



**PRODUCT SPECIFICATION**

**CKM 2021 SERIES**

**2.0mm PITCH WIRE TO BOARD CONNECTOR**

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**REVISION HISTORY:**

REV	REVISION DESCRIPTION	DATE	CREATED/REVISED
A	NEW RELEASE	2021/1/15	Heimer
B	UPDATE SPECIFICATION	2022/05/06	Jimmy

<b>REVISION:</b> <b>B</b>	<b>ECR/ECN INFORMATION:</b> EC No.: EC-22041195 DATE: 2022/05/06	<b>TITLE:</b> CKM 2021 SERIES		<b>SHEET No.</b> 1 of 5
<b>DOCUMENT NUMBER:</b> <b>SP-2021-001</b>		<b>CREATED/REVISED</b> Jimmy	<b>CHECKED BY</b> Deliang Li	<b>APPROVED BY</b> Ivan Su



### 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	2021H-XP-X-HF
Terminal	2021T0X-XX
Wafer Assembly WV. (VERTICAL)	2021WV-XP-XX-XX-HF
Wafer Assembly WR. (RIGHT ANGLE)	2021WR-XP-XX-XX-HF

X: 10~40, Refer to the drawing

### 4. PRODUCT SHAPE, DIMENSIONS AND MATERIALS

\*See Customer drawings.

### 5. ACCOMMODATED P.C. BOARD

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

### 6. RATINGS

6.1 Current rating: 2.0A AC, DC (AWG #22)  
1.5A AC, DC (AWG #24~#26)  
1.0A AC, DC (AWG #28)  
6.2 Voltage rating: 250V AC, DC  
6.3 Temperature range: -40°C to + 105°C  
6.4 Applicable wire: AWG #22~#28, Insulation O.D.: 0.85~1.50mm.

### 7. PERFORMANCE REQUIREMENTS AND TEST DESCRIPTIONS

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

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### 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
<b>ELECTRICAL REQUIREMENT</b>		
8.2 Contact Resistance	20mΩ Max	Mate connectors, measure by dry circuit, 20mV MAX., 10mA. (JIS C5402 5.4)
8.3 Insulation Resistance	1000MΩ Min	Mate connectors, apply 500V DC between adjacent terminal or ground. (JIS C5402 5.2/MIL-STD-202 Method 302)
8.4 Dielectric Strength	No Breakdown	Mate connectors, apply 1000V AC (rms) for 1 minute between adjacent terminal or ground. (JIS C5402 5.1/MIL-STD-202 Method 301)
8.5 Contact Resistance on Crimped Portion	5mΩ Max	Crimp the applicable wire on to the terminal, measure by dry circuit , 20mV MAX, 10mA.
<b>MECHANICAL REQUIREMENT</b>		
8.6 Insertion and Withdrawal Force	Refer to paragraph 8.22	Insert and withdraw connectors At the speed rate of 25± 3mm/minute.
8.7 Pin retention force (For Header)	1.0 kgf MIN.	Apply axial push force at the speed rate of 25±3mm/minute on the fitting nail assembled in the housing
8.8 Compulsion Withdrawal Force	3.0 kgf MIN.	Mate connectors, apply axial pull out force at the speed rate of 25±3mm /minute when it not discharge lock. (Test sample have pin/terminal.)
8.9 Repeated Insertion/Withdrawal	Contact Resistance :40 mΩ MAX.	When mated up to 30 cycles repeatedly by the rate of 10 cycles per minute.
<b>ENVIRONMENTAL REQUIREMENTS</b>		
8.10 Temperature Rise	Temperature-rise : 30 °C MAX.	Carrying rated current load. (UL498)
8.11 Vibration	Appearance : No Damage, Contact Resistance: 40 mΩ MAX. Discontinuity: 1.0 ms MAX.	Amplitude : 1.5mm P-P Sweep time : 10~ 55~ 10 Hz in 1 minute Duration : 2 hours in each X.Y.Z. axes (MIL-STD-202 Method 201)

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8.12	Shock	Appearance: No Damage. Contact Resistance: 40 mΩ MAX. Discontinuity: 1.0 ms MAX.	50G, 3 strokes in each X.Y.Z. axes. (JIS C60068-2-27/MIL-STD-202 Method 213)
8.13	Heat Resistance	Appearance: No Damage. Contact Resistance: 40 mΩ MAX.	85± 2°C , 240hours (JIS C60068-2-2 / MIL-STD-202 Method 108)
8.14	Cold Resistance	Appearance :No Damage. Contact Resistance: 40 mΩ MAX.	-40±3°C , 240hours ( JIS C60068-2-1)
8.15	Humidity	Appearance: No Damage Contact Resistance: 40 mΩ MAX. Dielectric Strength: No Breakdown Insulation Resistance: 100 MΩ MIN.	Temperature:40±2°C Relative Humidity : 90~95% Duration: 240 hours (JIS C60068-2-3 / MIL-STD-202 Method 103)
8.16	Temperature Cycling	Appearance: No Damage Contact Resistance: 40 mΩ MAX. Dielectric Strength: No Breakdown Insulation Resistance: 100 MΩ MIN.	25 cycles of : 1) – 55°C 30 minutes 2) +85° C 30 minutes (JIS C0025)
8.17	Salt Spray	Appearance: No Damage Contact Resistance: 40 mΩ MAX.	48±4 hours exposure to a salt spray from the 5±1% solution at 35±2°C. (JIS C60068-2-11 / MIL-STD-202 Method 101)
8.18	SO <sub>2</sub> Gas	Appearance: No Damage Contact Resistance: 40 mΩ MAX.	24 hours exposure to 50±5ppm. SO <sub>2</sub> gas at 40±2°C.
8.19	NH <sub>3</sub> Gas	Appearance: No Damage Contact Resistance: 40 mΩ MAX.	40 minutes exposure to NH <sub>3</sub> gas evaporating from 28% Ammonia solution.
8.20	Solderability	Solder Wetting: 90% of immersed area must show no voids, pin holes.	Soldering Time: 3± 0.5 sec. Solder Temperature: 245 ± 3°C.
8.21	Resistance to Soldering Heat	Appearance: No Damage	Soldering bath method Soldering Time: 5± 0.5 sec. Solder Temperature: 260 ± 5°C. Soldering iron method Solder Time: 5 sec. MAX. Solder Temperature: 370~400 However, without too much pressure to the terminal pin.

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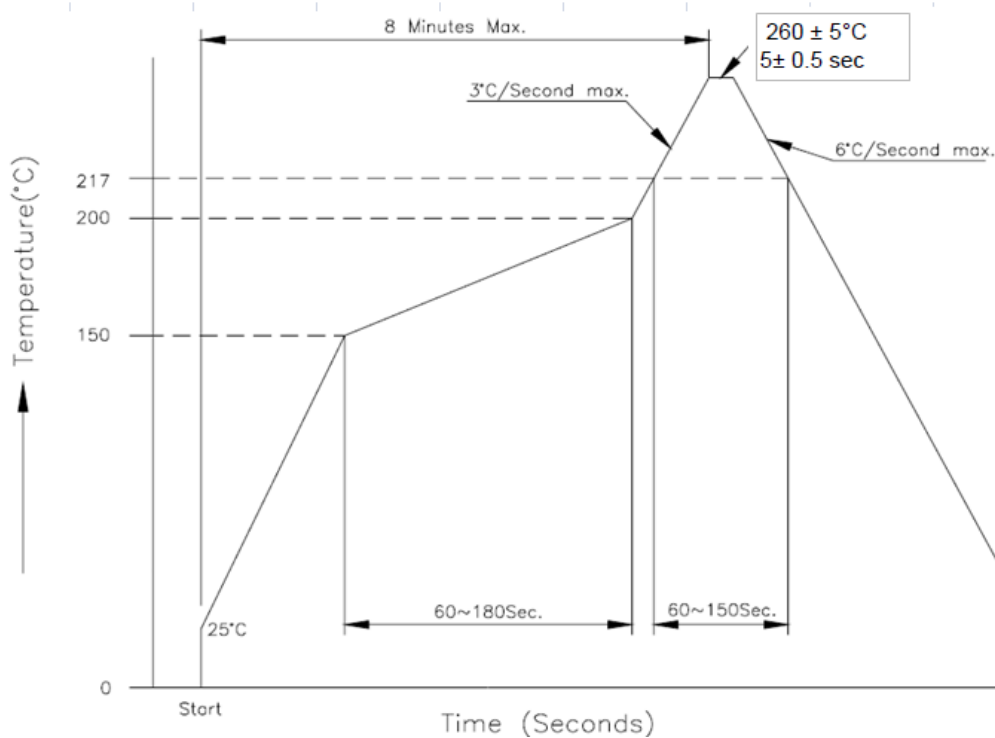
8.22 INSERTION / WITHDRAWAL FORCE

No. of Circuits	Insertion Force		Withdrawal Force	
	Initial	30th	Initial	30th
10	3.57	4.38	0.50	0.25
12	3.87	4.69	0.60	0.30
14	4.18	5.00	0.70	0.35
16	4.49	5.30	0.80	0.40
18	4.79	5.61	0.90	0.45
20	5.10	5.91	1.00	0.50
22	5.40	6.22	1.10	0.55
24	5.71	6.53	1.20	0.60
26	6.02	6.83	1.30	0.65
28	6.32	7.14	1.40	0.70
30	6.63	7.44	1.50	0.75
32	6.93	7.75	1.60	0.80
34	7.24	8.06	1.70	0.85
36	7.55	8.36	1.80	0.90
38	7.85	8.67	1.90	0.95
40	8.16	8.98	2.00	1.00

Unit: kgf

9. Recommended Reflow Temperature Profile:

Using Lead-Free Solder Paste



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