

# Passive Components



October 2009 US\$495

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# PASSIVE COMPONENTS

## *Supplier capability in China*

### EXECUTIVE SUMMARY

China's passive components industry, which accounts for more than 30 percent of global supply, is securing its position as the largest production hub for this line worldwide. Makers are boosting output and exports to match demand from the consumer electronics, communications and computer sectors. The automotive and industrial equipment segments are providing additional momentum as applications extend to these fields.

Across all product categories, manufacturers have a positive outlook for their overseas business despite the recent decline in export sales due to the global economic slowdown. More than 30 percent of suppliers project foreign trade will expand by over 20 percent in coming months. As such, many are broadening both their selections and geographic reach to secure orders and bolster margins.

The resistors line is expected to post the strongest growth. Turnout this year is estimated at 850 billion units, equivalent to a 20 percent increase from 2008. Exports will likewise rise 20 percent to hit 510 billion units this year.

The following are some of the key trends in China's passive components industry:

- Export quotes will remain in a downturn as makers leverage their price advantage over international brands.
- To keep quotes low, companies are reducing production costs by improving operating efficiency and enhancing management systems. Many are automating processes to streamline manufacturing.
- The trend for miniaturization is speeding up the development of passive components with smaller form factor and lightweight designs. In the capacitors and resistors segments, for instance, more companies are emphasizing chip versions suitable for portable devices. In the former, multilayer ceramic capacitors will

be increasingly adopted. These are applicable to small digital products requiring high capacitance such as mobile phones.

- Besides reducing the size, suppliers are looking to improve overall stability and performance. Makers of power transformers are adopting a planar structure to boost the efficiency rate to as much as 98 percent. They also emphasize enhanced no-load loss and heat dissipation capability.

- Companies are keen to expand their markets in the EU. The Asia-Pacific region is another key export destination.

- In addition to the tight price competition, the rising outlay for materials poses a challenge. To ensure a more stable supply and cost of manufacturing inputs, a growing number of companies are opting for locally sourced materials. In the capacitors segment, for instance, over 90 percent of inputs now come from domestic providers, with only those for chip and other high-end models using imported alternatives.

This report covers the major types of passive components manufactured in China, namely capacitors, resistors, inductors, coils and transformers. Each product category is discussed in a separate module that details common features and functions found in mainstream models. Price and R&D trends are also covered.

The Industry Overview positions China in the worldwide market and discusses growth opportunities in coming months. It identifies the factors shaping the segment, including challenges faced by makers and steps taken to overcome these hurdles and boost competitiveness further.

The majority of China's 4,000 manufacturers are based in the Pearl River and Yangtze River Delta regions. The Circum-Bohai Sea region is evolving into another key sourcing center.

### In this report

- 17 in-depth company profiles
- 18 additional suppliers
- 77 top-selling export products
- Supplier demographics
- Supplier survey
- Industry statistics & charts

### METHODOLOGY

To produce this report, Global Sources surveyed a wide range of suppliers. Rather than focus simply on high-profile makers, we compiled a representative sample of large, midsize and emerging manufacturers. All profiled companies are export-oriented professional suppliers that may or may not be clients of Global Sources.

The selection of suppliers is designed to reflect the composition of the industry in China in terms of geographic spread, business type and company ownership.

For in-depth company profiles, our research teams interviewed senior executives and export managers who discussed their recent performance and provided price, R&D, production and export forecasts for the next 12 months. The interviews were done in person, by phone or e-mail.

In each case, companies were required to answer specific questions designed to verify their manufacturing and export credentials, including their production and export statistics, and a breakdown of exports by product type and market. Our production checklist details the product-specific manufacturing capability of each supplier.

All profiled suppliers participated in a survey designed to provide insight into product and price trends, and challenges facing the industry. All survey questions are single choice. Results were calculated based on the actual number of valid responses to each question.

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## INDUSTRY OVERVIEW

China continues to consolidate its position as the largest production hub for passive components worldwide. The country accounts for more than 30 percent of global supply, and this share is projected to rise as output and exports remain in an upturn despite slower overseas and domestic demand.

The turnout for resistors alone, which is the fastest-growing segment in terms of yield, is expected to climb at least 20 percent this year to hit 850 billion units, according to the China Electronic Component Association. Although the growth rate is much slower compared with the 70 percent experienced in 2008 when output jumped from 410 billion to 708 billion units, it is still indicative of an upswing.

Overseas shipments, meanwhile, CECA forecasts will increase 20 percent this year to 510 billion units from 425 billion in 2008. The industry association said continued efforts in boosting overseas business and strengthening product development will sustain the line, which has been expanding 20 percent annually since 2005. These will help secure the country's status as the biggest supplier of resistors worldwide.

China's power transformers segment likewise remains robust, and will continue to be the largest globally. The country's output is expected to reach 4.9 billion units this year, with overall sales climbing to \$4.9 billion from \$4.2 billion in 2008. CECA forecasts that turnout and revenue will hit 5 billion units and \$5.4 billion, respectively, next year.

Although most companies in this line concentrate on the domestic market, which has been absorbing up to 65 percent of total yield, overseas shipments have been rising an average of 15 percent annually. Exports are driven by widening adoption in energy-saving lamps, HDTVs, LCD monitors and portable electronics.

Across all product categories,

makers are optimistic of an upswing in coming months, especially as orders started picking up in 3Q09. The positive outlook is riding on the back of strong demand from the consumer electronics, computer, communications and even automotive and industrial equipment markets. Further, even though overall sales declined at some companies due to thinning orders resulting from the financial crunch, many project revenue will rebound as the global economy stabilizes.

### Boosting competitiveness

China may be the largest manufacturing center for passive components worldwide but its supplier pool is dominated by foreign-invested operations. This has limited the growth of local enterprises and homegrown technologies. Many are hard-pressed to establish their presence and compete with international brands.

The situation is exacerbated by the decline in sales resulting from the economic slowdown. Because of the downturn, some companies lowered their capacity utilization and output to avoid overstocking. A few concentrated more on the domestic market.

Makers are undertaking several strategies to boost competitiveness. Under efforts to continue leveraging their price advantage, most are improving operation efficiency to manage costs better.

Many suppliers of power transformers have acquired automatic equipment, including winding, sealing and resin-filling machines and spindles, to streamline production processes. A growing number of them are upgrading the management system as well.

Controlling material sourcing and inventory is another priority. Companies are increasing the ratio of locally sourced materials as they look

### Supplier summary

Suppliers surveyed	17
Export sales	\$172.7mn
Export ratio	53%
OEM business	44%
Capacity utilized	78%
Annual R&D spending	\$43.5mn
Full-time employees	12,590

Data: All surveyed suppliers

for alternative manufacturing inputs that can improve quality without raising costs substantially. More makers of film resistors, for example, are turning to iron lead due to the high outlay for copper.

For capacitors, over 90 percent of materials come from domestic providers. Imported ones are limited to chip inductors and other high-end products. Several manufacturers are working with research and academic institutions on R&D on new inputs. Many are adopting materials with a high dielectric constant and strength, and low dielectric loss to create inductors with a better price-to-performance ratio. Some are considering using MgCuZn or the mixture of MgCuH and NiCuZn to replace soft ferrite NiCuZn, as the former costs less.

To bolster product position, especially against foreign counterparts, suppliers are improving quality and exploring other applications. In the resistors line, for example, makers are concentrating on enhancing stability and performance. They are developing models with higher precision and frequency, and low temperature coefficient. Many are also looking to release smaller and lead-free units.

Suppliers of power transformers are adopting SMT to offer thinner and lighter versions suitable for compact applications and those requiring low voltage but high current. Many coil manufacturers have developed patented proprietary technologies for wire winding, including automatic

### Chian Chia Electronic (Shenzhen) Co. Ltd

Resistors make up 92 percent of Chian Chia's total annual sales from all products, generating \$12 million in 2008. Fifty percent of this came from exports.

Overseas shipments totaled 300 million units last year. These went to the Asia-Pacific region, the Middle East, Europe and North America. Increased marketing efforts in the EU in coming months are expected to boost foreign trade by 10 to 20 percent. The company will also be improving operating efficiency to bolster export capability.

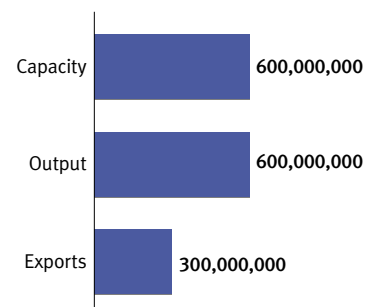
An ISO 9001:2000-compliant

supplier of passive components, Chian Chia churns out 600 million resistors each month at 100 percent capacity utilization. Production is carried out in two factories, one each in Shenzhen and Qingyuan, Guangdong province. The facilities have a combined area of 15,000sqm and employ 500 full-time personnel, including 50 assigned to R&D and 40 handling QC.

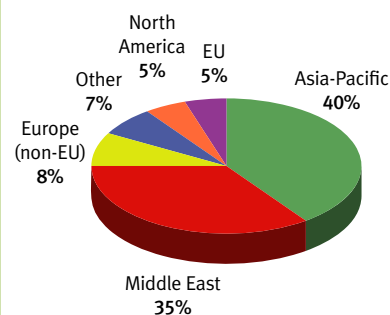
Chian Chia invests \$140,000 in product development initiatives annually. R&D work in coming months will focus on increasing the resistors' precision and durability.

#### Profile

##### Production units/mth



##### Export markets



#### Contact details

##### Business contact

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##### Address

1 Block A, Tangtou New Village Industrial Zone, Shiyan, Bao'an, Shenzhen, Guangdong, China

#### Company facts

Year established	1986
Business type	Manufacturer
Company ownership	Taiwan-invested
Head office location	Shenzhen (Guangdong)
Number of factories	2
Factory location(s)	Shenzhen, Qingyuan (Guangdong)
Total factory area	15,000sqm
No. of full-time employees	500
No. of R&D/design staff	50
No. of QC staff	40
Annual sales (all products)	\$13.0mn
Annual R&D spending	\$140,000
ISO certification	Yes

#### Sales & output: Passive components

Annual sales	\$12.0mn
Share of total sales	92%
Annual export sales	\$6.0mn
Total monthly capacity	600,000,000 units
Average monthly output	600,000,000 units
Capacity utilized	100%
Average monthly exports	300,000,000 units
Export ratio	50%
OEM % of exports	100%
ODM % of exports	—
OBM % of exports	—
Other products made	Fiberglass, cutting, welding machines

### Capability

#### Production checklist

Coating machines	Yes
Epoxy/cement-potting machines	Yes
Hermetic sealing machines	Yes
Lead processing machines	Yes
Molding machines	Yes
Welding machines	Yes
Winding machines	Yes

#### Exports by product

Capacitors	—
Coils	—
Inductors	—
Resistors	100%
Transformers	—

#### Exports by market

North America	5%
European Union	5%
Europe (non-EU)	8%
Asia-Pacific	40%
Middle East	35%
Other	7%

### Survey

- **Export prices**  
Increased
- **Export price increase**  
11-15%
- **Export sales**  
Increase 10-20%
- **Target market**  
European Union
- **Capital expenditure**  
Increase up to 50%
- **Major challenge**  
Price competition
- **Export capability**  
Improve operating efficiency
- **R&D focus**  
Increase precision and durability

### Popular export models



#### Resistor

Model	MF
MOQ	10,000 units
Packaging	T/R or T/B
Delivery	7 days
Price	•

**Description:** Metal film type; 0.1 to 1% tolerance; 1 to 10ohm resistance range; 500V maximum working voltage; 1,000V maximum overload voltage; 0.13, 0.25, 0.5, 1, 2, 3, 5W wattage; for TVs, LEDs, monitors; SGS, REACH



#### Resistor

Model	MOF
MOQ	5,000 units
Packaging	T/R or T/B
Delivery	7 days
Price	•

**Description:** Metal oxide film type; 5% tolerance; 1 to 10ohm resistance range; 500V maximum working voltage; 1,000V maximum overload voltage; 0.25, 0.5, 1, 2, 3, 5W wattage; for TVs, LEDs, monitors; SGS, REACH



#### Resistor

Model	CR
MOQ	5,000 units
Packaging	T/R or T/B
Delivery	7 days
Price	•

**Description:** Cement type; 5% tolerance; 1 to 10ohm resistance range; 500V maximum working voltage; 1,000V maximum overload voltage; 2, 3, 5, 7, 10, 15, 20, 30, 40, 50W wattage; for TVs, LEDs, monitors, power supplies; SGS, REACH

• Information not disclosed

## PRODUCT GALLERY

### Capacitors



**Hongzhi**

(profile page 40)

**Model:** MPX224K250VAC

**MOQ:** 300,000 units

**Packaging:** Carton

**Delivery:** 5 days

**Price:** •

**Description:** Interference suppression type; 0.22µF capacitance range; ±10% (K) capacitance tolerance; 250 to 275VAC rated voltage; 0.1% maximum dissipation factor at 1kHz, 25 C; -55 to 105 C operating temperature; for AC adapters; UL, CQC, VDE, CSA



**Hongzhi**

(profile page 40)

**Model:** Y2-102M

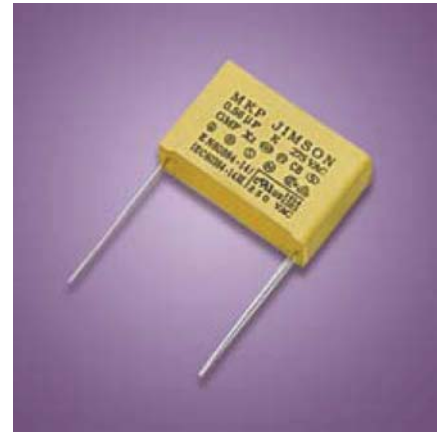
**MOQ:** 500,000 units

**Packaging:** Carton

**Delivery:** 5 days

**Price:** •

**Description:** Ceramic type; 1,000pF±20% capacitance range; 250V rated voltage; Y5V temperature characteristic; 7.5±0.5mm lead spacing; for AC adapters



**Jimson**

(profile page 42)

**Model:** X2 MKP

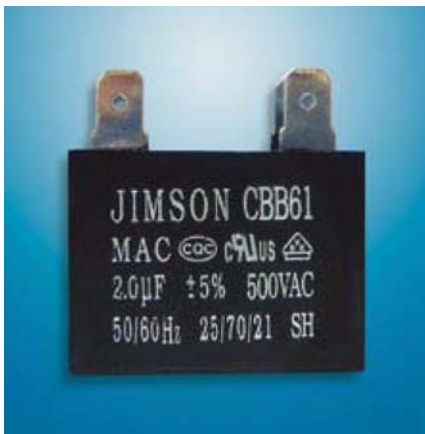
**MOQ:** 1,000 units

**Packaging:** Carton

**Delivery:** 20 days

**Price:** •

**Description:** Film type; UL94V-0-rated vacuum evaporated metal coating; 0.001 to 2.2µF/275VAC (50/60Hz) capacitance vs rated voltage; +20 (M), +10 (K), +5% (J) capacitance tolerance; ≤0.1% (PP) at 20 C, 1kHz dissipation factor



**Jimson**

(profile page 42)

**Model:** CBB61 MAC

**MOQ:** 1,000 units

**Packaging:** Carton

**Delivery:** 20 days

**Price:** •

**Description:** AC motor type with PP dielectric; UL94V-0-rated vacuum evaporated metal coating; 1 to 50µF, 500VAC; 1 to 13µF, 250VAC; 1 to 6µF, 400VAC; 1 to 6µF/500VAC capacitance vs rated voltage; ±20 (M), ±10 (K), ±5% (K) capacitance tolerance



**Sancon Jetwell (Haimen)**

(profile page 48)

**Model:** CD293

**MOQ:** 1,000 units

**Packaging:** Carton

**Delivery:** 20 days

**Price:** •

**Description:** Aluminum electrolytic type; 68 to 82,000µF nominal capacitance range; ±20% capacitance tolerance; 10 to 160V rated voltage; 1≤0.01CV or 1.5mA leakage current; -40 to 85 C operating temperature; for PCB mounting; SGS, REACH



**Sancon Jetwell (Haimen)**

(profile page 48)

**Model:** CD117H

**MOQ:** 40,000 units

**Packaging:** Carton

**Delivery:** 20 days

**Price:** •

**Description:** Aluminum electrolytic type; 0.47 to 47µF nominal capacitance range; 10 to 50V rated voltage; -40 to 105 C operating temperature; for high-stability circuits, sensors, advanced instruments, high-precision measuring equipment; SGS, REACH

• Information not disclosed

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