朝貴電子股份有限公司
CKM ELECTRONICS CO., LTD.

PRODUCT SPECIFICATION

CKM 2001 HIGH CONDUCTIVITY SERIES

2.00 mm PITCH WIRE TO BOARD CONNECTOR

INDEX

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REVISION HISTORY:

REV	REVISION DESCRIPTION	DATE	CREATED/REVISED
A	INTERIM EDITION	2019/10/21	Jimmy Wang
B	UPGRADE CURRENT RATING	2022/5/6	Jimmy Wang

1. SCOPE

This specification contains the test requirement of subject connectors when tested under the condition and procedure with terminals crimped on the specified maximum size for wire.

2. APPLICABLE STANDARDS

EIA-364 Methods for test of connectors for electronic equipment
JIS C5028 / Test methods for electrical connectors
MIL-STD-202

3. APPLICABLE SERIES NO

Product Name	Part No.
Housing	2001H-XP-HC-HF
Terminal	2001T0H-B1
Wafer Assembly ST. (SMT)	2001WVS-XP-LC-HC-HF
Wafer Assembly RA. (SMT)	2001WRS-XP-LC-HC-HF

X: **2~10**, Refer to the drawing

4. PRODUCT SHAPE, DIMENSIONS AND MATERIALS

*See attached drawings.

5. ACCOMMODATED P.C. BOARD

5.1 Thickness: 1.0 mm (.039 ")～1.2mm (.047 "), 1.6 mm (.063 ")
5.2 P.C. Board Layout: See attached drawings

6. RATINGS

6.1 Current rating: 3.0A AC, DC (AWG #24 & 26)
2.5A AC, DC (AWG #28)
2.0A AC, DC (AWG #30)

6.2 Voltage rating: 100V AC, DC

6.3 Temperature range:-40℃ to +105℃

6.4 Applicable wire: AWG #24~#30, Insulation O.D.: 0.90~1.40mm Max.

7. PERFORMANCE REQUIREMENTS AND TEST DESCRIPTIONS

The product is designed to meet the electrical, mechanical and environmental performance Requirements as specifics in **8. REQUIREMENTS.**

8. TEST REQUIREMENTS AND PROCEDURES SUMMARY

TEST ITEM		REQUIREMENT	PROCEDURE
8.1	Examination of Product	Meets requirements of product drawing. No physical damage.	Per **EIA-364-18** Visual inspection
ELECTRICAL REQUIREMENT			
8.2	Contact Resistance	10mΩ Max (Initial) 20mΩ Max (Final)	Subject specimens to 100 milliamperes maximum and 20 millivolts maximum open circuit voltage. (EIA-364-23)
8.3	Insulation Resistance	1000MΩ Min (Initial)	500 volts DC, 2 minute hold. Test between adjacent contacts. (EIA-364-21)
8.4	Dielectric Strength	One minute hold with no breakdown or flashover, leakage current <5 mA	800 volts AC at sea level,Test between adjacent contacts. (EIA-364-20, Condition I)
8.5	Contact Resistance on Crimped Portion	10mΩ Max (Initial) 20mΩ Max (Final)	Crimp the maximum applicable wire on to the terminal, measure by dry Wire Length : 50mm (AWG #26) (EIA-364-23)
MECHANICAL REQUIREMENT			
8.6	Terminal crimp Tensile strength	Requirements as specifics in **9. Crimping Specification**	Determine crimp tensile at a rate of 25.4 mm per minute. (EIA-364-8)
8.7	Terminal / Housing Retention Force (For Plug)	1.0 kgf minimum	Determine crimp tensile at a rate of 25.4 mm per minute. (EIA-364-8)
8.8	Connector Mating / Un-mating Force	Requirements as specifics in **11. REQUIREMENTS**	Subject connector to mate and unmate to measure the mechanical forces required to engage and disengage at a rate of 25+/-6 mm per minute Record by using autograph. (EIA-364-13)
8.9	Durability	100 mating/ unmating cycles at a maximum rate of 30 cycles per hour. No evidence of damage The contact resistance: 30 mΩ(Final)	The object of this test procedure is to detail a uniform test method for determining the effects caused by subjecting a connector to the conditioning action of insertion and extraction, simulating the expected life of the connectors. Durability cycling with a gauge is intended only to produce mechanical stress. Durability performed with mating components is intended to produce both mechanical and wear stress. (EIA-364-09)

8.10	Pin retention force (For Header)	1.0 kgf minimum	Apply axial load at a rate of 4.4 N per second and hold for 6 seconds. (EIA-364-29)
ENVIRONMENTAL REQUIREMENTS			
8.11	Temperature rise	30°C maximum temperature rise at specified current	Stabilize at a single current level until 3 readings at 5 minutes intervals are with in 1°C.(EIA-364-70, Method 1)
8.12	Vibration	1) No discontinuities of 1 microsecond or longer duration. 2) Contact resistance: 30 milliohms maximum 3) No physical damage.	Subject mated specimens to 3.10G's rms between 20 to 500 Hz, Amplitude: 1.52mm, Test Duration: 15 minutes each axis. (EIA-364-28, Test Condition VII, Condition Letter D)
8.13	Heat aging	Termination resistance (low level)shall be met	Subject mated specimens to 85±2°C for 96 hours.(EIA-364-17, Method A, Test Condition IV, Test Time Condition C)
8.14	Humidity	Insulation resistance 500MΩ Min Termination resistance (low level) shall be met Dielectric strength shall be met	Subject specimens to 10 cycles (10days) between 25°C and 65°C at 90 to 95% RH. (EIA-364-31, Method III)
8.15	Temperature cycling	Contact resistance (low level) shall be met. Must meet requirement of 3 & 4	Subject mated connector assembly to 25 cycle at -40±3℃ for 30 min; +105±2℃ for 30 min (EIA-364-32, Test Condition VII)
8.16	Salt spray	Appearance: No damage Contact resistance: Less than twice of initial	Temperature: 35 ± 2°C Solution: 5 ± 1% Spray time: 8±1 hours Measurement must be taken after water rinse(JIS C5028/MIL-STD-202, method 101 D, condition B)
8.17	Solder ability	The contact solder tails should be covered by a continuous new solder coating for min 95% of affected area	Subject contacts to solder ability testing ,as specified solder transfer at 245±5℃ for 3±0.5s
8.18	Resistance to Reflow heat (SMT)	No damage	Refer Reflow temperature profile

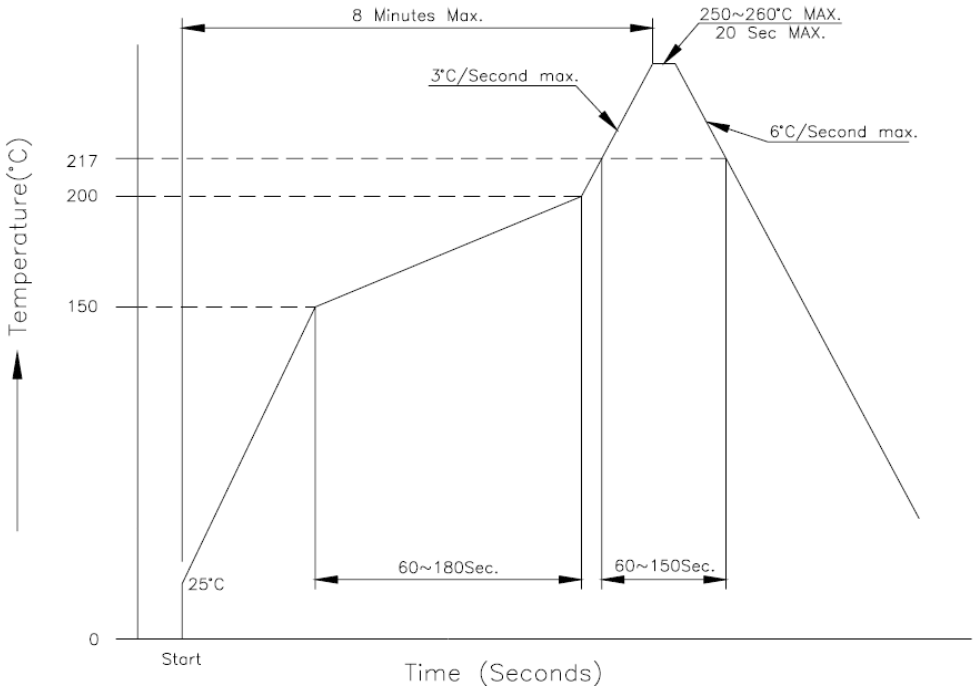
9. Crimping Specification

2001T0X-XX					
Wire Size(AWG)		#30	#28	#26	#24
1. CONDUCTOR (mm)	CRIMP WIDTH	1.30±0.05			
	CRIMP HEIGHT	0.47~0.56	0.52~0.61	0.61~0.70	0.68~0.77
2. INSULATION (mm)	CRIMP WIDTH	1.50±0.05			
	CRIMP HEIGHT	1.40	1.45	1.50	1.56
CRIMP STRENGTH		0.6Kgf (MIN)	1.1Kgf (MIN)	1.8Kgf (MIN)	3.0Kgf (MIN)

Figure 1

10. Recommended Reflow Temperature Profile:

Using Lead-Free Solder Paste



11. Mating and Un-mating Force:

PIN No.	At Initial		At 30th
	Mating (kgf Max.)	Un-mating (kgf Min.)	Un-mating (kgf Min.)
2	2.40	0.50	0.20
3	2.80	0.60	0.20
4	3.20	0.70	0.20
5	3.60	0.80	0.30
6	4.00	0.90	0.30
7	4.40	1.00	0.30
8	4.80	1.10	0.40
9	5.20	1.20	0.40
10	5.60	1.30	0.40

12. PRODUCT QUALIFICATION AND REQUALIFICATION TEST SEQUENCE

Test or Examination	Test Group						
	A	B	C	D	E	F	G
	Test Sequence（a）						
Examination of Product	1,9	1, 9	1,6	1,5	1,5	1,3	1,5
Low Level Contact Resistance	2,8	2	2,4,5	2,4			2 ,4
Dielectric strength		4,8					
Insulation Resistance		3,7					
Mating Force	3,6				3		
Un-mating Force	4,7				4		
Durability	5						
Vibration			3				
Solderability						2	
Resistance to Solder Heat					2		
Thermal Shock		5					
Humidity Temperature Cycling		6					
Temperature Life				3			
Salt Spray			N/A		N/A		3