



PRODUCT SPECIFICATION

PRODUCT SERIES NAME: C6201 SERIES

PAGE : 1/6

Index

1. Scope
2. Part name & part numbers
3. Construction. dimensions. material & surface finish
4. Ratings & applicable wires
5. Conditions
6. Performance
 - 6.1 Electrical performance
 - 6.2 Mechanical performance
 - 6.3 Environmental performance and others
7. Insertion and Withdrawal Force

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PRODUCT SPECIFICATION

PRODUCT SERIES NAME: C6201 SERIES

PAGE : 2/6

1.SCOPE:

This specification covers the requirements for product performance of 6.20 mm pitch wire to wire or wire to board connector series.

2.PART NAME & PART NUMBERS

Part name	Part number
Housing	C6201HF/HFA C6201HM/HMA
TPA	C6201S
Terminal	C6201F-T-(L/H) C6201M-T-(L/H)
Wafer	C6201WV

3. CONSTRUCTION. DIMENSIONS . MATERIAL & SURFACE FINISH

Construction and dimensions shall be in accordance with the referenced drawings.

Material and surface finish shall be as specified below.

Part name		Material	Surface finish
Housing		Nylon 66	UL94V-0
Terminal		Phosphor bronze	Tin over Nickel/Gold over Nickel
Wafer	Post	Phosphor bronze	Tin over Nickel/Gold over Nickel
	Body	Nylon 66	UL94V-0

4. RATINGS & APPLICABLE WIRES

Item	Standard								
Rated Voltage (Max.)	600V AC DC								
Rated Current (Max.) and Applicable Wires	No.of circuits		Wire size (AWG)						Insulation O.D. 4.10mm Max.
			#12	#14	#16	#18	#20	#22	
	W-W	1	20	15	10	8	6	4	
		2	20	15	10	8	6	4	
		3	19	14	9	8	6	4	
		4	18	13	9	7	6	4	
		6	16	12	8	7	5	3	
		8	16	11	7	6	5	3	
		12	15	10	7	6	4	3	
	W-B	2	20	15	10	8	6	4	
		3	17	14	9	8	6	4	
		4	16	13	9	7	6	4	
		6	15	12	8	7	5	3	
		8	14	11	7	6	5	3	
		12	13	10	7	6	4	3	
Ambient Temperature Range		-40℃~105℃*							

Note: Do not branch in parallel current which exceeds the rated current (e . g . more than17A in the case of 3 circuits with AWG # 12) .

*: Including terMinal temperature rise

PRODUCT SPECIFICATION

PRODUCT SERIES NAME: C6201 SERIES

PAGE : 3/6

5. CONDITIONS:

The conditions shall be in accordance with the referenced data of next table.

Number	Item	Requirement
(1)	Bend up	2°Max.
	Bend down	3°Max.
	Twisting	3°Max.
	Rolling	3°Max.
(2)	Bell mouth (flare)	0.1-0.4 mm
(3)	Cut-off tab length	0.3 mm Max.
(4)	Extruded wire length	0.5-1.0 mm
(5)	Seam	Seam shall not be opened and no wire allowed out of crimping area
(6)	Wire strip length	5.0-5.5 mm ref.
(7)	Lance height	0.3 mm ref.

After crimping, the crimped areas [(5)、(6)] should be as follows.

Wire Size (AWG)	Terminal Part Number	Conductor(mm)		Insulation(mm)		Crimp Strength (kgf)
		Crimp Width	Crimp Height	Crimp Width	Crimp Height	
# 12	C6201F-T-H C6201M-T-H	3.00	1.75~1.85	5.00	3.80	15.00(Min.)
# 14	C6201F-T C6201M-T	2.40	1.55~1.65		3.20	15.00(Min.)
# 16			1.40~1.50		3.10	10.00(Min.)
# 18			1.20~1.30		3.00	8.00(Min.)
# 20			1.05~1.15		2.90	6.50(Min.)
# 16	C6201F-T-L C6201M-T-L	2.00	1.40~1.50		3.10	10.00(Min.)
# 18			1.20~1.30		3.00	8.00(Min.)
# 20			1.10~1.20		2.90	6.50(Min.)
# 22			1.00~1.10		2.90	4.50(Min.)

The crimp width at the conductor part & crimp height at the insulation part is a reference value, so adjust it according to a wire to be used.

6. PERFORMANCE

6.1 ELECTRICAL PERFORMANCE

Test Description		Procedure	Requirement
6-1-1	Contact Resistance	Mate connectors, measure by dry circuit, 20mV Max. 10mA. (Based upon JIS C5402 5.4)	7mΩ Max.

PRODUCT SPECIFICATION
PRODUCT SERIES NAME: C6201 SERIES

PAGE : 4/6

6-1-2	Insulation Resistance	Mate connectors, apply 500V DC between adjacent terminal or ground. (Based upon JIS C5402 5.2/MIL-STD-202 Method 302 Cond. B)	1000MΩ Min.
6-1-3	Dielectric Withstanding Voltage	Mate connectors, apply 2000V AC (rms) for 1 minute between adjacent terminal or ground. (Based upon JIS C5402 5.1/MIL-STD-202 Method 301)	No Breakdown

6.2 MECHANICAL PERFORMANCE

Test Description		Procedure		Requirement
6-2-1	Insertion & Withdrawal Force	Insert and withdraw connectors at the speed rate of 25 ± 3 mm/minute.		Refer to section 7
6-2-2	Crimping Pull Out Force	Fix the crimped terminal, apply axial pull out force on the wire at the speed rate of 25 ± 3 mm/minute. (Based upon JIS C5402 6.8)	AWG #12	147N/15kgf Min.
			AWG #14	147N/15kgf Min.
			AWG #16	98N/10kgf Min.
			AWG #18	78.4N/8kgf Min.
			AWG #20	63.7N/6.5kgf Min.
6-2-3	Crimp Terminal Insertion Force	Insert the crimped terminal into the housing. Testing speed: 25 ± 3 mm/minute.		1.0kgf Max.
6-2-4	Terminal/Housing Retention Force	Apply axial pull out force at the speed rate of 25 ± 3 mm/minute on the terminal assembled in the		7.0kgf Min.
6-2-5	Locking Strength	A socket housing and a header (A plug housing and receptacle housing) shall be mated. A load shall be applied between them. The load to come them off each other shall be measured. Testing speed: 25 ± 3 mm/minute.		W-W: 1P: 7.0kgf Min. 2P or more: 10.0kgf Min. W-B: 5.1kgf Min.
6-2-6	Header Terminal Retention Force	Apply axial push force at the speed rate of 25 ± 3 mm/minute.		5.1kgf Min.
6-2-7	Durability	When mated up to 50 cycles repeatedly	Contact Resistance	10mΩ Max.
6-2-8	Vibration	Amplitude: 1.52mm P-P Sweep time: 10-55-10 Hz in 1 minute Duration: 2 hours in each X.Y.Z. axes (Based upon JIS C 60068-2-6/MIL-STD-202 Method 201)	Appearance	No Damage
			Contact Resistance	10mΩ Max.
			Discontinuity	1μsec. Max.

PRODUCT SPECIFICATION
PRODUCT SERIES NAME: C6201 SERIES

PAGE : 5/6

6.3 ENVIRONMENTAL PERFORMANCE AND OTHERS

Test Description		Procedure		Requirement
6-3-1	Temperature Rise	Carrying rated current load. (Based upon UL 498)	Temperature Rise	30°C Max.
6-3-2	Heat Resistance	125 ± 2°C, 96 hours (Based upon JIS C0021/MIL-STD-202 Method 108A Cond. A)	Appearance	No Damage
			Contact Resistance	10mΩ Max.
6-3-3	Humidity	Temperature: 40 ± 2°C Relative Humidity: 90 ~ 95% Duration: 96 hours (Based upon JIS C0022/MIL-STD-202 Method 103B Cond. B)	Appearance	No Damage
			Contact Resistance	10mΩ Max.
			Insulation Resistance	500MΩ Min.
			Dielectric Withstanding Voltage	Must meet 6-1-3
6-3-4	Temperature Cycling	25 cycles of: a) - 55°C 30 minutes b) +85°C 30 minutes (Based upon MIL-STD-202 Method 107 Cond. A-1)	Appearance	No Damage
			Contact Resistance	10mΩ Max.
6-3-5	Salt Spray	24 hours exposure to a salt spray from the 5 % solution at 35 ± 2°C. (Based upon JIS C0023/MIL-STD-202 Method 101D Cond. B)	Appearance	No Damage
			Contact Resistance	10mΩ Max.
6-3-6	Hydrogen Sulfide Gas	Concentration: 3 ± 1ppm. Temperature: 40 ± 2°C Relative Humidity: 80±5% 96 hours	Appearance	No Damage
			Contact Resistance	10mΩ Max.
6-3-7	NH ₃ Gas	40 minutes exposure to NH ₃ gas evaporating from 28% Ammonia solution.	Appearance	No Damage
			Contact Resistance	10mΩ Max.
6-3-8	Solderability	Soldering Time: 3~5 sec. Solder Temperature: 245 ± 5°C	Solder Wetting	95% of immersed area must show no voids, pin holes
6-3-9	Resistance to Soldering Heat	<u>Normal materials</u> Soldering Time:3~5 sec. Solder Temperature: 250± 5°C <u>High temperature resistant materials</u> Soldering Time:3~5 sec. Solder Temperature: 260 ± 5°C	Appearance	No Damage

PRODUCT SPECIFICATION
PRODUCT SERIES NAME: C6201 SERIES

PAGE : 6/6

7. INSERTION AND WITHDRAWAL FORCE
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Number of Circuits (W-W)	Insertion (Max.)	Withdrawal (Min.)	
	1 th	1 th	30 th
1P	9.8	2.0	1.5
2P	19.6	4.0	3.0
3P	29.4	6.0	4.5
4P	39.2	8.0	6.0
2x2P	39.2	8.0	6.0
2x3P	58.8	12.0	9.0
2x4P	78.4	16.0	12.0
2x6P	118.0	20.0	18.0
Number of Circuits (W-B)	Insertion (Max.)	Withdrawal (Min.)	
	1 th	1 th	30 th
2P	19.6	3.9	2.9
3P	29.4	5.9	4.4
4P	39.2	7.8	5.9
2x2P	39.2	7.8	5.9
2x3P	58.8	11.8	8.8
2x4P	78.4	15.9	11.8
2x6P	118.0	23.5	17.6