

MOLEX

PRODUCT SPECIFICATION

MOLEX KOREA

제목 : 2.5 Pitch Wire to Board conn.
(TITLE)

A	NEW RELEASED	H.S.SHIN	93.10.25
0	PRE RELEASED	H.S.SHIN	93.02.02
REV	REVISION RECORD	BY	DATE
PRODUCT SPECIFICATION. : 2.5 Pitch Wire to Board conn. (5 1 0 3 / 3 5 1 5 5 / 3 5 3 1 2)		SHEET NO. 1 of 7	REV. A
WRITTEN BY:	CHECKED BY:	APPROVED BY:	DATE:
H.S.SHIN	<i>[Signature]</i>	<i>[Signature]</i>	93.02.02

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[1. 적용범위 (SCOPE)]

2.5mm PITCH WIRE TO BOARD CONNECTOR에 대하여 규정한다.
(THIS SPECIFICATION COVERS THE 2.5 PITCH WIRE TO BOARD CONNECTOR SERIES.)

[2. 제품명 및 제품번호 (PRODUCT NAME AND PART NUMBER)]

제품명 (PRODUCT NAME)	제품번호 (PART NUMBER)
TERMINAL	5103-*
HOUSING	35155-***00
WAFER ASSEMBLY (ST.)	35312-***10

*** : 도면참조 (REFER TO THE DRAWING)

[3. 정격 및 사용 WIRE (RATINGS AND APPLICABLE WIRES)]

항 목 (ITEM)	규 격 (STANDARD)	
최대허용전압 (RATED VOLTAGE (MAX.))	250V	
최대허용 전류 및 사용 WIRE (RATED CURRENT (MAX.) AND APPLICABLE WIRES)	AWG#22	3 A
	AWG#24	2.5A
	AWG#26	2 A
	AWG#28	1.5A
사용온도범위 [AMBIENT TEMPERATURE RANGE]	-40℃ ~ +105℃ ★	

[AC (rms)/DC]
절연피복외경
(INSULATION O.D.)
: $\varnothing 1.5 \sim \varnothing 1.9\text{mm}$

★ : 봉전에 의한 온도상승분 포함.
(INCLUDING TERMINAL TEMPERATURE RISE.)

[4. 성능 (PERFORMANCE)]

4.1 전기적 성능 (ELECTRICAL PERFORMANCE)

항 목 (ITEM)	조 건 (TEST CONDITION)	규 격 (REQUIREMENT)
4.1.1	접촉저항 결합된 CONNECTOR를 개방전압 20mV 이하, 단락전류 10mA에서 측정한다. (JIS C5402 5.4)	20m Ω MAX.
	CONTACT RESISTANCE MATED CONNECTORS, MEASURE BY DRY CIRCUIT, 20mV MAX. 10mA. (BASED UPON JIS C5402 5.4)	
4.1.2	절연저항 결합된 CONNECTOR를 인접 TERMINAL 사이 및 TERMINAL과 GROUND 간에 DC 500V를 인가하여 측정한다. (JIS C5402/MIL-STD-202 시험법 302 조건)	1000M Ω MIN.
	INSULATION RESISTANCE MATED CONNECTORS, APPLY 500V DC BETWEEN ADJACENT TERMINAL OR GROUND. (BASED UPON JIS C5402 5.2/MIL-STD-202 METHOD 302 COND.B)	

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항 목 (ITEM)		조 건 (TEST CONDITION)	규 격 (REQUIREMENT)
4.1.3	내전압	결합된 CONNECTOR를 인접 TERMINAL 및 TERMINAL과 GROUND 간에 AC(rms) 1000V (실효치)를 1분간 인가한다. (JIS C5402 5.1 /MIL-STD-202 시험법 301 조건.)	이상 없을것.
	DIELECTRIC STRENGTH	MATED CONNECTORS, APPLY 1000V AC FOR 1 MINUTE BETWEEN ADJACENT TERMINAL OR GROUND. (BASED UPON JIS C5402 5.1/MIL-STD-202 METHOD 301)	NO BREAKDOWN
4.1.4	압착상태의 접촉저항	TERMINAL을 WIRE 사용하여 압착한 상태에서 개방전압 20mV 이하, 단락전류 10mA에서 측정한다.	5mΩ MAX.
	CONTACT RESISTANCE ON CRIMPED PORTION	CRIMP THE APPLICABLE WIRE ON TO THE TERMINAL, MEASURE BY DRY CIRCUIT, 20mV MAX., 10mA.	

4.2 기계적 성능 (MECHANICAL PERFORMANCE:)

항 목 (ITEM)		조 건 (TEST CONDITION)	규 격 (REQUIREMENT)	
4.2.1	삽입력 및 발거력	매분 25±3mm의 속도로 삽, 발거력을 한다.	제 6항 참조	
	INSERTION AND WITHDRAWAL FORCE	INSERT AND WITHDRAW CONNECTORS AT THE SPEED RATE OF 25±3mm/MINUTE.	REFER TO PARAGRAPH 6	
4.2.2	단자고착력	압착된 TERMINAL을 매분 25±3mm의 속도로 WIRE를 축방향으로 당긴다. (JIS C5402 6.8)	AWG #22	4.0kgf/MIN.
	CRIMPING PULL OUT FORCE	FIX THE CRIMPED TERMINAL, APPLY AXIAL PULL OUT FORCE ON THE WIRE AT THE SPEED RATE OF 25±3mm/MINUTE. (BASED UPON JIS C5402 6.8)	AWG #24	3.0kgf/MIN.
4.2.3	TERMINAL 삽입력	HOUSING에 압착된 TERMINAL을 삽입한다.	AWG #26	2.0kgf/MIN.
	TERMINAL INSERTION FORCE	INSERT THE CRIMPED TERMINAL INTO THE HOUSING.	AWG #28	1.0kgf/MIN.
			1.5kgf MAX.	

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항 목 (ITEM)		조 건 (TEST CONDITION)	규 격 (REQUIREMENT)	
4.2.4	TERMINAL 보지력	HOUSING과 TERMINAL을 조립한 상태에서 매분 25±3mm의 속도로 축방향으로 당긴다.	1.5kgf MIN.	
	TERMINAL/ HOUSING RETENTION FORCE	APPLY AXIAL PULL OUT FORCE AT THE SPEED RATE OF 25±3mm/MINUTE ON TERMINAL ASSEMBLED IN THE HOUSING.		
4.2.5	PIN 보지력	매분 25±3mm의 속도로 PIN을 축방향으로 누른다.	1.0kgf MIN.	
	PIN RETENTION FORCE	APPLY AXIAL PUSH FORCE AT THE SPEED RATE OF 25±3mm/MINUTE.		
4.2.6	CONNECTOR 결합력	결합된 CONNECTOR를 매분 25±3mm의 속도로 축방향으로 당긴다.	2,3 CKT	2kgf MIN.
	LOCK STRENGTH	MATED CONNECTORS, APPLY AXIAL PULL OUT FORCE AT THE SPEED RATE OF 25±3mm/MINUTE	4~15 CKT	4kgf MIN.

4.3 환경적 성능과 기타성능 (ENVIRONMENTAL PERFORMANCE AND OTHERS)

항 목 (ITEM)		조 건 (TEST CONDITION)	규 격 (REQUIREMENT)	
4.3.1	반복 삽탈기력	1분간 10회 이하의 속도로 삽, 발거를 30회 반복한다.	접촉저항	40mΩ MAX.
	REPEATED INSERTION/ WITHDRAWAL	WHEN MATED UP TO 30 CYCLES REPEATEDLY BY THE RATE OF 10 CYCLES PER MINUTE.	CONTACT RESISTANCE	
4.3.2	온도상승	결합된 CONNECTOR를 최대허용전류를 통전하고 CONNECTOR의 온도상승분을 측정한다. (UL 498)	30℃ MAX.	
	TEMPERATURE RISE	CARRYING RATED CURRENT LOAD. (BASED UPON UL 498)		
4.3.3	내진동성	진 폭 : 1.5mm P-P 진동수 : 10-55-10 Hz/분 진동시간 : X.Y.Z 축 각 2시간 (MIL-STD-202 시험법 201A)	외 관	이상 없을것
			접촉저항	40mΩ MAX.
			순가단락	1u sec. MAX.
	VIBRATION	AMPLITUDE : 1.5mm P-P. SWEEP TIME : 10-55-10 Hz IN 1 MINUTE. DURATION : 2 HOURS IN EACH X.Y.Z AXES. (BASED UPON MIL-STD-202 METHOD 201A)	APPEARANCE	NO DAMAGE
			CONTACT RESISTANCE	40mΩ MAX.
			DIS- CONTINUITY	1u sec. MAX.

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항 목 (ITEM)		조 건 (TEST CONDITION)	규 격 (REQUIREMENT)	
4.3.4	내충격성	50G의 충격을 각 X.Y.Z 축에 3회 가한다. (JIS C0041/MIL-STD-202 시험법 213B 조건 A.)	외 관	이상 없을것
			접촉저항	40mΩ MAX.
			순간단락	1u sec. MAX.
	SHOCK	50G, 3 STROKES IN EACH X.Y.Z AXES. (BASED UPON JIS C0041/MIL-STD-202 METHOD 213B COND.A)	APPEARANCE	NO DAMAGE
			CONTACT RESISTANCE	40mΩ MAX.
			DIS-CONTINUITY	1u sec. MAX.
4.3.5	내열성	결합된 CONNECTOR를 105±2℃에서 96시간 방치. (JIS C0021/MIL-STD-202 시험법 108A 조건 A.)	외 관	이상 없을것
			접촉저항	40mΩ MAX.
	HEAT RESISTANCE	105±2℃, 96 HOURS. (BASED UPON JIS C0021/MIL-STD-202 METHOD 108A COND.A)	APPEARANCE	NO DAMAGE
			CONTACT RESISTANCE	40mΩ MAX.
4.3.6	내한성	결합된 CONNECTOR를 -40±3℃에서 96시간 방치. (JIS C0020)	외 관	이상 없을것
			접촉저항	40mΩ MAX.
	COLD RESISTANCE	-40±3℃, 96 HOURS. (BASED UPON JIS C0020)	APPEARANCE	NO DAMAGE
			CONTACT RESISTANCE	40mΩ MAX.
4.3.7	내습성	온 도 : 60±2℃ 상대습도 : 90~95% 지속시간 : 96 HOURS. (JIS C0022/MIL-STD-202 시험법 103A 조건 B.)	외 관	이상 없을것
			접촉저항	40mΩ MAX.
			내전압	4.1.3 만족할것.
			절연저항	100MΩ MIN.
	HUMIDITY	TEMPERATURE : 60±2℃ RELATIVE HUMIDITY : 90~95% DURATION : 96 HOURS. (BASED UPON JIS C0022/MIL-STD-202 METHOD 103B COND.B)	APPEARANCE	40 DAMAGE
			CONTACT RESISTANCE	40mΩ MAX.
			DIELECTRIC STRENGTH	MUST MEET 4.1.3
			INSULATION RESISTANCE	100MΩ MIN.

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항 목 (ITEM)		조 건 (TEST CONDITION)	규 격 (REQUIREMENT)	
4.3.8	온도싸이클	5 CYCLES : a) -55℃ 30분 b) +105℃ 30분 (JIS C0025)	외 관	이상 없을것
			접촉저항	40mΩ MAX.
4.3.8	TEMPERATURE CYCLING	5 CYCLES : a) -55℃ 30 MINUTES b) +105℃ 30 MINUTES (BASED UPON JIS C0025)	APPEARANCE	NO DAMAGE
			CONTACT RESISTANCE	40mΩ MAX.
4.3.9	염수분무	결합된 CONNECTOR를 35±2℃에서 5±1% 중량비의 염수를 48±4시간 분무하고 시험후 상온에서 물로 씻은후 실온에서 건조시킨다. (JIS C5028/MIL-STD-202 시험법 101D 조건B.)	외 관	이상 없을것
			접촉저항	40mΩ MAX.
4.3.9	SALT SPRAY	48±4 HOURS EXPOSURE TO A SALT SPRAY FORM THE 5±1% SOLUTION AT 35±2℃. (BASED UPON JIS C5028/MIL-STD-202 METHOD 101D COND.B)	APPEARANCE	NO DAMAGE
			CONTACT RESISTANCE	40mΩ MAX.
4.3.10	아황산가스	결합된 CONNECTOR를 40±2℃의 온도에서 50±5PPM의 아황산가스에 24시간 방치한다.	외 관	이상 없을것
			접촉저항	40mΩ MAX.
4.3.10	SO ₂ GAS	24 HOURS EXPOSURE TO 50±5PPM. SO ₂ GAS AT 40±2℃.	APPEARANCE	NO DAMAGE
			CONTACT RESISTANCE	40mΩ MAX.
4.3.11	납땀성	납땀시간 : 3±0.5 sec. 납땀온도 : 230±5℃	침적면적 75% 이상	
	SOLDERABILITY	SOLDERING TIME : 3±0.5 SEC. SOLDER TEMPERATURE : 230±5℃	75% OF IMMERSED AREA MUST SHOW NO VOIDS, PIN HOLES.	
4.3.12	납땀 내열성	납땀시간 : 5±0.5 SEC. 납땀온도 : 260±5℃	이상 없을것	
	RESISTANCE TO SOLDERING HEAT	SOLDERING TIME : 5±0.5 SEC. SOLDER TEMPERATURE : 260±5℃	NO DAMAGE	

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[5. 외관형상 치수 및 재질 (PRODUCT SHAPE, DIMENSIONS AND MATERIALS)]

도면 참조 (REFER TO THE DRAWING)

[6. 삽입력 및 발거력 (INSERTION/WITHDRAWAL FORCE)]

[UNIT : kgf]

극수 (CKT SIZE)	삽입력 (최대) [INSERTION (MAX.)]			발거력 (최소) [WITHDRAWAL (MIN.)]		
	1 회 (INITIAL)	6 회 (6TH)	30 회 (30TH)	1 회 (INITIAL)	6 회 (6TH)	30 회 (30TH)
2	3.6	3.4	3.4	0.65	0.55	0.55
3	4.4	4.1	4.1	0.70	0.60	0.60
4	5.2	4.8	4.8	0.75	0.65	0.65
5	6.0	5.5	5.5	0.80	0.70	0.70
6	6.6	6.0	6.0	0.90	0.80	0.80
7	7.2	6.5	6.5	1.00	0.90	0.90
8	7.8	7.0	7.0	1.15	1.00	1.00
9	8.4	7.5	7.5	1.30	1.15	1.15
10	9.0	8.0	8.0	1.45	1.30	1.30
11	9.6	8.5	8.5	1.60	1.45	1.45
12	10.2	9.0	9.0	1.85	1.60	1.60
13	10.8	9.5	9.5	2.00	1.75	1.75
14	11.4	10.0	10.0	2.15	1.90	1.90
15	12.0	10.5	10.5	2.20	2.05	2.05

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