

General

- High density miniature circular electrical connector
- Quick thread locking anti-loosen structure
- Scoop-proof
- EMI/RTF shielding with ground reed
- Shockproof and vibration-proof
- Fluid immersion



Extensively used in aviation, space and military systems, especially in high intensity vibration environment.

Meet the US military standard: MIL-DTL-38999K.

National military standard: GJB599A

Company military standard: Q/Lk30001-2004

Characteristics

Mechanical Characteristics																		
- Shell: Aluminum alloy Finishing: Camouflage cadmium plate (W) Electroless nickel coating (F) - Insert interface: Plastic - Gasket: Silicon rubber elastomer - Contact: Copper alloy Finishing: Gold plating with Nickel back coating - Life:500 cycles - Shock: 2940 m/s² 3 ms		- Vibration: 254 m/s² 10 ~ 50Hz Sine: 588 m/s² 140 ~ 2000Hz Random: 96(m/s²)²/ Hz 408 m/s², 100 ~ 1000Hz at high temperature Random: 480(m/s²)²/ Hz, 100 ~ 300 Hz at ambient - Contact retention force (min): #22D: 45N #16: 111N #8 coaxial: 111N #20: 67N #12: 111N #8 tri-coaxial: 111N																
Electrical Characteristics																		
- Dielectric Strength (V rms) (Mated)<table><tr><th>Ratings</th><th>Sea level</th><th>21000m</th></tr><tr><td>M</td><td>1300</td><td>800</td></tr><tr><td>N</td><td>1000</td><td>600</td></tr><tr><td>I</td><td>1800</td><td>1000</td></tr><tr><td>II</td><td>2300</td><td>1000</td></tr></table> - Contact resistance #22D: 14.6mΩ #20: 7.3 mΩ #16: 3.8 mΩ #12: 1.8 mΩ - Insulate resistance: ≥ 5000MΩ(500V DC) - Contact current ratings #22D: 5A #20: 7.5A #16: 13A #12: 23A - Shell-to-shell conductivity: Camouflage cadmium plate: 2.5mV Nickel coating: 1mV		Ratings	Sea level	21000m	M	1300	800	N	1000	600	I	1800	1000	II	2300	1000	- Shielding: 100MHz 90dB 1GHz 85dB 10GHz(F) 65dB 10GHz(W) 50dB - Coaxial contacts: Frequency: 0 ~ 1GHz Impedance: 50 Ω Voltage stated rate: 1.3 - #8 tri-coaxial contacts: Frequency Width: 0 ~ 20MHz Voltage Ratings: 500 V AC max 125 V AC at 21000m level: Voltage drop: Inner and middle contact: ≤ 55mV at 1A External contact: ≤ 75mV at 12A	
Ratings	Sea level	21000m																
M	1300	800																
N	1000	600																
I	1800	1000																
II	2300	1000																
Environmental Characteristics																		
- Temperature ranges: Cadmium (W): -65℃ ~ +175℃ Nickel (F): -65℃ ~ +200℃ - Salt spray: 500h(W) 48h(F)		- Temperature shock: 10 cycles, 24 hours, - Fluid immersion: Hydraulic oil, Lubricating oil, Freezing liquid and other solvents																

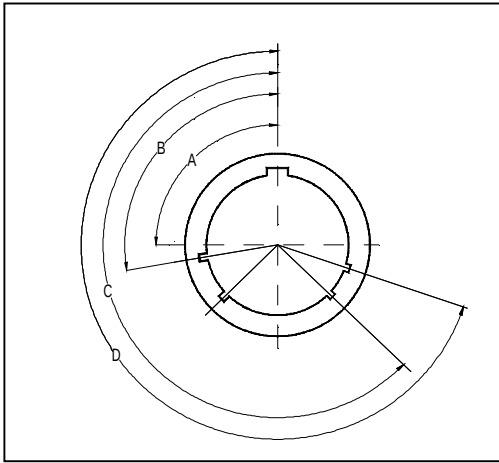
Order

Series	J599/ 20 W B 35 P N									
Shell size	20 — Flat flange receptacle 24 — Jam nut mounted receptacle 26 — Plug									
Finish	W — Camouflage cadmium plate F — Electroless nickel coating									
Shell size	09	11	13	15	17	19	21	23	25	
Code	A	B	C	D	E	F	G	H	J	
Contact arrangement	See P43.									
Contact type	P — Pin S — Socket P _C — Straight PCB terminal pin S _C — Straight PCB terminal socket P _H — Solder pin S _H — Solder socket A — No or customer assigned pin B — No or customer assigned socket P _L — Long straight PCB terminal pin S _L — Long straight PCB terminal socket									
Key/keyway polarization	N — Standard (No marking), A, B, C, D. To see P25.									

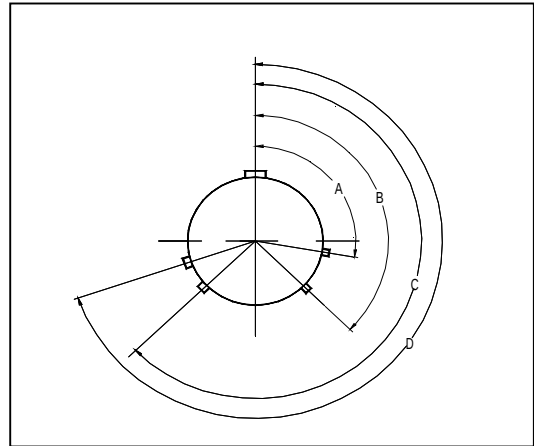
Note: Identification is selfsame between GJB599A and MIL-DTL-38999 except series prefix. GJB599A use “J” and MIL-DTL-38999 uses “D”, both series are exchangeable with each other.

Key/keyway polarization

Receptacle interface view



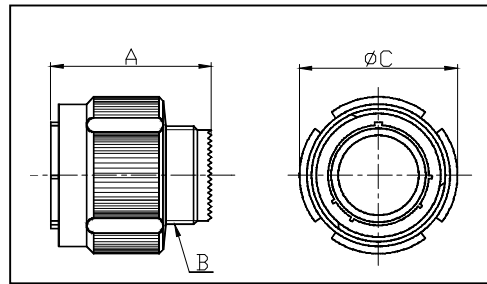
Plug interface view



Shell size	Shell code	Key	N	A	B	C	D	E
		Degree						
09	A	A ⁰	105	102	80	35	64	91
		B ⁰	140	132	118	140	155	131
		C ⁰	215	248	230	205	234	197
		D ⁰	265	320	312	275	304	240
11	B	A ⁰	95	113	90	53	119	51
		B ⁰	141	156	145	156	146	141
		C ⁰	208	182	195	220	176	184
		D ⁰	236	292	252	255	298	242
13	C	A ⁰	95	113	90	53	119	51
		B ⁰	141	156	145	156	146	141
		C ⁰	208	182	195	220	176	184
		D ⁰	236	292	252	255	298	242
15	D	A ⁰	95	113	90	53	119	51
		B ⁰	141	156	145	156	146	141
		C ⁰	208	182	195	220	176	184
		D ⁰	236	292	252	255	298	242
17	E	A ⁰	80	135	49	66	62	79
		B ⁰	142	170	169	140	145	153
		C ⁰	196	200	200	200	180	197
		D ⁰	293	310	244	257	280	272
19	F	A ⁰	80	135	49	66	62	79
		B ⁰	142	170	169	140	145	153
		C ⁰	196	200	200	200	180	197
		D ⁰	293	310	244	257	280	272
21	G	A ⁰	80	135	49	66	62	79
		B ⁰	142	170	169	140	145	153
		C ⁰	196	200	200	200	180	197
		D ⁰	293	310	244	257	280	272
23	H	A ⁰	80	135	49	66	62	79
		B ⁰	142	170	169	140	145	153
		C ⁰	196	200	200	200	180	197
		D ⁰	293	310	244	257	280	272
25	J	A ⁰	80	135	49	66	62	79
		B ⁰	142	170	169	140	145	153
		C ⁰	196	200	200	200	180	197
		D ⁰	293	310	244	257	280	272

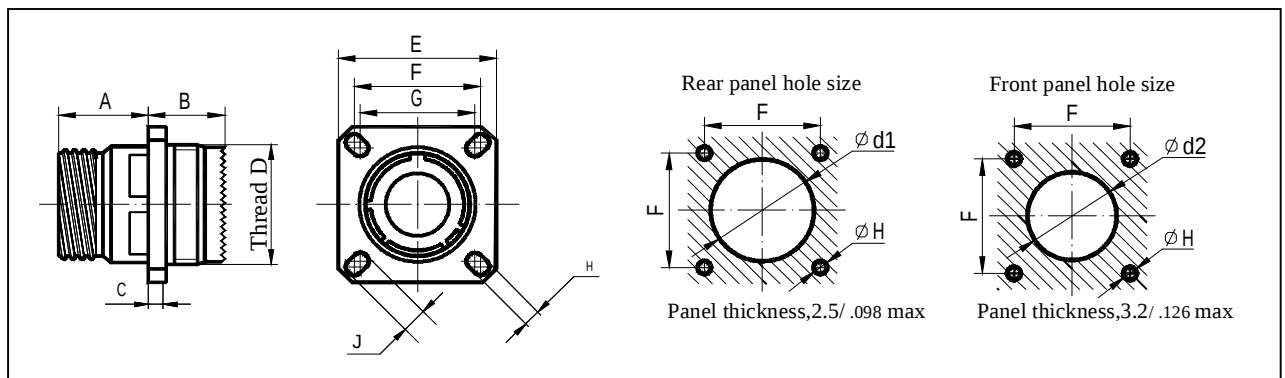
Outline Dimension

J599/26 Plug



Shell size	Shell code	A max	Thread B	C max
09	A	31.00/1.220	M12×1-6g	21.80/.858
11	B		M15×1-6g	25.00/.984
13	C		M18×1-6g	29.40/1.157
15	D		M22×1-6g	32.50/1.280
17	E		M25×1-6g	35.70/1.406
19	F		M28×1-6g	38.50/1.540
21	G		M31×1-6g	41.70/1.642
23	H		M34×1-6g	44.90/1.768
25	J		M37×1-6g	48.00/1.890

J599/20 Flat Flange Receptacle J599/20



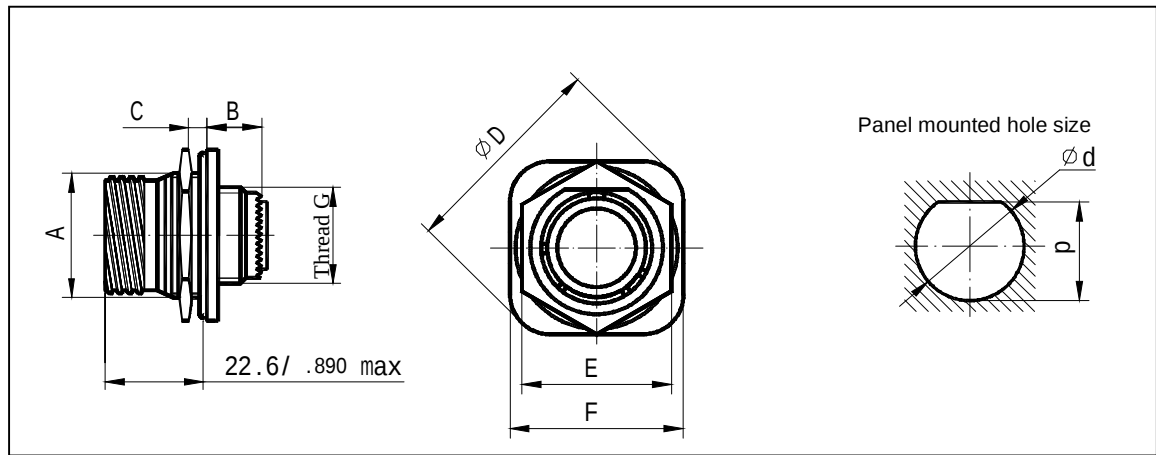
Shell size	Shell code	A max	B max	C max	Thread D	E	F
09	A	20.90/.823	10.60/.417	2.50/.098	M12 × 1-6g	23.80/.937	18.26/.719
11	B				M15 × 1-6g	26.20/1.031	20.62/.812
13	C				M18 × 1-6g	28.60/1.126	23.01/.909
15	D				M22 × 1-6g	31.00/1.220	24.61/.969
17	E				M25 × 1-6g	33.30/1.311	26.97/1.062
19	F				M28 × 1-6g	36.50/1.437	29.36/1.156
21	G	20.10/.791	11.40/.449	3.20/.126	M31 × 1-6g	39.70/1.563	31.75/1.250
23	H				M34 × 1-6g	42.90/1.689	34.93/1.375
25	J				M37 × 1-6g	46.00/1.811	38.10/1.500

GJB599 series III (Aluminum Shell)

续

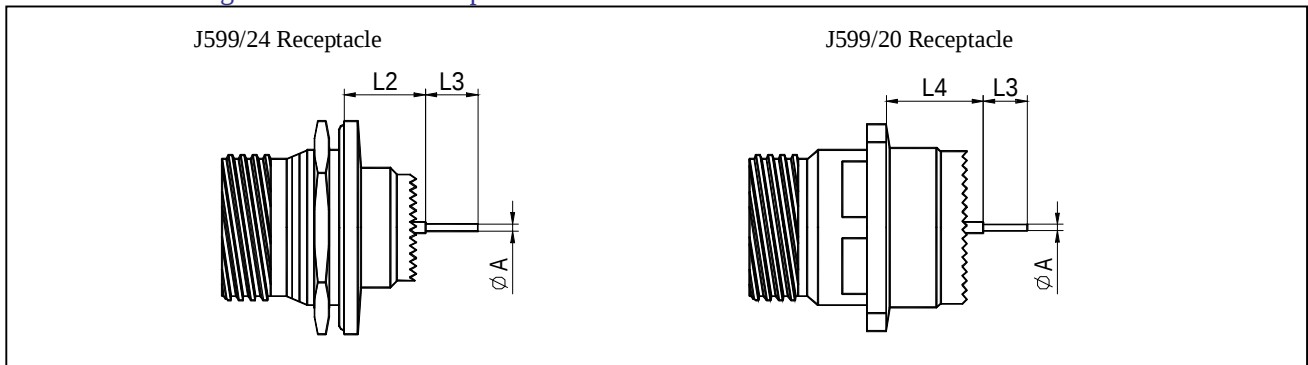
Shell size	Shell code	G	H	J	d1	d2
09	A	15.09/.594	3.25/.128	5.49/.216	16.66/.656	13.11/.516
11	B	18.26/.719		4.93/.194	20.22/.796	15.88/.625
13	C	20.62/.812			23.42/.922	19.05/.750
15	D	23.01/.906		4.39/.173	26.59/1.047	23.01/.906
17	E	24.61/.969		4.93/.194	30.96/1.219	25.81/1.016
19	F	26.97/1.062			32.94/1.297	28.98/1.141
21	G	29.36/1.156			36.12/1.422	32.16/1.266
23	H	31.75/1.250	3.91/.154	6.15/.242	39.29/1.547	34.93/1.375
25	J	34.93/1.375			42.47/1.672	37.69/1.484

J599/24 Jam Nut Mounted Receptacle J599/24



Shell size	Shell code	A	B max	C max	D max	E max	F	Thread G	d	p
09	A	16.53/.651	9.90/.390	3.20/.126	30.50/1.201	24.00/.945	27.00/1.063	M12	17.78/0.700	17.02/.670
11	B	19.07/.751			35.20/1.386	27.00/1.063	31.80/1.252	M15	20.96/.825	19.59/.771
13	C	23.82/.938			38.40/1.512	32.00/1.260	34.90/1.374	M18	25.65/1.010	24.26/.955
15	D	26.97/1.062			41.60/1.638	36.00/1.417	38.10/1.500	M22	28.83/1.135	27.56/1.085
17	E	30.15/1.187			44.80/1.764	37.00/1.457	41.30/1.626	M25	32.01/1.260	30.73/1.210
19	F	33.32/1.312			49.50/1.949	41.00/1.614	46.00/1.811	M28	35.18/1.385	33.91/1.335
21	G	36.50/1.437			52.70/2.075	46.00/1.811	49.20/1.937	M31	38.35/1.510	37.08/1.460
23	H	39.67/1.562			55.90/2.201	50.00/1.969	52.40/2.063	M34	41.53/1.635	40.26/1.585
25	J	42.85/1.687			59.00/2.323	51.23/2.017	55.60/2.189	M37	44.70/1.760	43.43/1.710

Dimension of straight PCB terminal receptacle

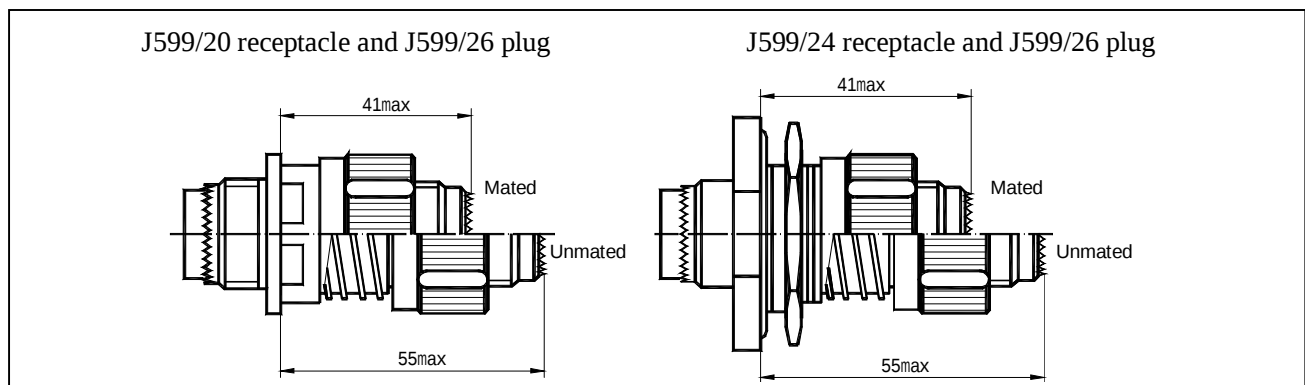


Straight PCB terminal contacts spec		L3	A
#22D	Length straight PCB terminal contacts PL,SL	8.50	0.70
	Short straight PCB terminal contacts PC,SC	4.00	
#20	Length straight PCB terminal contacts PL,SL	8.50	0.70
	Short straight PCB terminal contacts PC,SC	5.10	
#16	Length straight PCB terminal contacts PL,SL	8.50	1.15
	Short straight PCB terminal contacts PC,SC	5.10	

Lenght of inserting different spec contact			Shell size	Shell size	Shell size
	Contacts		09、 11	13、 15、 17、 19	21、 23、 25
L2	#22D Pin	min	10.52/.414	10.34/.407	
		max	11.46/.451	11.28/.444	
	#22D Scket	min	10.19/.401	10.01/.394	
		max	11.46/.451	11.28/.444	
	#20or#16 Pin and Scket	min	10.69/.420	10.51/.414	
		max	11.63/.458	11.45/.451	
L4	#22D Pin	min	9.48/.373		9.59/.378
		max	10.58/.417		10.69/.421
	#22D Scket	min	9.15/.360		9.26/.365
		max	10.58/.417		10.69/.420
	#20or#16 Pin and Scket	min	9.65/.380		9.76/.384
		max	10.75/.423		10.86/.428

Note: To see P46 GJB599 I series printed circuit diagram.

Mated and unmated dimension



General

- High density miniature circular electrical connector,
including from one contact to 128 contacts
- Threaded coupling, releasing-proof
- Scoop-proof, 25% lighter than aluminum shell
- EMI/RFI shielding with ground reed
- Salt Spray: >2000h
- Mechanical life: 1500 cycles

Extensively used in aviation, space and military systems, especially in light-weight and hard environment.

US military standard: MIL-DTL-38999K.

National military standard: GJB599A

Company military standard: Q/Lk30006-2006

Characteristics

Mechanical Characteristics																
- Weight: 5% lighter than normal shell; - Shell: Carbon fiber reinforced thermoplastic material - Finishing: Camouflage cadmium (J) nickel (M) - Insert interface: Plastic; - Gasket: Silicon rubber elastomer; - Contact: Copper alloy - Finishing: Nickel plate followed by gold plate - Life: 1500 cycles - Shock: 2940m/s² 3ms	- Vibration: - Sine: 254 m/s² 10~50Hz ; 588 m/s² 140~2000Hz - Random: 96(m/s²)²/ Hz, 408 m/s², 100~1000Hz at high temperature - Random: 480(m/s²)²/ Hz, 100~300 Hz at ambient - Contact retention force (min): #22D: 45N #16: 111N #8 coaxial: 111N #20: 67N #12: 111N #8 tri-coaxial: 111N															
Electrical Characteristics																
- Dielectric strength (Vrms) (Mated)<table><tr><th>Ratings</th><th>Sea level</th><th>21000m</th></tr><tr><td>M</td><td>1300</td><td>800</td></tr><tr><td>N</td><td>1000</td><td>600</td></tr><tr><td>I</td><td>1800</td><td>1000</td></tr><tr><td>II</td><td>2300</td><td>1000</td></tr></table> - Contact resistance: #22D: 14.6mΩ #20: 7.3 mΩ #16: 3.8 mΩ #12:1.8 mΩ - Insulate resistance: ≥5000MΩ (500V DC) - Contact current ratings: #22: 5A #20: 7.5A #16: 13A #12: 23A - Shell-to-shell conductivity: - Camouflage cadmium plate 3mV - Nickel coating 3mV	Ratings	Sea level	21000m	M	1300	800	N	1000	600	I	1800	1000	II	2300	1000	- Shielding: 100Hz 90dB 1GHz 85dB, 10GHz 65dB(M) 10GHz 50 dB(J) - Coaxial contacts: - Operating frequency: 0~1GHz - Impedance:50Ω - Voltage standing wave rate: ≤1.3 #8 tri-coaxial contacts - Frequency Width: 0~20MHz - Voltage Ratings: 500 V AC max 125 V AC at 21000m level - Voltage drop: - Inner and middle contact: ≤55mV at 1A - External contact: ≤75mV at 12A
Ratings	Sea level	21000m														
M	1300	800														
N	1000	600														
I	1800	1000														
II	2300	1000														
Environmental Characteristics																
- Salt spray: 2000h - Temperature ranges: - Cadmium (J): -65℃~+175℃ - Nickel (M): -65℃~+200℃	- Temperature shock: For 24 hours, 10 cycles - Low altitude: -65℃ min, 1.06kPa min															

GJB599 series III (Composite material Shell)

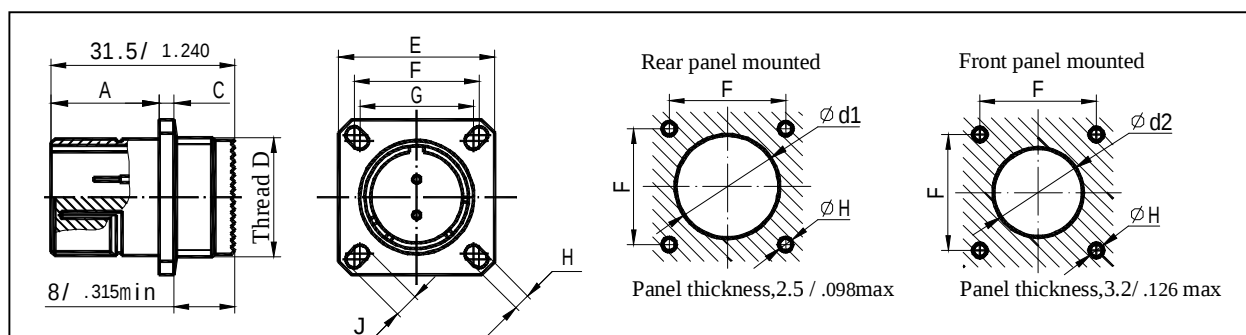
Order

Series	J599/										20	J	B	35	H	N
Shell code	20 - Flat flange receptacle															
	26 - RFI shielding plug															
Finishing	J - Camouflage cadmium plate															
	M - Electro less nickel coating															
Shell size	09	11	13	15	17	19	21	23	25							
Shell code	A	B	C	D	E	F	G	H	J							
Contact arrangement	See P43															
Contact type	H - Pin (1500)															
	J - Socket (1500)															
	A - No pin or customer assigned pin															
	B - No socket or customer assigned socket															
Main key/keyway polarization	N - normal A、B、C、D、E To see P25															

Note: Identification is selfsame between GJB599A and MIL-DTL-38999 except series prefix. GJB599A use “J” and MIL-DTL-38999 uses “D”, both series are exchangeable with each other.

Dimension

J599/20 Flat Flange Receptacle

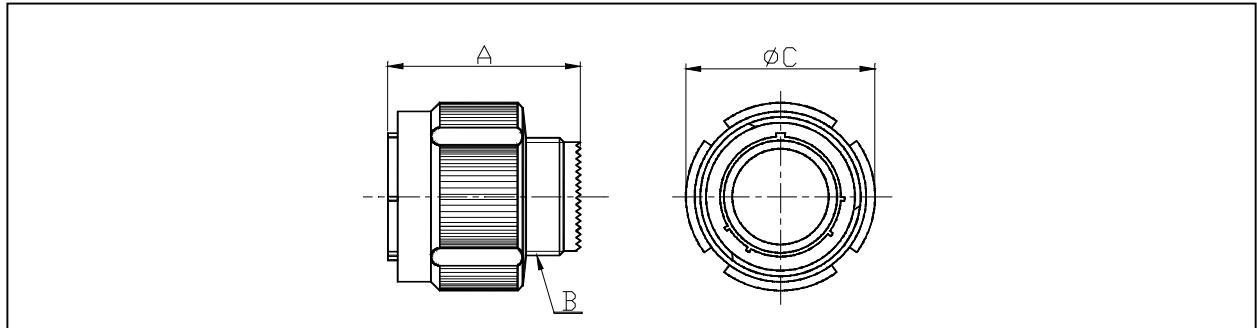


Shell size	Shell code	A	Cmax	Thread D	E	F
09	A	19.50/.768	3.65/.144	M12×1-6g	23.80/.937	20.62/.811
11	B			M15×1-6g	26.20/1.031	23.01/.906
13	C			M18×1-6g	28.60/1.126	24.61/.969
15	D			M22×1-6g	31.00/1.220	26.97/1.061
17	E			M25×1-6g	33.30/1.311	29.36/1.156
19	F			M28×1-6g	36.50/1.437	31.75/1.250
21	G	18.70/.236	4.35/.171	M31×1-6g	39.70/1.563	34.93/1.375
23	H			M34×1-6g	42.90/1.689	38.10/1.500
25	J			M37×1-6g	46.00/1.811	20.62/.811
Shell size	Shell code	G	H	J	d1	d2
09	A	15.09/.594	3.25/.128	5.49/.216	16.66/.656	13.11/.516
11	B	18.26/.719		4.93/.194	20.22/.796	15.88/.625
13	C	20.62/.812			23.42/.922	19.05/.250
15	D	23.01/.906		4.39/.173	26.59/1.047	23.01/.906
17	E	24.61/.969		4.93/.194	30.96/1.219	25.81/1.016
19	F	26.97/1.062			32.94/1.297	28.98/1.141
21	G	29.36/1.156	3.91/.154	6.15/.242	36.12/1.422	32.16/1.266
23	H	31.75/1.250			39.29/1.547	34.93/1.375
25	J	34.93/1.375			42.47/1.672	37.69/1.484

GJB599 series III (Composite material Shell)

Dimension

J599/26 Plug



Shell size	Shell code	A	Thread B	C
09	A	20.60/.811	M12×1 - 6g	21.80/.858
11	B	23.60/.929	M15×1 - 6g	25.00/.984
13	C	28.20/1.110	M18×1 - 6g	29.40/1.157
15	D	31.30/1.232	M22×1 - 6g	32.50/1.280
17	E	34.50/1.358	M25×1 - 6g	35.70/1.406
19	F	37.30/1.469	M28×1 - 6g	38.50/1.516
21	G	40.50/1.594	M31×1 - 6g	41.70/1.642
23	H	43.70/1.720	M34×1 - 6g	44.90/1.768
25	J	46.80/1.843	M37×1 - 6g	48.00/1.890

General

- Quick thread locking anti-loosen structure
- Stainless steel shell and threaded coupling, anti-releasing
- Shockproof and vibration-proof
- Fireproofing: Hear resistant Min 1093℃

Extensively used in aviation, space and military systems, especially in fireproofing environment.

US military standard: MIL-DTL-38999K

National military standard: GJB599A

Characteristics

Mechanical Characteristics																		
- Shell: Stainless steel Finishing: Passivation (K) Nickel(S) - Insulator: thermoplastic material - Gasket: silicon rubber elastome - Contact: Copper alloy Finishing: Nickel plate followed by gold plate - Life: 500cycles - Shock: 2940m/s² 3ms		- Vibration: Sine:254 m/s² 10 ~ 50Hz; 588 m/s² 140 ~ 2000Hz Random: 96(m/s²)²/ Hz, 408 m/s², 100 ~ 1000Hz at high temperature Random: 480(m/s²)²/ Hz,100 ~ 300 Hz at ambient - Contact retention force(min) : #22D: 45N #16: 111N #20: 67N #12: 111N #8 tri-coaxial: 111N																
Electrical Characteristics																		
- Dielectric Strength (Vrms) (Mated)<table><tr><th>Ratings</th><th>Sea level</th><th>21000m</th></tr><tr><td>M</td><td>1300</td><td>800</td></tr><tr><td>N</td><td>1000</td><td>600</td></tr><tr><td>I</td><td>1800</td><td>1000</td></tr><tr><td>II</td><td>2300</td><td>1000</td></tr></table> - Contact resistance #22D: 14.6mΩ #20: 7.3 mΩ #16: 3.8 mΩ #12: 1.8 mΩ - Insulate resistance: ≥ 5000MΩ (500V DC) - Contact current ratings #22D: 5A #20: 7.5A #16: 13A #12: 23A		Ratings	Sea level	21000m	M	1300	800	N	1000	600	I	1800	1000	II	2300	1000	- Shell-to-shell conductivity: K: 10mV S: 1mV - Shielding 100MHz 90dB (S), 80dB(K) 1GHz 85dB (S), 65dB(K) 10GHz 65dB (S), 45 dB(K) - #8 tri-coaxial contacts Frequency Width: 0 ~ 20MHz Voltage Ratings: 500 V AC max 125V AC at 21000m Voltage drop: Inner and middle contact: ≤ 55mV at 1A External contact: ≤ 75mV at 12A	
Ratings	Sea level	21000m																
M	1300	800																
N	1000	600																
I	1800	1000																
II	2300	1000																
Environmental Characteristics																		
- Salt spray: 48h - Temperature ranges: Nickel (S): -65℃ ~ +200℃ Passivation (K): -65℃ ~ +200℃		- Temperature shock: For 24 hours, 10 cycles - Low temperture and pressure: -65℃ min, 1.06kPamin - Fireproof: 1093℃ min 20min																

GJB599 Series III (Fireproofing)

Order

Series		J599/	26	K	J	61	P	N
Shell code	20 - Flat flange receptacle 26 - Plug							
Type	K - Stainless steel passivation S - Stainless steel electroless nickel coating							
Shell size	09 11 13 15 17 19 21 23 25							
Shell code	A B C D E F G H J							
Contact arrangement	See P43.							
Contact types	P - Pin S - Socket							
Main key/keyway polarization	N - Normal A, B, C, D, E To see P25.							

Note: Identification is selfsame between GJB599A and MIL-DTL-38999 except series prefix. GJB599A use “J” and MIL-DTL-38999 uses “D”, both series are exchangeable with each other.