

ENGINEERING	PRODUCT SPECIFICATION	SPEC.NO.:	SPCP008J
DEPT.	For CP35 Series Power Connector	PAGE:	1/6

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 wire

2. APPLICABLE STANDARDS:

MIL - STD - 202 Methods for test of connectors for electronic equipment

MIL - STD - 1344 Test methods for electrical connectors

J-STD-020 Resistance to soldering Temperature for through hole Mounted Devices SS-00254 Test methods for electronic components ,LEAD-FREE soldering Part design

standards

3. APPLICABLE SERIES NO.: CP35 Series

4. SHAPE, CONSTRUCTION AND DIMENSIONS

See attached drawings

5. MATERIALS

See attached drawings

6. ACCOMMODATED P.C.BOARD

6.1 Thickness: 1.6 mm (.063")

6.2 P.C. Board Layout: See attached drawings



REVIEWED: <u>Alex</u> APPROVED: <u>David</u> VERIFIED: <u>Sandy</u>.



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7. ELECTRICAL PERFORMANCE:

	ITEM	TEST CONDITION	REQUIREMENT
7.1	Rated voltage (max.)		250V AC (r.m.s.)
	Rated Current (max.)	AWG#20 wire gage	5A
	and Applicable Wire	Applicable wire AWG#22 wire gage	5A
		AWG#24 wire gage	4A
		AWG#26 wire gage	2A
		AWG#28 wire gage	1A
		AWG#30 wire gage	1A
7.2	Contact resistance	Dry circuit of DC 20mV max., 100mA max., Wire resistance shell be removed from the measured value.	Less than $10 \text{ m}\Omega$
7.3	Dielectric strength	When applied AC 1500 V 1 minute between adjacent terminal	No Breakdown
7.4	Insulation resistance	When applied DC 500 V between adjacent terminal or ground	More than 1000 M Ω
7.5	Contact resistance on Crimped portion	Crimp the wire to the terminal, measure by dry circuit, 20mV max., 100mA max., Wire resistance shall be removed from the measured value.	Less than 5 m Ω

8. MECHANICAL PERFORMANCE:

	ITEM	TEST CONDITION	REQUIREMENT
8.1	Wire size	Specified wire size	Accepts AWG#20-#24
8.2	Terminal crimp	When crimped AWG#20 size wire	More than 7.0 Kgf
	strength	When crimped AWG#22 size wire	More than 5.0 Kgf
		When crimped AWG#24 size wire	More than 3.0 Kgf
		When crimped AWG#26 size wire	More than 2.0 Kgf
		When crimped AWG#28 size wire	More than 1.2 Kgf
		When crimped AWG#30 size wire	More than 0.8 Kgf
8.3	Terminal insertion force	Insertion speed 25± 3 mm per minute into housing	Less than 1.5 Kgf
8.4	Terminal retaining force in insulator	Retention speed 25± 3 mm per minute from Wire to Wire Housing	More than 3.0 Kgf
8.5	Single contact insertion force	Measure force to insertion using mating square pin at speed 25± 3 mm per minute	700 gram max.



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	ITEM	TEST CONDITION	REQUIREMENT
8.6	Single contact withdrawal force	Measure force to withdrawal using mating square pin at speed 25± 3 mm per minute	150 gram min.
8.7	Pin retention force in Board mount Header	Push Pin for insulator base at speed 25± 3 mm per minute	More than 1.5 Kgf
8.8	Durability	Connector shall be subjected to 30 cycles of insertion and withdrawal	Contact resistance: Less than twice of initial
8.9	Locking force	While with drawing plug & receptacle without terminal at speed 25± 3 mm per minute	More than 5.5 Kgf

8.10 Insertion Force and Withdrawal Force:

8.10.1 Test method:

Housing with crimped contacts and a header shall be mated and unmated on the same axis. Initial insertion and withdrawal forces and withdrawal force at 30th shall be measured for single circuit and multi-circuits. For the measurement of single circuit, the housing lock shall be removed.

8.10.2 Requirements:

Unit: Kgf

		Cint: IX
NO. OF CIRCUITS	INSERTION FORCE Max.)	WITHDRAWAL FORCE (Min.)
2	2.0	0.5
4	3.0	1.0
6	6.0	1.5
8	7.0	2.0
10	9.0	2.5
12	10.0	3.0
14	11.0	3.5
16	12.0	4.0
18	13.0	4.5
20	14.0	5.0
22	15.0	5.5
24	16.0	6.0



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9. ENVIRONMENTAL PERFORMANCE:

	ITEM	TEST CONDITION	REQUIREMENT
9.1	Temperature rise	Then carried the rated current	30°C max.
9.2	Vibration	1.5 mm 10-55-10 HZ/minute each 2 hours for X, Y and Z directions	Appearance: No damage Discontinuity: 1 micro second max.
9.3	Heat aging	105± 2°C, 96 hours	No damage
9.4	Humidity	60± 2°C, 90-95% RH, 96 hours measurement must be taken within 30 min. after tested	Appearance: No damage Contact resistance: Less than twice of initial Dielectric strength: To pass para 7-3
9.5	Temperature cycling	One cycle consists of: (1) -55 +0 °C, 30 min. (2) Room temp. 10-15 min. (3) 105 -0 °C, 30 min. (4) Room temp. 10-15 min.	Appearance: No damage Contact resistance: Less than twice of initial
9.6	Salt spray	Temperature: 35± 3°C Solution: 5± 1% Spray time: 48± 4 hours Measurement must be taken after water rinse	Appearance: No damage Contact resistance: Less than twice of initial
9.7	Solder ability	Tin-Lead Process: Soldering time: 5 ± 0.5 second Soldering pot: 230 ± 5°C Lead-Free Process: Soldering time: 3 ± 0.5 second Soldering pot: 245 ± 5°C	Minimum: 90% of immersed area



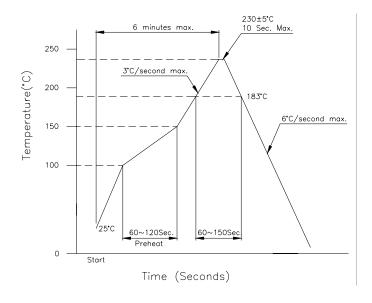
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	ITEM	TEST CONDITION	REQUIREMENT
9.8	Resistance to	DIP Type Tin-Lead Process:	No damage
	soldering heat	Soldering time: 5 ± 0.5 second	
		Soldering pot: 240 ± 5°C	
		DIP Type Lead-Free Process	
		Soldering time: 5 ± 0.5 second	
		Soldering pot: 260 ± 5°C	
		SMT Type Tin-Lead Process:	
		Refer Reflow temperature profile(11.1)	
		Soldering time: 10 second Max.	
		Soldering pot: 230 ± 5 °C	
		SMT Type Lead-Free Process:	
		Soldering time: 20 second Max.	
		Soldering pot: 250~260°C	
		Refer Reflow temperature profile(11.2)	

10. AMBIENT TEMPERATURE RANGE: -40 to + 105°C

11. Recommended IR Reflow Temperature Profile:

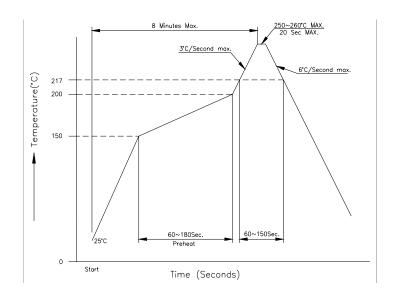
11.1 Using Typical Solder Paste

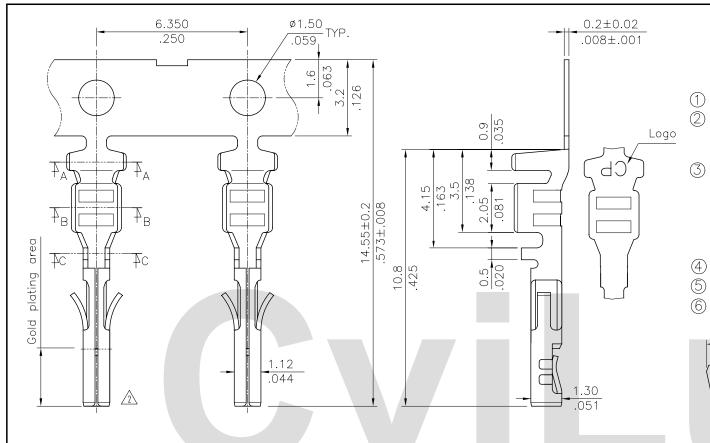




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11.2 Using Lead-Free Solder Paste





Insulation P/N Wire Gauge Finish Reel Q'TY Diameter 1.35 (.053) MAX. CP35TN11PES AWG#26~#30 2.03µm (80µinch) Min. Tin plated over 2.50 (.098) MAX. CP35TN21PES AWG#20~#24 0.76µm (30µinch) Nickel (.053) MAX. AWG#26~#30 Selective gold flash on surface contact area CP35TN1APES AWG#20~#24 over 1.27µm (50µinch) Nickel MAX. CP35TN2APES 12,000 PCS 1.35 (.053) MAX. Selective 0.38µm (15µinch) gold on surface AWG#26~#30 CP35TN1BPES 2.50 MAX. AWG#20~#24 contact area over 1.27µm (50µinch) Nickel CP35TN2BPES 1.35 (.053) MAX. AWG#26~#30 CP35TN1CPES Selective 0.76µm (30µinch) gold on surface 2.50 MAX. (.098) AWG#20~#24 CP35TN2CPES contact area over 1.27µm (50µinch) Nickel

Ordering Code:

CP35	TN*	*	Р	E	S
$\overline{(1)}$	2	<u>(3)</u>	$\overline{4}$	(5)	6

- (1) Series No.
- (2) Accept wire gauge:

TN1= AWG #26 \sim #30 TN2= AWG #20 \sim #24

(3) Plating code:

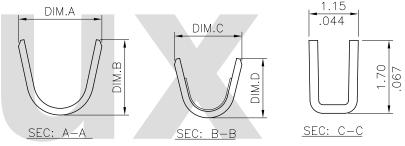
1= Tin plated over Nickel

A= Selective Gold flash plated over 50µ" Nickel

B= Selective 15µ" Gold plated over 50µ" Nickel

C= Selective 30µ" Gold plated over 50µ" Nickel

- 4) Material : P= Phosphor Bronze
- (5) Plating method: E= Pre-tinned
- (6) Style: S= Receptacle terminal



P/N	DIM.A	DIM.B	DIM.C	DIM.D		
CP35TN1*PES	2.1 (.083)	1.9 (.075)	1.7 (.067)	1.5 (.059)		
CP35TN2*PES	2.5 (.098)	2.4 (.094)	2.1 (.083)	2.0 (.079)		

RoHS Compliant

	4				CVILUX CORP.			DATE	UNIT: mm / inch	TITLE:	潮荃股份有限公司				
	3	Sandy	3/17-08	ECN08140	2008.04.01	DRAWN BY:	Sandy	3/17-08'	TOLERANCE COFFICIEN	CP35 FEMALE CRIMP TERMINAL	CviLux Corporation				
	/2\	Sandy	4/26-07	ECN07157/ECR07019-1	\ISSUED/	ENGINEER:	Eisley	3/18-08	UNLESS OTHERWISE SPECIFIED	MATERIAL:					
r	\triangle	Jim	10/26 06	ECN06396		CHECKED BY:	David	3/18-08'	.XX ±0.20/.008 X.* ± 1* .XX ±0.10/.004 .X* ±	- - FINISH:	DRAWING NO.	CP3503SI	PART NO.	CP35TN**PES	
	SYM	NAME	DATE	REVISIONS		APPROVED BY:	Alex	3/18-08'	.XXX ±0.05/.002 .XX* ±	- FINIOTI.	SCALE	6 / 1	SHEET	1 OF 1	