quantity of contacts should be noted after P/N, but the quantity should not marked on product marking.

[Part number example]

Square flange receptacle, electroless nickel plating, 06 insert arrangement, pin, N polarization; P/N should be L711/20FE06PN. If six 12# power pins are changed to six 12# coaxial pins, P/N should be L711/20FE06AN (6-J1216/102-558)

Polarization and outline dimension







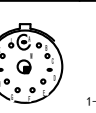
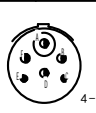
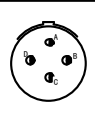
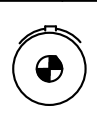
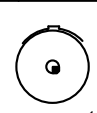



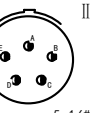
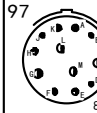
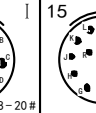
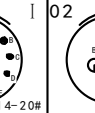
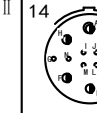

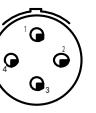
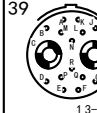

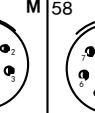
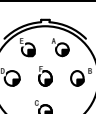
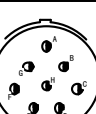
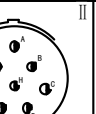





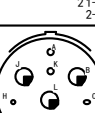
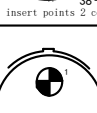
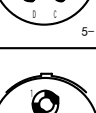
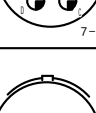

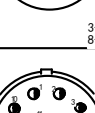
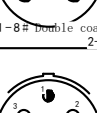
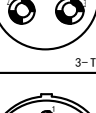
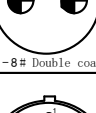
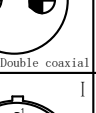
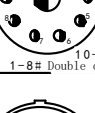
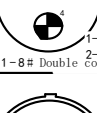
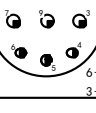
[Same as L711/3 Series electrical connector]

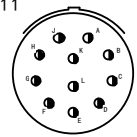
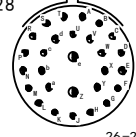
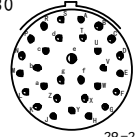
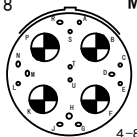
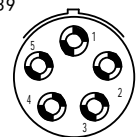
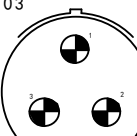
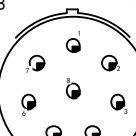
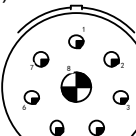
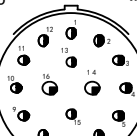
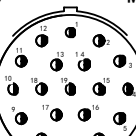
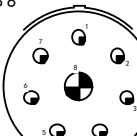
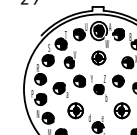
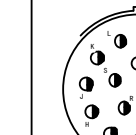
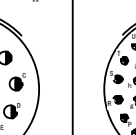
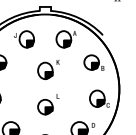
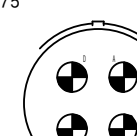
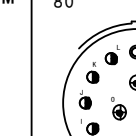
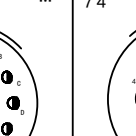
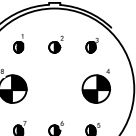
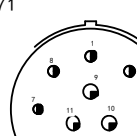
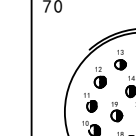
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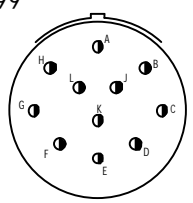
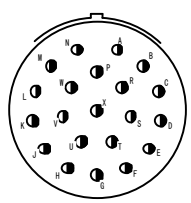
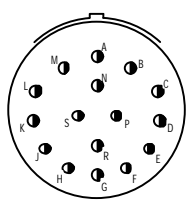
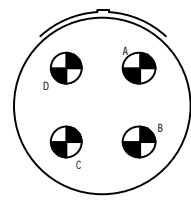
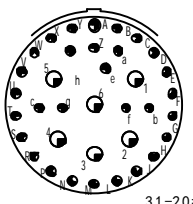
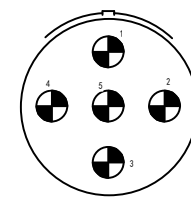
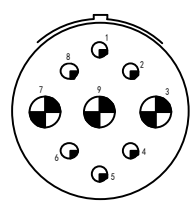
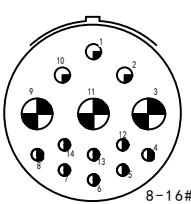
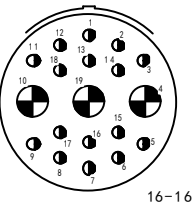
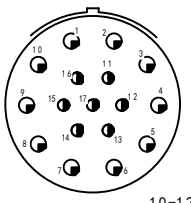
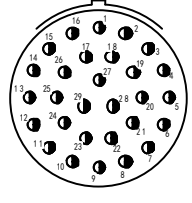
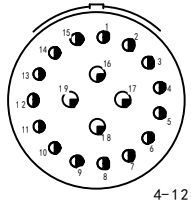
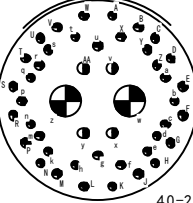
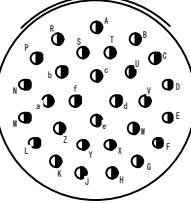
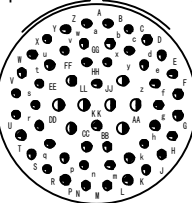
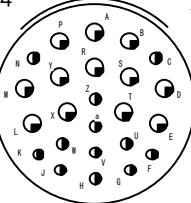
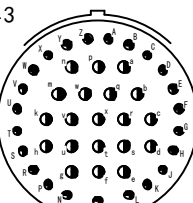
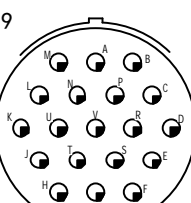
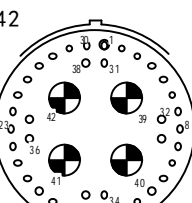
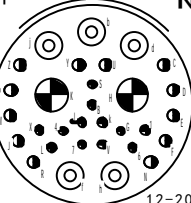
Note: 12# power contacts, 12# shielding contacts and 12# coaxial contacts are in 12# cavity.

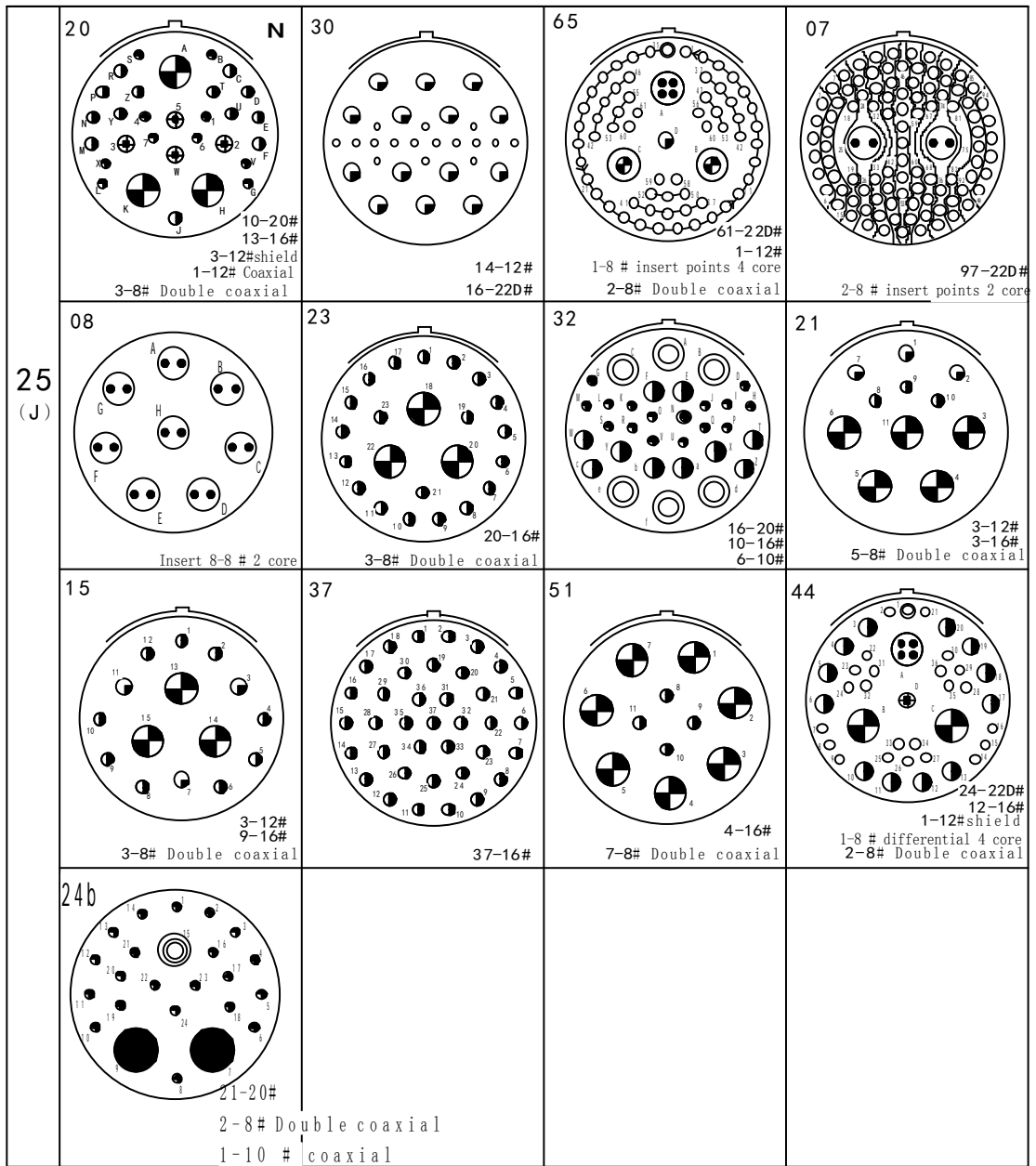
16# power contacts and 16# shielding contacts are in 16# cavity.

8# power contacts, 8# twinaxial contacts and 8# differential contacts are in 8# cavity.

Shell number 09 (A)	10  1-12#	11  1-16#			
11 (B)	01  1-12#	02  2-16#	81  1-8# Double coaxial	43  3-16#	
13 (C)	12  1-12# 11-22D#	60  4-16# 2-20#	04  4-16#	01  1-8# Double coaxial	24  1-12#
	02  2-12#	43  3-16#	45  5-16#		
15 (D)	05  5-16#	97  8-20# 4-16#	15  14-20# 1-16#	02  2-12#	14  8-22# 6-16#
	12  8-22# 2-20# 2-12# shield	38  4-12#	39  13-22D# 2-TDB4#	48  8-16#	58  7-16# 1-12#
17 (E)	06  6-12#	08  8-16#	99  21-20# 2-16#	02  1-8 # insert points 2 core	32  2-8 # insert points 2 core
	05  5-12#	07  7-12#	11  3-12# 8-20#	23  1-8# Double coaxial 2-12#	20  16-22# 2-20# 2-12# shield
	39  3-TDB4	22  2-8# Double coaxial	51  1-8# Double coaxial 10-16#	24  1-8# Double coaxial 1-16# 2-12#	27  7-12#
	29  6-16# 3-12#	53  13-16#	52  1-8# Double coaxial 1-12#	54  1-8# Double coaxial 3-12#	64  2-8# Double coaxial
	75  2-8#				

	11  11-16#	28  26-20# 2-16#	30  29-20# 1-16#	18  4-8# 14-22D#	39  5-TDB4
19 (F)	03  3-8# 双同轴	8  8-12#	09  1-8 # double coaxial 8-12#	16  2-12# 14-16#	19  16-16#
	38  1-8 # double coaxial 7-12#				
21 (G)	29  26-20# 3-12# Coaxial	16  16-16#	39  37-20# 2-16#	11  11-12#	
	75  4-8# Double coaxial	80  12-16# 3-12# Coaxial	74  2-12# 2-8 # double coaxial	78  6-16# 2-8 # double coaxial	
	71  3-12# 8-16#	70  20-16#			

23 (H)	<p>99 II</p>  <p>11-16#</p>	<p>21 II</p>  <p>21-16#</p>	<p>97 I</p>  <p>16-16#</p>	<p>04 N</p>  <p>4-8 # double coaxial</p>
	<p>37</p>  <p>31-20# 6-12#</p>	<p>05 N</p>  <p>5-8# Double coaxial</p>	<p>09</p>  <p>6-12# 3-8# Double coaxial</p>	<p>14 I</p>  <p>8-16# 3-12# 3-8# Double coaxial</p>
	<p>15</p>  <p>16-16# 3-8# Double coaxial</p>	<p>17</p>  <p>10-12# 7-16#</p>	<p>29</p>  <p>29-16#</p>	<p>19</p>  <p>4-12# 15-16#</p>
	<p>46 I</p>  <p>40-20# 4-16# 2-8# Double coaxial</p>	<p>29 I</p>  <p>29-16#</p>	<p>04 I</p>  <p>48-20# 8-16#</p>	<p>24 I</p>  <p>12-16# 12-12#</p>
25 (J)	<p>43 I</p>  <p>23-20# 20-16#</p>	<p>19 I</p>  <p>19-12#</p>	<p>42</p>  <p>38-22D 4-8# Double coaxial</p>	<p>31 N</p>  <p>12-20# 12-16# 5-10# 2-8# Double coaxial</p>



Power contact specifications

