

Technical Characteristics

Circular Connector

General	
Hyperspring® Contact Number	7,13,19
Receptacle Contact Termination	Solder Cup, Straight PCB
Plug Contact Termination	Solder Cup, Straight PCB
AWG Contact	24-28
Cable Diameter Range	Max 6 mm (7 ways) - Max 7.5 mm (13 ways) - Max 8.5 mm (19 ways)
Materials and Plating	
Inner Insulators	Polyphenylensulfide (PPS) type GST-40F per MIL-M-24519 V0 per UL 94
Interface Insulators	NBR Rubber per CEI 2019 Black V0 per UL 94
Overmoulded	Hot melt Polyamide 6.6
Housing	(see table 1)
Locking Hardware	Canted coil spring: Beryllium Copper
EMI-Gasket	Canted coil spring: Beryllium Copper
Hyperspring® Contacts	
Non Functional Parts	Brass as per ASTM-B-455 plated with Au as per ASTM-B-488
Spring Contact Element	CuBe as per ASTM-B-197 plated with Au as per ASTM-B-488
Spring Element	Stainless Steel AISI 302
Interface Pin Connection	Bronze as per ASTM-B-139 plated with Au as per ASTM-B-488
Plug Contact Terminations (solder cups)	Brass as per ASTM-B-455 plated Au as per ASTM-B-488
Bonding Agent	Epoxy resin
Mass Data	Related to standard connectors configuration (see table 2)
Electrical Characteristics	
EMI Shielding	360° shield coverage
Current Rating	3A@25°C for each contact according to IEC 512-3
Dielectric Withstanding Voltage (between contacts)	500 Vrms at sea level and 150 Vrms at 21336m according to EIA 364.20
Contact Resistance (low level)	< 15 mΩ for each contact according to EIA 364.6
Insulation Resistance	1000 MΩ @ 500V d.c. according to EIA364.21
Electrical Bonding Resistance	(see table 3)
Mechanical and Environmental Characteristics	
Temperature Range	-55°C +85°C
Temperature Cycling	EIA364.32 Method A
Salt Spray	EIA364.26 Condition A - mated connectors
Humidity	EIA364.31 Method IV
IP Level	67 mated and unmated IEC 529
Vibration	EIA364.28 Condition III
Shock	EIA364.27 Condition G
Hyperspring® Force (single contact)	Max 1.5 [N]
Connector Mating / Unmating Force	EIA364.09 (see table 4)

Table 1

Material		N	P	W
Alluminium Alloy AV2024 <i>ASTM-B-209</i>	AA*	Chemical Ni Matt Grey 20 µm SAE AMS-C-26074		Metal Spraying Tungsten Carbide Black 1-5 µm as per MIL-STD-869
	BR*			
Stainless Steel AISI316 <i>ASTM-B-582</i>	XS*			

Table 2

	(grams)	Mass data		
		Plug	Receptacle	Extender
C07	AA	4	4.8	4.2
	BR/XS	7.6	10.2	8
C13	AA	6.7	6.5	6
	BR/XS	11.4	13.5	12
C19	AA	8.4	7.1	7
	BR/XS	13.7	15.1	14.2

AA: Aluminium Alloy; BR: Brass; XS: Stainless Steel

Table 3

Electrical bonding resistance vs material/surface treatment			
AAN	BRN/BRW	XSP	XSW
<15 mΩ	<40 mΩ	<250 mΩ	<40 mΩ

Table 4

		Mating & unmating force				Life [# Cycle]
		Mating [N]		Unmating [N]		
		Min	Max	Min	Max	
C07	AAN/BRN/XSP	20	40	18	45	1K Cycles
	BRW/XSW					10K Cycles
C13	AAN/BRN/XSP	20	40	18	45	1K Cycles
	BRW/XSW					10K Cycles
C19	AAN/BRN/XSP	25	45	20	50	1K Cycles
	BRW/XSW					10K Cycles

AA: Aluminium Alloy; BR: Brass; XS: Stainless Steel

Technical Characteristics

Rectangular Connector

General	
Hyperspring® Contact Number	12,21,30
Receptacle Contact Termination	Solder Cup, Straight PCB
Plug Contact Termination	Solder Cup
AWG Contact	24-30
Cable Diameter Range	Max 8 mm

Materials and Plating	
Inner Insulators	Polyphenilensulfide (PPS) type GST-40F per MIL-M-24519 VO per UL 94
Interface Insulators	NBR Rubber per CEI 2019 Black VO per UL 94
Overmoulded	Hot melt Polyamide 6.6
Housing	(see table 1)
Locking Hardware	Stainless Steel AISI 3xx - Passivated as per ASTM-A-967 - Coating Oxide Black as per MIL-DTL-13924D - Metal Spraying Tungsten Carbide Black as per MIL-STD-869
EMI-Gasket	Conductive Silicon
Hyperspring® Contacts	
Non Functional Parts	Brass as per ASTM-B-455 plated with Au as per ASTM-B-488
Spring Contact Element	CuBe as per ASTM-B-197 plated with Au as per ASTM-B-488
Spring Element	Stainless Steel AISI 302 passivated as per ASTM-A-967
Interface Pin Connection	Bronze as per ASTM-B-139 plated with Au as per ASTM-B-488
Plug Contact Terminations (solder cups)	Brass as per ASTM-B-455 plated Au as per ASTM-B-488
Bonding Agent	Epoxy resin
Mass Data	Related to standard connectors configuration (see table 2)

Electrical Characteristics	
EMI Shielding	360° shield coverage
Current Rating	3A@25°C for each contact according to IEC 512-3
Dielectric Withstanding Voltage (between contacts)	500 Vrms at sea level and 150 Vrms at 21336m according to EIA 364.20
Contact Resistance (low level)	< 15 mΩ for each contact according to EIA 364.6
Insulation Resistance	1000 MΩ @ 500V d.c. according to EIA364.21

Mechanical and Environmental Characteristics	
Temperature Range	-55°C +85°C
Temperature Cycling	EIA364.32 Method A
Salt Spray	EIA364.26 Condition A - mated connectors
Humidity	EIA364.31 Method IV
IP Level	67 mated and unmated IEC 529
Vibration	EIA364.28 Condition III
Shock	EIA364.27 Condition G
Hyperspring® Force (single contact)	Max 1.5 [N]
Connector Mating / Unmating Force	Max 60 [N] (12 ways) - Max 70 [N] (21 ways) - Max 80 [N] (30 ways)

Table 1

Material		Surface treatment	
		Z	N
Alluminium Alloy AV2024 ASTM-B-209	AA*	Zn/Co on Chemical Ni Black 5 µm SAE AMS-C-26074 Class 1	Chemical Ni Matt Grey 20 µm SAE AMS-C-26074 Class 1

Table 2

(grams)	Mass data		
	Plug	Plug (front panel mount)	Receptacle
R12	16	NA	5.5
R21	23	NA	7.5
R30	38	18	7.5