HO CHIEN COMPANY PROFILE

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COMPANY PROFILE / MANAGEMENT PHILOSOPHY

COMPANY PROFILE

HISTORY

Ho Chien Enterprises Co. Ltd. was established in November 1979 on the San Chung City, Taipei Hsien, Taiwan ROC.

Initial paid in capital was NT$ 5,000,000 (US$ 200,000). Ho Chien has gained success during many years of hard work, using techniques and know-how in the automatic process of manufacturing the D Sub connectors, headers, pins, and socket products.

All production line / QC / QA equipment is layout in our own 3-story factory building which is about 20,000 sq. ft. Total personnel is 60 and operating under OA office/ production network system. Annual gross sales was NT$ 241,500,000 (USD$ 10,080,000) at year of 1997.

Ho Chien has achieved outstanding reputation and success in promoting its products under the brand names " **Ho Chien** " and " **HC logo**".

In 1994, Ho Chien established branch office in the United States.

ASSET AND SALES

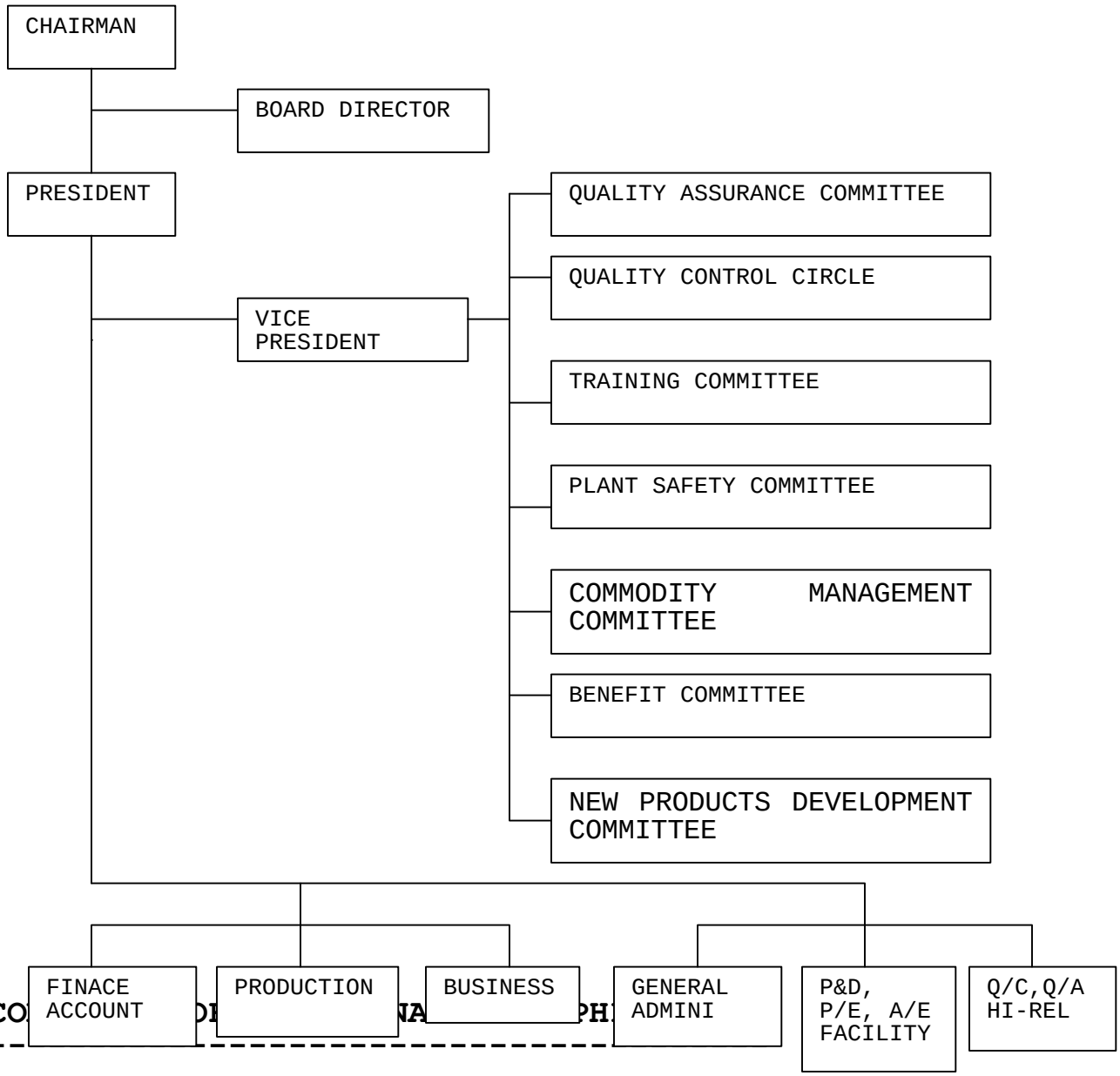
Ho Chien Enterprise Co. Ltd's asset now stand at NT$ 69,000,000 (US$ 2,760,000).

60% of sales is OEM contract to several BIG and FAMOUS connector manufacturer in Europe and State. And expect a 10% growth for the year of 1998.

COMPANY PROFILE / MANAGEMENT PHILOSOPHY

ORGANIZATION

The basic organization is designed to meet our high objectives with maximum efficiency. Full authority is delegated to the managers and their staffs to permit them the freedom to meet their account abilities and responsibilities.



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PRODUCTS AND PRODUCTION CAPACITY

PRODUCTS	CAPACITY/MONTHLY
D_sub Flat cable type	2 million
D_sub Solder type	4 million
D_sub PCB type	12 million
D_sub High density commercial	9 million
D_sub R/A machined pin	3 million
D_sub R/A stamped pin	30 million
Hoods	45 million
Centronics connector	10 million
Header	20 million
Pin header	45 million
IC Socket	25 million
PLCC Socket	15 million

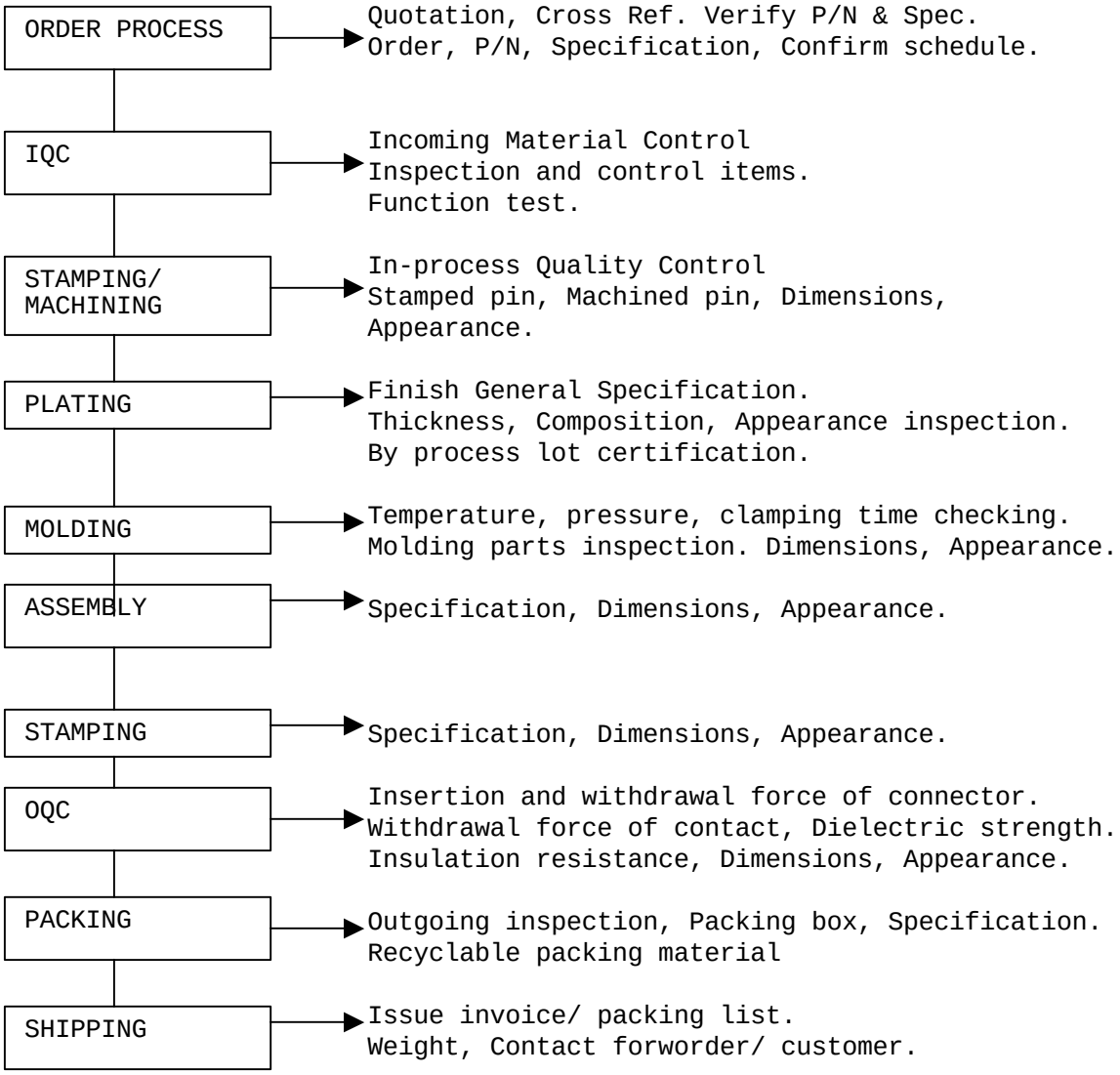
Market

60% of the market is OEM contract to several BIG and Famous connector manufacture. 40% of the market is to FAR EAST and other area.

QUALITY AND RELIABILITY

Ho Chien uses extensive design-in, material control and inspection from IQC, IPQC, OQC testing procedures to ensure the high quality and reliability of its products. As Solderability test, Plating thickness test, Insulation Resistance test, Vibration, Shock, Life and environmental testing to meet "Zero defect" industry standard.

Quality control flow chart at HO CHIEN



COMPANY PROFILE / MANAGEMENT PHILOSOPHY

APPLICATIONS

Computers, aerospace, OA equipment, communications, measuring instruments, medical equipment, broadcasting equipment, audio and acoustic equipment, machine tools, FA equipment, control equipment, aviation and space equipment, rolling stock and vehicles, consumer equipment, and other electronic and electronic equipment.

FUTURE PLANS

With the approval of the management, HO CHIEN has establish the medium and long term strategic plans for company growth as follows:

1. Measure individual demand performance of each products, HO CHIEN has established separate products center to achieve goals.

2. HO CHIEN seeks international opportunities for further investment to expand operations and new products development.

3. Dedicating the entire company to the TQC program and the ISO-9002 as means of achieving ever higher quality levels.

4. Promote OEM and ODM business. Seek opportunities to provide design / manufacturing capability to HO CHIEN's customers design.

5. Develop new products and business opportunities.

COMPANY PROFILE / MANAGEMENT PHILOSOPHY

HO CHIEN ORIENTATION PROGRAM

PART I. DELIVERY PHILOSOPHY

A. JUST-IN-TIME PHILOSOPHY

HO CHIEN, Like most repetitive manufacturers, operates on a **JIT** (Just In Time) delivery basis from our vender and to all our customer, All schedule order / shipment is under JIT program.

The major benefits of this program, to our customer and supplier & HO CHIEN, including:

1. MINIMIZATION OF DOLLAR INVESTMENT INVENTORY.
2. MAXIMIZATION OF INVENTORY TURNOVER.
3. FREQUENT MONITORING OF PART QUALITY.
4. MINIMIZATION OF EXPOSURE IN CASE OF A QUALITY PROBLEM.
5. MINIMIZATION OF EXPOSURE IN CASE OF A DESIGN CHANGE.

B. ON-TIME-DELIVERY PHILOSOPHY

The critical element of the JUST-IN-TIME philosophy is **ON TIME DELIVERY**. HO CHIEN is based on schedule order and expected to:

1. Make shipments so as to be delivery between **SEVEN-DAYS-EARLY and ZERO-DAYS-AFTER** against your schedule acknowledged ON-DOCK-DATE.
2. Notify the Buyer/ Customer if any delay in shipment is anticipated.

HO CHIEN ORIENTATION PROGRAM

PART II. QUALITY PHILOSOPHY
****

A. QUALITY PHILOSOPHY

Inspection Philosophy: HO CHIEN's supplier and customer are all expected to receive and ship 100% quality parts from her vender and to all our customer. As such:

1. Vender need to provide Quality Certification and period testing report with each lot material for HO CHIEN's IQC.
2. Total QC (TQC) system : Six-Sigma approach in process quality control.
3. QA/ Hi-Rel Lab. by lot sampling for testing.
4. Application engineering input for QA monitoring.
5. RMA system including NCMR system (Non-Conforming Material Report), DMN (Defect Material Notice) and CAR (Corrective Action Report) for Customer and Vender.

B. QUALITY MEASUREMENT

HO CHIEN products' individual lots are inspected using the **ZERO-DEFECT PHILOSOPHY**, Quality performance is measured on a PPM (Parts Per Million) basis, in which defects are measured in PPM and the incoming/outgoing quality goal.

Total quality philosophy which including:

1. Incoming Quality Inspection System.
2. Outgoing Quality Assurance System.
3. Statistical Process Control.
4. Continuous Reliability Testing.
5. Formal Corrective Action System

HO CHIEN ORIENTATION PROGRAM

PART III. PRICING PHILOSOPHY
****

A. PRICING PHILOSOPHY

HO CHIEN always considers, and strives to reduce, the **TOTAL COST** of connector, which including:

1. The cost of the product itself.
2. The cost of the transportation and import duties.
3. The cost of late delivery.
4. The cost of poor quality.
5. The cost of poor reliability.
6. The value of supplier's technical resources.
7. The value of supplier's technical innovativeness.
8. The value of supplier's cost control.

and
A. Automation Process Equipment to reduce cost.
B. Consistent training staff to reduce Human error.
C. Computerized office/manufacture system to enhance inter-communication and for management reviewing.

THE GOAL OF HO CHIEN IS TO MAINTAIN THE BEST PRICE, QUALITY AND ON TIME DELIVERY TO MEET ALL OUR CUSTOMER SATISFACTION.

HO CHIEN strives to maintain pricing and other supplier promises (leadtime, cancellation/ reschedule windows, etc.) on formal agreements called LOAs or LETTERS OF AGREEMENT. LOAs are typically issued for one year or two year periods, and outline OH CHIEN promise to purchase specified material from a supplier throughout the affectivity period, regardless of actual demand which may be higher or lower than usage estimate on the LOA. In exchange for this single-souring the supplier agrees to maintain pricing and other terms throughout the affectivity period. HO CHIEN Corporate Terms and Conditions are part of this LOA, as are HO CHIEN's standard Shipping/ Marking Instructions, HO CHIEN Source Inspection Procedures, and the various terms that apply to Freight, Duty Drawback, Certificates of Origin, etc.

HO CHIEN ORIENTATION PROGRAM

PART IV. LEADTIME PHILOSOPHY

A. LEADTIME PHILOSOPHY

HO CHIEN, In order to meet the demands of its ever-changing market, strives to MINIMIZE PRODUCT LEADTIMES from its vender. In general, HO CHIEN quotes its own product leadtimes based on maximum manufacturing leadtime of 8 weeks, so the goal for HO CHIEN suppliers is a leadtime of LESS THAN 8 WEEKS. Many raw materials already fall into this category, but for the remainder it is necessary to consider alternate methods of reducing leadtime, even if this means switching the business to a more responsive supplier.

HO CHIEN expects its supplier to communicate leadtime change immediately, and to minimize the impact of these change to HO CHIEN (price, availability).

B. SCHEDULE FLEX PHILOSOPHY

Part of the **HO CHIEN** leadtime philosophy includes the Schedule Flex Program, In which the supplier must not only reduce product leadtime, but be able to INCREASE or DECREASE current order requirements within a short leadtime. The following guideline are applicable:

TIME FRAME	FLEX CAPABILITY
6 WEEKS BEFORE SHIPDATE	INCREASE ORDER 20% AT NO PENALTY DECREASE ORDER 100% AT NO PENALTY
12 WEEKS BEFORE SHIPDATE	INCREASE ORDER 100% AT NO PENALTY

Again, many raw materials can be managed in this way due to the nature of most modern industries, but for the remainder that cannot, **HO CHIEN** seeking ways of managing unresponsive supplier by considering such methods are:

HO CHIEN ORIENTATION PROGRAM

PART IV. LEADTIME PHILOSOPHY
****

1. Negotiated leadtimes for **HO CHIEN** product.
2. Safety stock program.
3. Distribution bonded inventory.
4. Purchasing unique raw material in advance.
5. Shipping all raw material via air.

The **HO CHIEN's management** will be putting the **Flex Program** in place with all major supplier in 1994, focusing on these who have inherently long leadtimes due to factors beyond their control, and those who are just not responsive to the notion of reduced leadtime.

To help suppliers reduce their leadtimes and meet the requirements of the Flex Program, HO CHIEN can provide a 6-month rolling forecast to assist in suppliers' advance scheduling and material procurement activities.

HO CHIEN ORIENTATION PROGRAM

PART V. VENDER BASE PHILOSOPHY

A. COMMODITY MANAGEMENT GROUP

HO CHIEN Purchasing Department concentrates on the daily operations (planning, buying, expediting) from the long-term issues. The Commodity Management Group is focused on:

1. Overall supplier and management.
2. Contract negotiation and administration.
3. Supplier evaluation and qualification.
4. New products quoting.
5. Cost evaluation and reduction.
6. New raw material souring.
7. Leadtime reduction.
8. Special Projects.

HO CHIEN ORIENTATION PROGRAM

PART V. VENDER BASE PHILOSOPHY

B. VENDER MANAGEMENT PHILOSOPHY

The Commodity Management Group is chiefly concerned with establishing and executing vender management and commodity management philosophies, including the following:

1. **VENDER BASE REDUCTION: HO CHIEN** is striving to increase its effectiveness with suppliers by reducing the vender base to a limited number of full-service vender within each raw material. Administration requirements decrease with a smaller base, while pricing advantage increase.

2. **PREFERRED VENDER LIST:** Parts of the Vender Base Reduction includes focusing on sources who have demonstrated high quality products, competitive pricing, a commitment to customer service, and technological superiority. Engineering and Purchasing use this list to source new raw materials.

3. **LONG TERM RELATIONSHIPS:** HO CHIEN strives to establish long-term relationships with major suppliers, in the hopes that early supplier involvement on new programs will benefit both parties.

4. **PRICE REDUCTIONS:** Since long term relationships are sought with suppliers, one of HO CHIEN's expectations is for a supplier to constantly improve its manufacturing efficiency, and to pass this along in the form of annual price decreases.

**** GENERAL SPECIFICATION ****

Product Performance Material, Finished Quality, Reliability		**D Sub device: Crimp contact type/ Solder type PCB through hole mounting type High Density multiconductor**	**Header Connector**	**Flat cable Connector**
MATERIAL	Shell	Stell w Zinc plated, Plastic w UL-94-V0		
	Insulator	PBT 30% Glass Fiber UL-94-V0		
	Contacts	Phosphor Bronze w Gold Plated (3u") over Nickel		
	Gaide Clip Others	Stainless Stell (Contact our office for details specification)		
ELECTRICAL	Rated current	5 Amp	3 Amp	1 Amp
	Dielectric Strength S	Vac=1000V RMS @ 1 Minute No breakdown discharge after Vac	Vac=500V @ 1 Min.	
	Insulation Resistance	5000M Ohm min. @ Vdc=500V MIL-STD-202E/302		1G ohm @500V dc
	Contact Resistance	3m-ohm max.(5m-ohm after life test/salt spary) AWG#20 7.5A, AWG#22 5A, AWG#24 3A,MIL-STD-1344/3002-1		
MACHANICAL	Contact Force	Mating force 30 - 400 g, Unmating force 30 - 250 g		
	Connector Mating Unmating Force	Mating force 400g x number of contacts Unmating force 250g x number of contacts		
	Contact Retention Force	4.0 Kg (Apply an axial load to the contact MIL-STD-1344/2007.1		1.0 Kg
	Vibration	Free of cracks,damage and looseness pass dielectric test @Sine wave .06 amplitude 500Hz 15 min. 12 cycle		
	Shock	Free of cracks,damage and looseness pass dielectric test @ Impact 50G 11ms 10 time in three direction		
	Life	1.Contact resistance 5m-ohm or less 2.Contact/Connector, mating/unmating force see above 3.The values specified should be satisfied 500 times.		
ENVIRONMRNTAL	Temperature Cycling MIL-STD-750B/1051	1.The connector shall be free of cracks and damage 2.Shall pass the dielectric strength test @ sea level @-55C - +125C dwelled for 30 minute. 5 cycle		
	Humidity Resistance MIL-STD-202E/1038	Insulation Resistance Dielectric Res Immed. test 1M ohms or higher 600VAC After 24 hr. 1000M ohms 1000VAC @ Ta=65 degree c, RH=98% for 1000 hours		
	Corrosion	1.No detrimental corrosion affects the base metal and connector connection 2.Contact resistance 5m-ohm or less @ Expose 35C, 5% salt spray 48 hrs. 35C 12 hrs.		

PRODUCTS GUIDE

D SUB PRODUCTS ASSEMBLY CONNECTOR:

CRIMP CONTACT TYPE

PART UMBER \ PIN		9	15	19	23	25	37	50
CRIMP CONTACT TYPE	(M)	3008-01	3008-02	3008-03	3008-04	3008-05	3008-06	3008-07
	(F)	3008-11	3008-12	3008-13	3008-14	3008-15	3008-16	3008-17

PCB MOUNTING TYPE

PCB STRAIGHT TYPE	(M)	3002-01	3002-02	3002-03	3002-04	3002-05	3002-06	3002-07
	(F)	3002-11	3002-12	3002-13	3002-14	3002-15	3002-16	3002-17

SOLDER TYPE / NOTE: SUFFIX : M FOR MACHINED PIN

STANDARD SOLDER	(M)	3001-01	3001-02	3001-03	3001-04	3001-05	3001-06	3001-07
TYPE	(F)	3001-11	3001-12	3001-13	3001-14	3001-15	3001-16	3001-17
FOR ROUND CABLE	(M)					3008-05		
	(F)					3008-15		

FLAT CABLE TYPE

PART NUMBER \ PIN		9	15	25	37
LONG PROFILE	(M)	3007-01	3007-02	3007-05	3007-06
	(F)	3007-11	3007-12	3007-15	3007-16
LOW PROFILE	(M)	3047-01	3047-02	3047-05	3047-06
METAL SHELL	(F)	3047-11	3047-12	3047-15	3047-16
LOW PROFILE	(M)	3037-01	3037-02	3037-05	3037-06
ALL PALSTIC	(F)	3037-11	3037-12	3037-15	3037-16
LOW PROFILE METAL SHELL	(M)	3027-01A,B	3027-02A,B	3027-05A,B	3027-06A,B
A: RIVET B: NUT-40UNC	(F)	3027-11A,B	3027-12A,B	3027-15A,B	3027-16A,B

SOLDER TYPE

PART NUMBER \ PIN		15	26	44	62	78
PCB 3 ROW TYPE	(M)	3011-15	3011-26	3011-44	3011-62	3011-78
STAMPED PIN	(F)	3011-15	3011-26	3011-44	3011-62	3011-78

PCB MOUNTING

STD. PCB MPUNT M/P	(M)	3312-15	3312-26	3312-44	3312-62	3312-78
STD. PCB MPUNT S/P	(F)	3322-15	3322-26	3322-44	3322-62	3322-78
R/A PCB S/P	(F)	3013-15	3013-26	3013-44	3013-62	3013-78

PRODUCTS GUIDE

PCB MOUNTING

PART NUMBER \ PIN		9	15	19	23	25	37	50
R/A 9.4mm M/P	(M)	3006-01	3006-02	3006-03	3006-04	3006-05	3006-06	
	(F)	3006-11	3006-12	3006-13	3006-14	3006-15	3006-16	
R/A 9.4mm M/P	(M)	3016-01	3016-02			3016-05	3016-06	
w mounting brackets	(F)	3016-11	3016-12			3016-15	3016-16	
R/A 9.4mm M/P	(M)	3106-01	3106-02			3106-05	3106-06	
w mounting brackets	(F)	3106-11	3106-12			3106-15	3106-16	
R/A 9.4mm M/P	(M)	3206-01	3206-02			3206-05	3206-06	
lug mounting brackets	(F)	3206-11	3206-12			3206-15	3206-16	
R/A 7.2mm M/P	(M)	3103-01	3103-02	3103-03	3103-04	3103-05	3103-16	
	(F)	3103-11	3103-12	3103-13	3103-14	3103-15	3103-16	
R/A 7.2mm M/P	(M)	3003-01	3003-02	3003-03		3003-05	3003-16	3003-07
w mounting brackets	(F)	3003-11	3003-12	3003-13		3003-15	3003-16	3003-17
R/A 7.2mm M/P	(M)	3013-01	3013-02			3013-05	3013-06	
lug mounting brackets	(F)	3013-11	3013-12	3013-13	3013-14	3013-15	3013-16	
R/A 13.8mm M/P	(M)	3004-01	3004-02	3004-03		3004-05	3304-06	
w mounting brackets	(F)	3014-11	3004-12	3004-13		3004-15	3004-16	
R/A 13.8mm M/P	(M)	3024-01	3024-02			3024-05	3024-06	
W HOCK LUG	(F)	3024-11	3024-12			3024-15	3024-16	

CENTRONIC CONNECTOR

PART NUMBER \ PIN		14	24	36	50
SOLDER TYPE	(M)	5710-14	5710-24	5710-36	5710-50
	(F)	5720-14	5720-24	5720-36	5720-50
PCB DUP	(M)	5715-14	5715-24	5715-36	5715-50
	(F)	5725-14	5725-24	5725-36	5725-50
ROUND CABLE SOLDER TYPE	(M)	5730-14	5730-24	5730-36	5730-5
FLAT CABLE TYPE	(M)	5740-14	5740-24	5740-36	5740-50
SOLDER TYPE	(F)	5740-14	5740-24	5740-36	5740-50
R/A SOLDER TYPE	(F)	5745-14	5745-24	5745-36	5745-50

PRODUCTS GUIDE

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HEADER CONNECTOR:

HC-HC -XXXX-XX

- *POSITION:10,12,14,16,20,24,26,30,34,40,44,50,56,60,64
- 4003/4013A,B,C,D: DIN 41612 PCB R/A connector (female)
- 4002/4012A,B,C,D: DIN 41612 PCB straight connector (female)
- 4001/4011A,B,C,D: DIN 41612 PCB R/A connector (male)
- 4000/4001A,B,C,D: DIN 41612 PCB straight connector (male)
- 2000 : Power wire connector
- 2561 : PCB connector
- 2505 : Dual R/A header connector
- 2504 : Dual straight line header connector
- 2537 : 0.05" R/A box type
- 2536 : 0.05" straight box type
- 2535 : 0.05" R/A w hock lug
- 2534 : 0.05" straight w hock lug
- 2533 : 0.1" R/A box type
- 2532 : 0.1" straight box type
- 2531 : 0.1" R/A w hock lug
- * 2530 : 0.1" straight w hock lug

* H: HEADER CONNECTOR.

SOCKET:

HC-S-XXXX-XX

- PLCC/PLCCS CHIP SOCKET:20,28,32,44,52,68,84
- IC SOCKET:6,8,14,16,18,20,22,24,28,32,40,48
- * POSITION:20,26,32,34,40,50,52,60,68,80,100
- 2570 ; PLCCS surface mount chip carrier socket
- 2560 : PLCC chip carrier socket
- 2558 : Low profile DIP IC socket machined pin
- 2556 : Low profile DIP IC socket stamped pin
- 2254 : Single P.C.B. socket
- 2252 : Dual P.C.B. socket
- 2547 : H.D. I.D.C. socket
- * 2539 : H.D. P.C.B. socket

* S: SOCKET.

PIN - STRAIGHT & RIGHT ANGLE:

HC-P-XXXX-X-XX

- * POSITION:20,26,32,34,40,50,52,60,68,80,100
- *ROW : 1:SINGLE ROW, 2: DUAL ROW
- 2525 : 2.0m/m Single line right angle
- 2524 : 2.0m/m Single line straight
- 2523 : 2.0m/m Dual right angle
- 2522 : 2.0m/m Dual line straight
- 2545 : 2.54m/m Single line right angle
- 2544 : 2.54m/m Single line straight
- 2543 : 2.54m/m Dual line right angle
- * 2542 : 2.54m/m Dual line straight

* P: PIN

"FINISH GENERAL SPECIFICATION -- ELECTROPLATED GOLD."

1. GOLD FLASH QUALITY CONTROL SPECIFICATION:

1.A. **VISUAL INSPECTION :**

10 TIMES MAGNIFIER WITH INCANDESCENCE LIGHT (THE ANGLE OF NCIDENCE SHALL BE LESS THAN 15 DEGREES)

1.A.1 **ADHESION:**

NO SEPARATION OF THE ELECTROPLATE FROM THE SUBSTRATE SHALL BE EVIDENT WHEN PARTS SUBJECTED TO A HEAT QUENCH TEST.

1.A.1.1 **HEAT QUENCH TEST:**

THE PARTS SHALL BE HEATED IN AN OVEN AT 250 DEGREE C, +/-10 DEGREE C FOR 30 MINUTES, QUENCHED INTO DI WATER, THAN EXAMINED FOR EVIDENCE OF BLISTERS, FLAKING OR PEELING.(NOTE: PARTS CONTACTS WITH A COPPER UNDERPLATE ARE HEATED IN AN INSERT ATMOSPHERE TO PREVENT TARNISHING)

1.A.1.2 **BEND TEST:**

THE ELECTROPLATEING SHALL BE EXAMINED AFTER THE PARTS HAS BEEN BENT 180 DEGREES AROUND A MANDREL 4 TIMES DIAMETER OF THE THICKNESS OF THE PARTS. EVIDENCE OF CRACKING IN THE FINISH AND THE UNDERLAYING SUBSTRATE IS PERMITTED PERPENDICULAR TO THE DIRECTION OF BEND, BUT NO EVIDENCE OF LIFTING OR FLAKING OF THE PLATING.

1.A.2 **POROSITY.**:(Details see internal SPEC# 24856-02)

1.A.2.1 PROCESS CONTROL BY LOT AND CERTIFICATION:

1.A.2.1.1 AVERAGE POROSITY:

LEVEL I, 1 PORES PER SQ. CM MAX.
LEVEL II, 10 PORES PER SQ. CM MAX.
LEVEL III, 30 PORES PER SQ. CM MAX.

1.A.2.1.2 INDIVIDUAL CONTACT MAX POROSITY:

LEVEL I, NON-BIFURCATED, 0 PORES PER CONTACT.
LEVEL I, BIFURCATED, 1 PORES PER SQ. CM MAX.
LEVEL II, 30 PORES PER SQ. CM MAX.
LEVEL III, 100 PORES PER SQ. CM MAX.

1.A.2.2. QULITYCOONTROLE/ ASSURANCE BY LOT AND CIRTIFICATION::

1.A.2.2.1 AVERAGE POROSITY:

LEVEL I, 5 PORES PER SQ. CM MAX.
LEVEL II, 30 PORES PER SQ. CM MAX.
LEVEL III, 100 PORES PER SQ. CM MAX.

1.A.2.2.2 INDIVIDUAL CONTACT MAX POROSITY:

LEVEL I, NON-BIFURCATED, 0 PORES PER CONTACT.
LEVEL I, BIFURCATED, 10 PORES PER SQ. CM MAX.
LEVEL II, 100 PORES PER SQ. CM MAX.
LEVEL III, 300 PORES PER SQ. CM MAX.

1.B **APPEARANCE :**

SURFACE SHALL BE LUSTROUS YELLOW GOLD IN COLOR AND FREE
FROM FOREIGN MATTER.

1.C. **IMPERFECTIONS :**

THE PLATING SHALL BE FREE FROM BLISTERS, PINHOLES, EXPOSED
BASIS METAL, NODULES, SCRATCHES, EXCESSIVE EDGE BUILD-UPS,
VOIDS.

D. **X - RAY SPECTROMETRY ANALYSIS:**

TEST BY FISCHERSCOPE X-RAY SCOPE.

(1). ALLOY COATING MEASUREMENT.

(2). THICKNESS.

(3). COMPOSITION.

HO CHIEN ENTERPRISE CO., LTD.

<< **APPENDIX A** : PLCC SOCKET -- GENERAL SPECIFICATION >>

** **PLCC (Plastic Leaded Chip Carries)** 2560 series, Surface mount 2570 series.

Product Performance Material, Finished Quality, Reliability		PLCC SOCKET –3560- 20P, 28P, 32P,44P, 53P, 68P, 84P PLCC Surface Mount socket –2570- 20P, 28P, 32P, 44P, 52P, 68P, 84P
MATERIAL FINISHED	Shell	
	Insulator	PBT 30% Glass Fiber UL-94-V0 U/L FILE # E54700
	Contacts	Phosphor Bronze
	Contact Planting	Pb/Sn Solder Planting (Pb 2% min - 12% max) Thickness 40 – 60 u inch
ELECTRICAL	Rated current	1 Amp
	Dielectric Strength	Vac=700V RMS @ 1 Minute (No breakdown discharge after Vac)
	Insulation Resistance	30M Ohm min. @ Vdc=500V MIL-STD-202E/302
	Contact Resistance	30 ohm maximum at 10 ma/ 20 mV
	Operating Temp Solder Spec	-55 to 105 Degree C 200 Degree C (Vapor phase) MIL-STD-202E/208
MACHANICAL	Insertion Force	Mating force 0.15lbs/contact (average) Unmating force 0.012bs/ contact (average)
	Contact Retention Force	4.0 Kg (Apply an axial load to the contact) MIL-STD-1344/2007.1
	Vibration	Free of cracks, damage and looseness pass dielectric test @ MIL-0STD-1344/2005 Condition 3
	Shock	Free of cracks, damage and looseness pass dielectric Test @ MIL-0STD-1344/2005 Condition A
	Life	EIA Spec. 540A000 25m ohm contact resistance after Test condition 85 degree C, 1000 hours(EIA/JEDEC STD)
ENVIRONMRNTAL	Temperature Cycling MIL-STD-750B/1051	1.The connector shall be free of cracks and damage 2.Shall pass the dielectric strength test @ sea level @-55C - +125C dwelled for 30 minute. 5 cycle
	Humidity Resistance MIL-STD-202E/1038	Insulation Resistance Dielectric Res Immed. test 1M ohms or higher 500VAC After 24 hr. 1000M ohms 500VAC @ Ta=65 degree c, RH=98% for 1000 hours
	Corrosion	1.No detrimental corrosion affects the base metal and connector connection 2.Contact resistance 5m-ohm or less @ Expose 35C, 5% salt spray 48 hrs. 35C 12 hrs.

HO CHIEN ENTERPRISE CO., LTD.

<< APPENDIX B : IC SOCKET LOW PROFILE -- GENERAL SPECIFICATION >>

IC SOCKET 2556 series - Stamped Pin.

Product Performance Material, Finished Quality, Reliability		PLCC SOCKET –2556- 6P, 8P, 14P, 16P, 18P, 20P, 22P 24P, 28P, 32P, 40P, 48P
MATERIAL	Shell	
	Insulator	PBT 30% Glass Fiber UL-94-V0 U/L FILE # E54700
	Contacts	Copper Alloy
	Contact Planting	Solder Planting (Pb 2% min - 12% max), tin Planting Thickness 40 – 60 u inch
ELECTRICAL	Rated current	1 Amp
	Dielectric Strength	Vac=700V RMS @ 1 Minute (No Breakdown Vac)
	Insulation Resistance	1000M Ohm min. @ Vdc=500V MIL-STD-202E/302
	Contact Resistance	30 ohm maximum at 10 ma/ 20 mV
	Operating Temp Solder Spec	-55 to 105 Degree C 220 Degree C (Vapor phase) MIL-STD-202E/208
MACHANICAL	Insertion Force	Mating force 0.15lbs/contact (average) Unmating force 0.012bs/ contact (average)
	Contact Retention Force	4.0 Kg (Apply an axial load to the contact) MIL-STD-1344/2007.1
	Vibration	Free of cracks, damage and looseness pass dielectric test @ MIL-0STD-1344/2005 Condition 3
	Shock	Free of cracks, damage and looseness pass dielectric test @ MIL-0STD-1344/2005 Condition A
	Life	EIA Spec. 540A000 25m ohm contact resistance after Test condition 85 degree C, 1000 hours(EIA/JEDEC STD)
ENVIRONMRNTAL	Temperature Cycling MIL-STD-750B/1051	1.The connector shall be free of cracks and damage 2.Shall pass the dielectric strength test @ sea level @-55C - +125C dwelled for 30 minute. 5 cycle
	Humidity Resistance MIL-STD-202E/1038	Insulation Resistance Dielectric Res Immed. test 1M ohms or higher 500VAC After 24 hr. 1000M ohms 500VAC @ Ta=65 degree c, RH=98% for 1000 hours
	Corrosion	1.No detrimental corrosion affects the base metal and connector connection 2.Contact resistance 5m-ohm or less @ Expose 35C, 5% salt spray 48 hrs. 35C 12 hrs.

Specification & Procedures

Specifications and Standard procedures
Ho Chien Products are subject to the following general specification and standard, To contact us for any special request.

A. Insulator : Plastic Material Specifications

Molding Plastic	MIL-M-24519(A-7Q)
UL Flammability	UL-94-V0
UL Temperature index	UL746B

B. Socket : Shell material Specifications

Copper Alloy	CQ-B-626
Phosphor Bronze	CQ-B-750
General Spec. of Contact	CQ-B-821
General Spec. of Socket	CQ-B-345
Terminal - Spring Temper	CQ-B-218

C. Plating: Outer Plating Specification:

Gold	CQ-P-147
Standard Thickness:	3u Inch Gold Flash on surface.
Special Thickness :	10u Inch above Gold Flash is available.
	X-Ray Certification provide by lot.
Tin	CQ-P-245
Standard Thickness:	60 +/- 5 u Inch.
Solder Plating	CQ-P-115
Pb/Sn:	Pb(2% - 12%) 150 +/- 20u Inch.
Nickel	CQ-P-227
Standard Thickness:	50 +/- 10 u Inch.

D: Assembly: Testing Specification:

Test methods for electronical connectors	CQ-T-134
Test methods for electronic and electronical components	CQ-T-278
Connection, electrical, Solderless, Wrapped	CQ-T-785
Environmental test Meathods	CQ-T-865

E: Quality Assurance :

Quality Control requirement	CQAAA Std.
Sampling Procedure	MIL-STD-105
Quality Assurance Terms and definitions	CQAAA Std. BQ-1000D
Calibration System requirement	CQAAA Std.
Inspection System requireme nt	CQAAA Std.