



Standard Materials and Finishes		
DESCRIPTION	MATERIAL	FINISH
Pin Contact	Copper alloy	50 microinches gold over nickel
Socket Contact	Copper alloy, with stainless steel hood	50 microinches gold over nickel Contact hood: passivate
Insulators	High grade rigid dielectric	None
Seals	Fluorosilicone/silicone blend, blue	None
EMI Spring	Beryllium copper	Nickel
Shell, Coupling Nut, Jam-nut	Aluminum alloy or stainless steel	See how-to-order tables for finish options
Contact Retention Clip	Beryllium copper	None
Anti-Decoupling Ratchet Spring	Stainless steel	Passivate

Performance Specification				
TEST DESCRIPTION	REQUIREMENT			PROCEDURE
Dielectric withstanding voltage at sea level	Contact Size	Altitude	Voltage	
	20HD	Sea level	1800	
	22HD	Sea level	1300	
Dielectric withstanding voltage at altitude	Contact Size	Altitude	Voltage	
	20HD	50,000 ft	1000	
		70,000 ft	1000	
		100,000 ft	1000	
	22HD	50,000 ft	800	
70,000 ft		800		
Insulation resistance at ambient temperature	5000 megohms minimum			MIL-DTL-38999M Para. 4.5.10.1 EIA-364-21
Insulation resistance at elevated temperature	1000 megohms minimum			MIL-DTL-38999M Para. 4.5.10.2 EIA-364-21
Contact resistance at 25°C, crimp contacts	Wire Size	Test Current Amperes	Maximum Voltage Drop (millivolts)	
			Initial	After Conditioning
	20	7.5	55	66
	22	5	73	88
	24	3	45	54
	26	2	52	63
	28	1.5	54	65
30	1	60	73	
Contact resistance at 200° C, crimp contacts	Wire Size	Test Current Amperes	Maximum Voltage Drop (millivolts)	
	20	7.5	94	
	22	5	125	
	24	3	77	
	26	2	89	
	28	1.5	92	
30	1	103		
Low level contact resistance, crimp contacts	Wire Size	Maximum Contact Resistance (milliohms)		
		Initial Values	After Conditioning	
	20	9	11	
	22	15	17	
	24	20	23	
	26	31	38	
28	50	60		
30	75	88		

CONNECTOR REFERENCE

MICRO MINIATURE CIRCULAR
Series 806
Mil-Aero Connectors
Performance Specification



Performance Specification					
TEST DESCRIPTION	REQUIREMENT			PROCEDURE	
Contact resistance, glass-sealed hermetic connectors	Contact Size, Wire Size	Test Current Amperes	Maximum Millivolt Drop		MIL-DTL-38999M Para. 3.18.2 EIA-364-06
			Initial	After Conditioning	
	20	5	60	75	
	22	3	85	95	
Shell-to-shell conductivity	Finish Code	Shell Matl/Fin	Millivolt Drop (mV)		MIL-DTL-38999M Para. 4.5.25 EIA-364-83
	NF	Al/OD Cad	2.5		
	MT	Al/Ni-PTFE	2.5		
	ME	Al/EN	1.0		
	ZR	Al/Zn-Ni	2.5		
	Z1	SST/pass.	10.0		
	ZL	SST/Ni	1.0		
Backshell shield braid to shell conductivity	Finish Code	Shell Matl/Fin	Millivolt Drop (mV)		MIL-DTL-38999M Para. 4.5.25.1 EIA-364-83
	NF	Al/OD Cad	5.0		
	MT	Al/Ni-PTFE	5.0		
	ME	Al/EN	3.5		
	ZR	Al/Zn-Ni	5.0		
	Z1	SST/pass.	15.0		
	ZL	SST/Ni	3.5		
Indirect lightning strike	No evidence of damage which could impair proper functioning. Connectors shall meet shell-to-shell conductivity, DWV and coupling torque.			MIL-DTL-38999M Para. 4.5.47 EIA-364-75 10,000 Amps peak current	
EMI shielding	Freq. MHz	Leakage Attenuation, (dB) minimum			MIL-DTL-38999M Para. 4.5.28
		Electroless Nickel Finish	Cadmium, Nickel-PTFE, Zinc-Nickel Finish		
	100	90	90		
	200	88	88		
	300	88	88		
	400	87	87		
	800	85	85		
	1,000	85	85		
	1,500	76	69		
	2,000	70	65		
	3,000	69	61		
	4,000	68	58		
6,000	66	55			
10,000	65	50			
Durability	No evidence of damage which could impair proper functioning following 500 cycles of mating and unmating.			MIL-DTL-38999M Para. 4.5.8 EIA-364-09	
Coupling and uncoupling torque	Shell size	Maximum Engagement lbs.-inch.	Minimum Disengagement lbs.-inch.		MIL-DTL-38999M Para. 4.5.7 EIA-364-114
	8	8	2		
	9	8	2		
	10	12	2		
	11	12	2		
	12	12	2		
	14	16	2		
	16	20	3		
	18	24	3		
	20	28	3		
	22	32	5		
	24	36	5		
Insert retention	100 pounds per square inch, 25 pound minimum force			MIL-DTL-38999M Para. 4.5.12 EIA-364-35	
External bend moment	Shell size	Pound inches			MIL-DTL-38999M Para. 4.5.16 EIA-364-43
	8	100			
	9	100			
	10	100			
	11	200			
	12	300			
	14	400			
	16	500			
	18	600			
	20	700			
	22	800			
24	900				

CONNECTOR REFERENCE

MICRO MINIATURE CIRCULAR
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Performance Specification				
TEST DESCRIPTION	REQUIREMENT		PROCEDURE	
Contact retention	Contact size	Pounds ± 10 percent	MIL-DTL-38999M Para. 4.5.20.1 EIA-364-29	
	22HD	10		
	20HD	10		
Magnetic permeability	2 μ maximum		MIL-DTL-38999M Para. 4.5.48 EIA-364-54	
Contact engaging /separation force	Contact forces shall meet AS39029 Table 9 requirements		AS39029C Para. 4.7.6 EIA-364-37	
Temperature cycling (thermal shock)	No evidence of damage detrimental to the function of the connector		MIL-DTL-38999M Para. 4.5.4 EIA-364-32 Mated connectors, -65° C to +200° C	
Random vibration, elevated temperature, 43g rms	No discontinuities of 1 microsecond or longer No resonance at frequencies less than 300 Hz		MIL-DTL-38999M Para. 4.5.23.2.3 with Figure 24 accessory load EIA-364-28 +200° C	
Random vibration, ambient temperature, 49g rms	No discontinuities of 1 microsecond or longer		MIL-DTL-38999M Para. 4.5.23.2.4 EIA-364-28 Test Condition V	
Sine vibration, 60g	No discontinuities of 1 microsecond or longer		MIL-DTL-38999M Para. 4.5.23.2.1 with Figure 24 accessory load 12 hours in each of 3 axes 4 hours at ambient, 4 hours at -55° C, 4 hours at +200° C	
Mechanical shock, 300g	No discontinuities of 1 microsecond or longer		MIL-DTL-38999M Para. 4.5.24.1 EIA-364-27	
High impact shock (901)	No discontinuities of 1 microsecond or longer No evidence of damage which could impair proper functioning.		MIL-DTL-38999M Para. 4.5.24.2 MIL-S-901 Grade A	
Humidity, cyclic	Meet DWV and IR test		MIL-DTL-38999M Para. 4.5.26 EIA-364-31 Method 4 10 cycles, 10 days, 25 – 65° C 80 – 100% RH	
Ozone exposure	No evidence of damage detrimental to the function of the connector		MIL-DTL-38999M Para. 4.5.29 EIA-364-14	
Fluid immersion	No damage to plastic, elastomeric and bonding materials detrimental to the function of the connector. Connector shall meet coupling torque and DWV requirements when tested within 3 hours of immersion.		MIL-DTL-38999M Para. 4.5.30 EIA-364-10	
Altitude immersion	No evidence of moisture on connector interface or contacts. At the end of the third cycle, while still submersed, connectors shall meet dielectric withstanding voltage and 1,000 megohms insulation resistance.		MIL-DTL-38999M Para. 4.5.9 EIA-364-03 75,000 feet	
Altitude- low temperature	Connectors shall meet insulation resistance requirement while at -65° C and 100,000 ft. Connectors shall meet DWV requirement when returned to ambient conditions.		MIL-DTL-38999M Para. 4.5.21 EIA-364-105 -65° C 100,000 ft.	
Thermal vacuum outgassing	All nonmetallic materials shall not exceed 1.0% Total Mass Loss and 0.1% Total Volatile Condensable Materials. Applicable only to connectors that have been subjected to optional thermal vacuum outgassing.		MIL-DTL-38999M Para. 4.5.42 ASTM E595	
Salt Spray (dynamic)	Finish Code	Matl/Fin	Hours	MIL-DTL-38999M Para. 4.5.13.2 EIA-364-26 500 mating cycles
	NF	Al/OD Cad	500	
	MT	Al/Ni-PTFE	500	
	ME	Al/EN	48	
	ZR	Al/Zn-Ni	500	
	Z1	SST/passivate	1000	
	ZL	SST/Ni	1000	

CONNECTOR REFERENCE