Performance Specifications

STANDARD MATERIALS AND FINISHES		
DESCRIPTION	**MATERIAL**	**FINISH**
Pin Contact	Copper alloy	50 microinches gold over nickel
Socket Contact	Copper alloy, with stainless steel hood (22HD and 20HD contacts only)	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	Nickel
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	MIL-DTL-38999M para. 4.5.11.1 EIA-364-20 Method A 2 mA maximum leakage current Unmated pairs
Dielectric withstanding voltage at altitude	Contact Size / Altitude / Voltage: 20HD — 50,000 ft — 1000 20HD — 70,000 ft — 1000 20HD — 100,000 ft — 1000 22HD — 50,000 ft — 800 22HD — 70,000 ft — 800 22HD — 100,000 ft — 800	MIL-DTL-38999M para. 4.5.11.2 EIA-364-20 Method A 2 mA maximum leakage current Mated pairs
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, 22HD and 20HD 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	AS39029C Para. 4.7.5 EIA-364-06 Silver-plated wire
Contact resistance at 200° C, 22HD and 20HD 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	AS39029C Para. 4.7.5 EIA-364-06 Silver-plated wire
Low level contact resistance, 22HD and 20HD 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	AS39029C Para. 4.7.4 EIA-364-23 Silver plated wire

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Performance Specifications

PERFORMANCE SPECIFICATION

TEST DESCRIPTION	REQUIREMENT	PROCEDURE
Shell-to-shell conductivity	Finish Code / Shell Matl/Fin / Millivolt Drop (mV) 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	MIL-DTL-38999M Para. 4.5.25 EIA-364-83
Backshell shield braid to shell conductivity	Finish Code / Shell Matl/Fin / Millivolt Drop (mV) 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	MIL-DTL-38999M Para. 4.5.25.1 EIA-364-83
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: 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	MIL-DTL-38999M Para. 4.5.28
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 in-lb 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	MIL-DTL-38999M Para. 4.5.7 EIA-364-114
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 / Inch-Pound 8 — 100 9 — 100 10 — 100 11 — 200 12 — 300 14 — 400 16 — 500 18 — 600 20 — 700 22 — 800 24 — 900	MIL-DTL-38999M Para. 4.5.16 EIA-364-43

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Performance Specifications

PERFORMANCE SPECIFICATION		
TEST DESCRIPTION	**REQUIREMENT**	**PROCEDURE**
Contact retention	Contact size: 22HD — Pounds ± 10 percent: 10 Contact size: 20HD — Pounds ± 10 percent: 10	MIL-DTL-38999M Para. 4.5.20.1 EIA-364-29
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, 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
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
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

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