



Company Profile

Feb. 2013












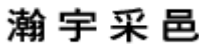
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- **PDC Company Milestone**
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Walsin Group Overview



PSA Member Companies & WTC Group

	Member Company	Brand Owned	Product Offering
 <p>PSA 華科事業群 PASSIVE SYSTEM ALLIANCE</p>	Walsin Technology (2492.TW) Joined PSA in 1992		MLCC, Chip-R, Disc Cap, Varistor, RF device & module
	Prosperity Dielectrics (6173.TW) Joined PSA in 2005		MLCC, Chip-R, ceramic dielectric powders, disc type semi-conductive capacitor elements.
			Inductor, Protective Choke, Diode, Coil
	Kamaya Joined PSA in 2006		Chip Fuse, specialty, SMD
	Nitsuko Electronics Joined PSA in 2001		Film Capacitor, DC/DC Converter
	Hannstar Board (5469.TW) Joined PSA in 2008		NB 、 Telecom 、 IPC 、 Multi-layer 、 HDI Board
	Info-Tek Corporation (8183.TW) Joined PSA in 2009		PCBA Assembly 、 SMT 、 Motherboard 、 VGA Card
	Global Brands Mfr (6191.TW) Joined PSA in 2010		PCB production 、 EMS
	Walton Advanced (8110.TW) Joined PSA in 1995		Turnkey IC Assembly & Testing
	Walton Chaintech (2425.TW) Joined PSA in 2005		Motherboard, VGA Card, DMPD
Hannstar Color (Shanghai) Joined PSA in 2007		Injection 、 design & production of refined mode	

Wide Product Range of PSA Group



Powder



MLCC



Chip-R



Coil



Diode



RF Devices



Module



Varistor



AC/CC



Inductor



PCB

Products offered under the name brand of	MLCC	Chip-R	Powder	Diode	Transformer	Power Choke	Inductor	RF Devices	Protective	Disc. Cap	PCB	PCBA
	√	√	√	-	-	-	-	-	-	-	-	-
	-	-	-	√	√	√	√	-	TVS	-	-	-
	√	√	-	-	-	-	√	√	Varistor	AC/CC	-	-
	-	√	-	-	-	-	-	-	Chip Fuse	√-	-	-
	√	√	-	-	-	-	-	-	-	√	-	-
	√	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	√	-
	-	-	-	-	-	-	-	-	-	-	√	√
	-	-	-	-	-	-	-	-	-	-	-	√

PDC Company milestone

Information:

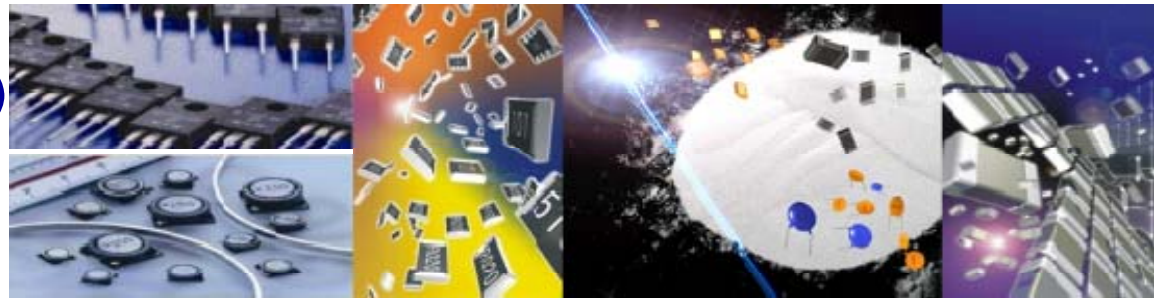
- Established date: June, 1990
- Capital: 1.861 Billion NTD (approx. 62 MUSD)
- Employees: 1,447
- Brand : PDC, Frontier
- Revenue : 2.18 Billion NTD / Yr 2012

Location Sites:

- Taiwan -- Taoyuan / Yangmei Plant / Sindian Office
- China -- Wujiang / Kunshan / Dongguan / Yongzhou / Chongqing Plant

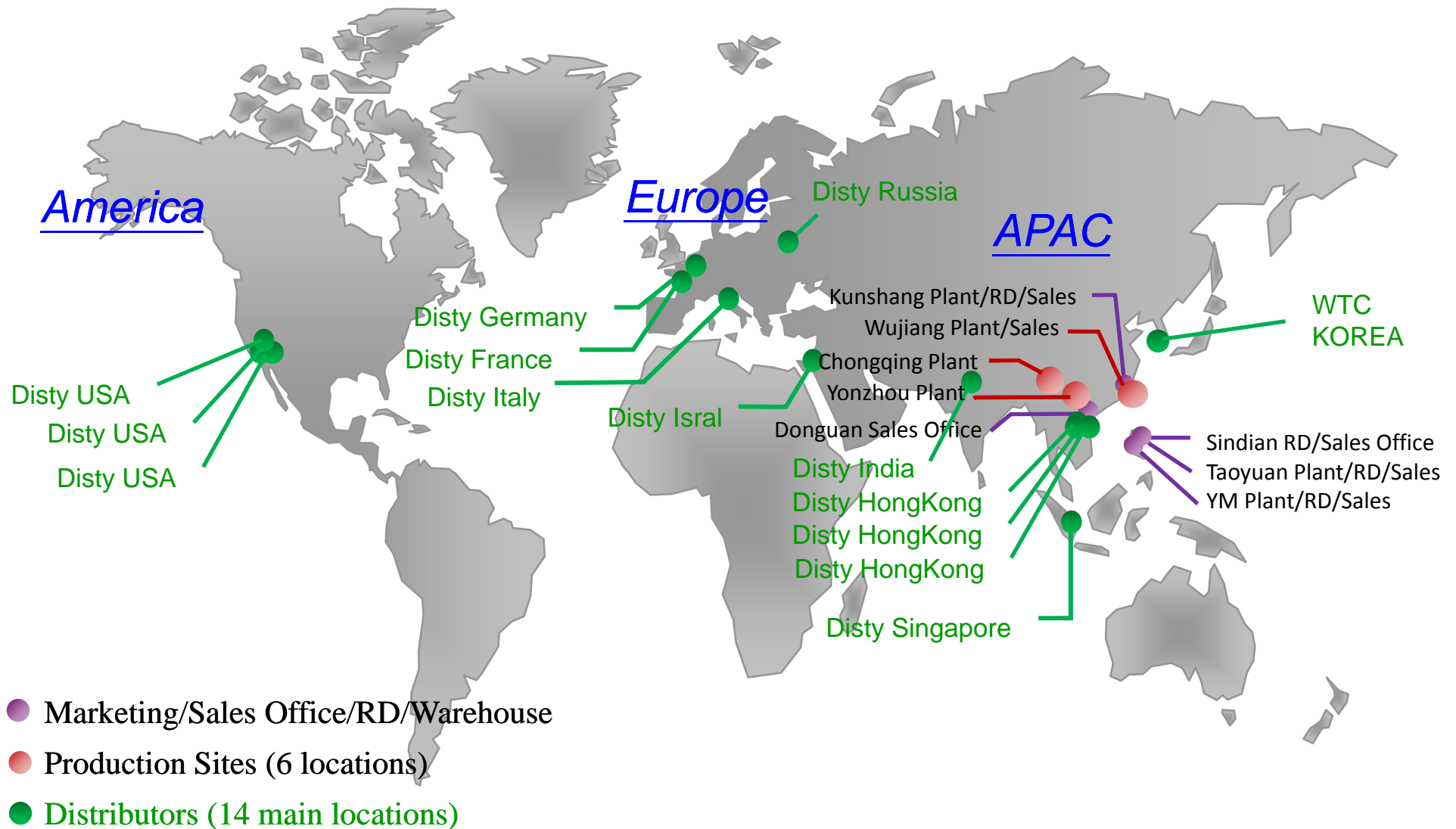
Manufacturing experience:

- Coil – Since 1972 (41 years)
- Diode – Since 1984 (29 years)
- Powder – Since 1995 (18 years)
- MLCC – Since 1990 (23 years)
- CR – Since 1996 (17 years)



PDC Manufacturing Information

Global Sales and Manufacturing Platform



Manufacturing Facilities



Taoyuan Plant, Taiwan

Location: Taoyuan, Taiwan

Date established: 1995

Production Space: 376,133 ft²

Employees: 200

Product produced: MLCC Dielectric Powders

Capacity: 250 Ton/m

Product produced: Chip-R, Inductors.

Chip-R - 70KK



Wujiang Plant, China

Location: Wujiang, China

Date established: April ,2004

Production Space: 224,434 ft²

Employees: 48

Product produced: AC, CC Dielectric Powders, SBL Element

Capacity: 100/Mon

Manufacturing Facilities



Yang Mei Plant, Taiwan

Location: Yang Mei, Taiwan

Date established: June, 1992

Production Space: 141,066 ft²

Employees: 200

Product produced: MLCC, Low Ohmic, Metal Strip

Capacity: MLCC - 200KK



Kun Shan, China (Frontier)

Location: Kun Shan, China

Date established: 2002

Production Space: 62,400 ft²

Employees: 78

Product produced: Diode, diffused wafer, dice, rectifier, bridge

Manufacturing Facilities



Dong Guan, China (Frontier)

Location: Dong Guan, China

Date established: 2000

Employees: 20

Sales office: Magnetic components



Yong Zhou, China (Frontier)

Production Space: 64,550 ft²

Date established: 2007

Employees: 806

Product produced: Magnetic components



Chong Qing, China (Frontier)

Production Space: 51,666 ft²

Date established: 2011

Employees: 63

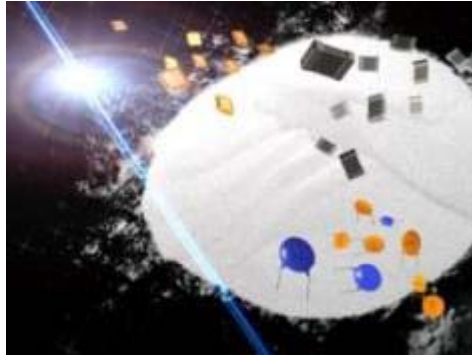
Product produced: Magnetic components



Product Information

Powder / MLCC / Chip-R

▶ Dielectrics Powder



- BT Series
- Disc Series
- MLCC Series
- Microwave Series

▶ Semiconductive ceramic capacitor element



- Type: Y5V/Y5U/Y5P
- W.V.: 16V/25V/50V
- Cap.: 103-224
- Size: 3.0-11.0mm

▶ MLCC



- Safety Certified X1/Y2, X2/Y3
- High Voltage: 100V – 6KV
- Big Size: 0603–13060
- Custom Made Available

▶ Chip-R



- Low Resistance: down to 1m Ω
- High Power: up to 5W
- High Precision: down to 0.1%
- High Voltage: up to 2KV

Coil / Diode

► Coil & Diode



**High Current
SMD Power
Chokes**

**SMD Power
Inductors**

**Inverter
Transformer**

**SMD Air Coils,
Chip Coils and
Molded Wire
Wound
Inductors**

**SMD Wire-
wound Chip
Inductors and
Common
Mode Chokes**

**Various Lead
Type Inductors
and
Transformers**



**High Voltage
Rectifiers**

**ITO220
Package
Rectifiers**

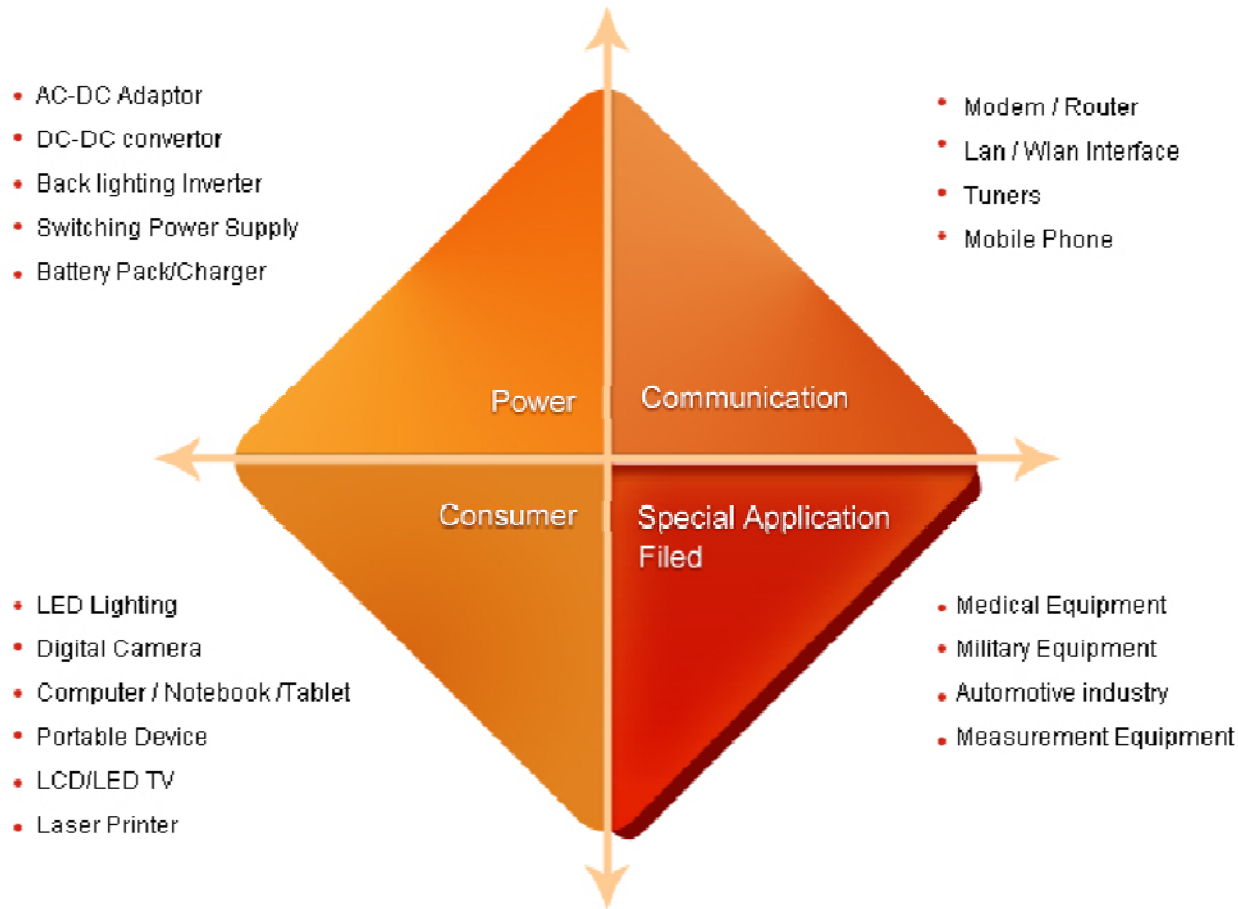
**SMA-B-C
Package
Rectifiers**

**Various Type
Rectifiers-1**

**Various Type
Rectifiers-2**

WAFER

Product Application



PDC Global Key Accounts by Application Segment

Consumer

AOC

OSRAM

SAMSUNG

SIEMENS

KONKA

TCL

SHARP

MITAC 神通電腦

LG

Communication / Broadband

technicolor

MOTOROLA MOBILITY

CISCO

ASKEY

ECHOSTAR
Entertainment-Anytime. Anywhere.

PEGATRON

FOXCONN
鴻海企業集團

BenQ

Power Supply

AcBel

ASTECH

FRIWO

DELTA

intersil

LITEON

HIPRO
CUSTOMER SATISFACTION

ROAL

Computer

GIGABYTE

acer

PEGATRON

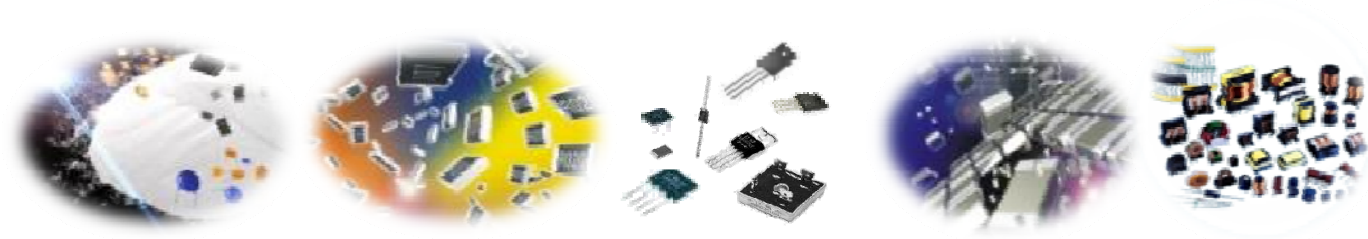
Quanta Computer

Accton
智邦科技

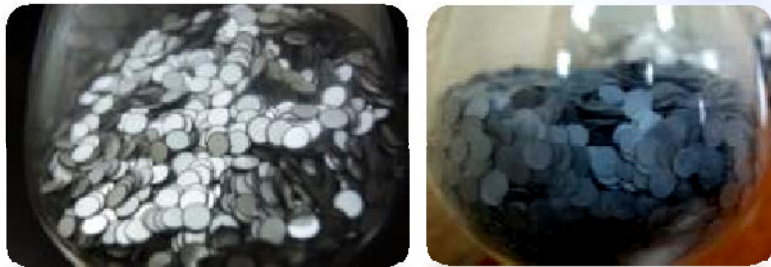
wistron

FOXCONN
鴻海企業集團

Dielectric Powder Products



Powder Products



Market Performance

PDC provides full lines of dielectrics powder along with below good specialty for Disc type capacitor, MLCC type capacitor, and patch antenna/resonator/filter applications.

PDC ceramic dielectric powder ranks in No. 2 in global capacity and No. 3 in global market share.

Specialty

- 1) Excellent Electrical Prosperity
- 2) Full series products are Lead-Free and in compliance with RoHS standard.
- 3) Various dielectric constant of Microwave dielectrics powder.
- 4) Specialized in Solid state BT with challenging price and effective material.
- 5) Uniform particles size distribution and consistent lot to lot.

Product Series

MLCC

- PME series- NPO X7R
- BME series-Y5V X7R NPO
- Cu Series

Barium Titanate

- Purity: 98% / 99% /99.5%
- Mole ratio: 0.995/1.000/1.005
- Particle Size: 1.4/1.0/0.8/0.5

Wet Extrusion

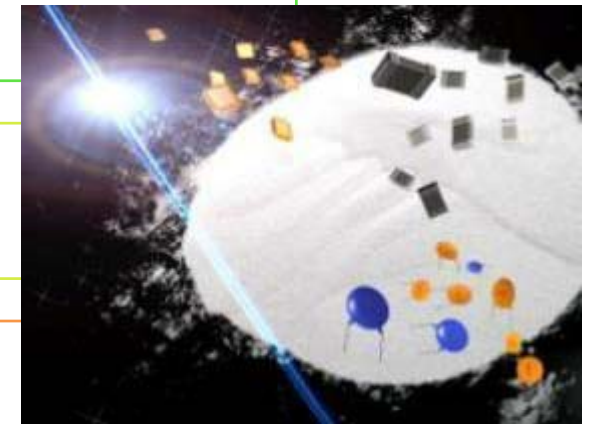
- Temperature Compensation Type
- High-K Type
- Semiconductive Type

Dry Pressing

- Temperature Compensation Type
- High-K Type

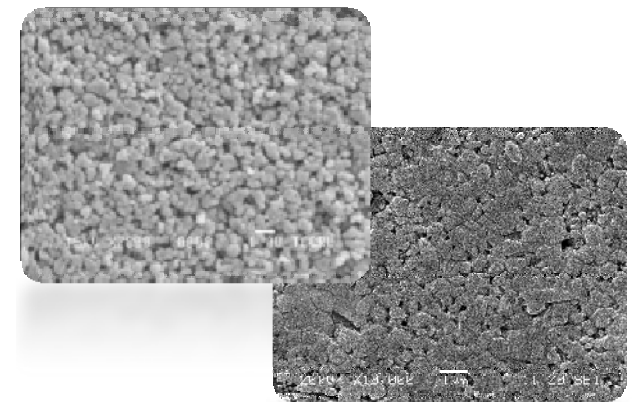
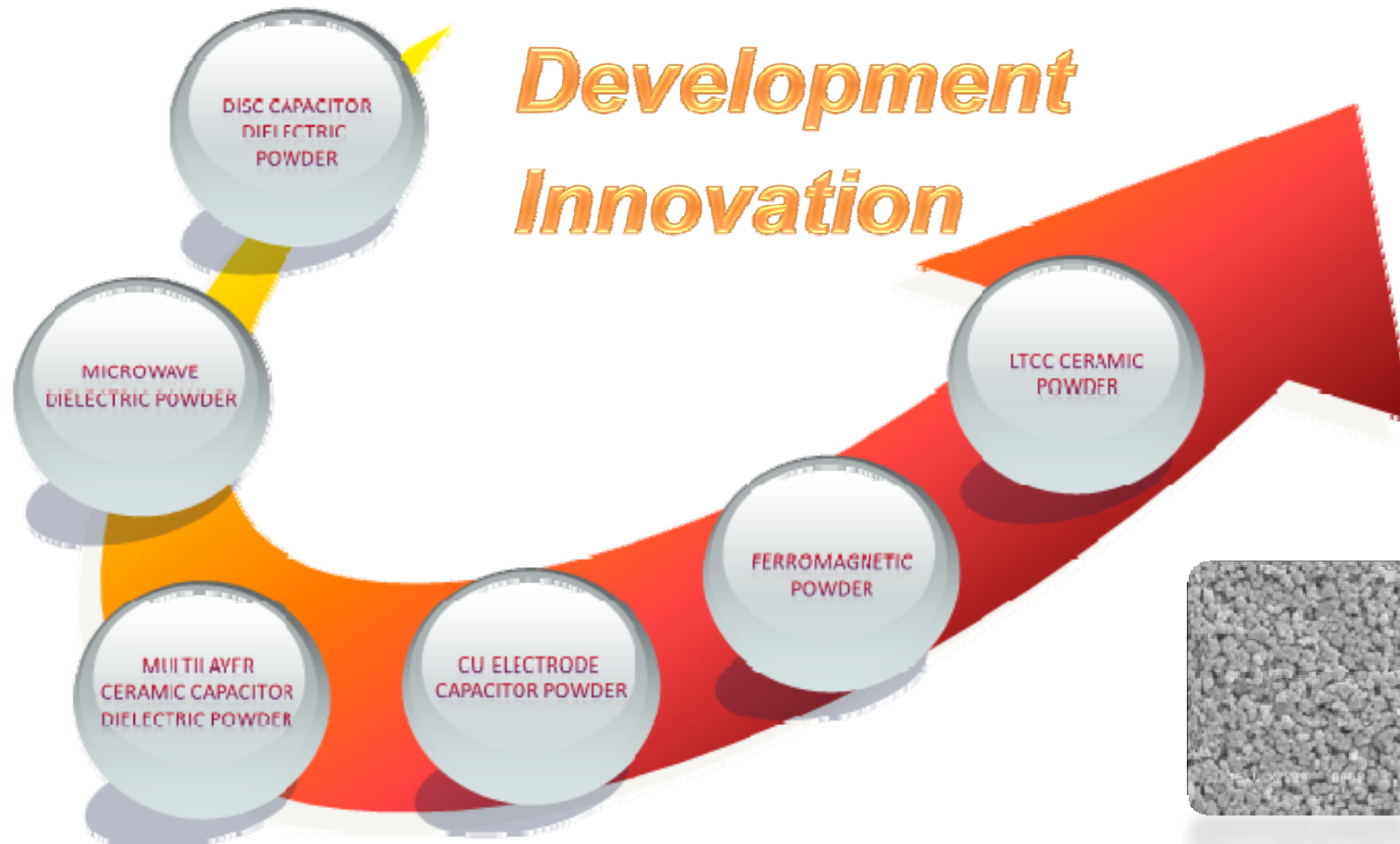
Microwave

- K10 K20 K37 K40 K45 K65 K90 K100 K130

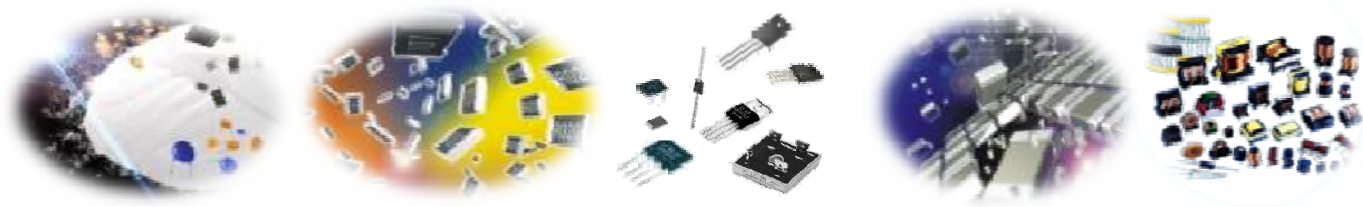


Powder Products

*Research
Development
Innovation*



MLCC Products



MLCC Products



Specification

- 1) High Voltage : 100V ~6KV
- 2) High Precision : tolerance by $\pm 2\%$ / $\pm 1\%$
- 3) Safety recognized : X1/Y2 , X2/Y3 , 1808 / 2211
- 4) Big size : 3035 / 4252 / 5550 / 5780 / 6560/ 7680/ 8850/ 13060
- 5) Low ESR : 0805 to 2220
- 6) Anti-Bending : (Soft termination) : 0603 to 2225
- 7) Pb/Sn Plating : 0402 to 2225 , 100V~3KV
- 8) LED Lighting High Cap Mid-Voltage MLCC

Application

- 1) Communication (Modem, Cable Modem, LAN, HUB, Router, ADSL, VDSL, Cell Phone, WLAN, Splitter)
- 2) Consumer Electronics (Digital Camera, PS3,X-Box)
- 3) Industrial Electronics (Connector, Instrument)
- 4) Power (DC-AC Inverter, SPS, Adapter, Charger, DC-DC Converter, Battery Pack for N/B & Cell Phone, Ballast)

MLCC Product Series

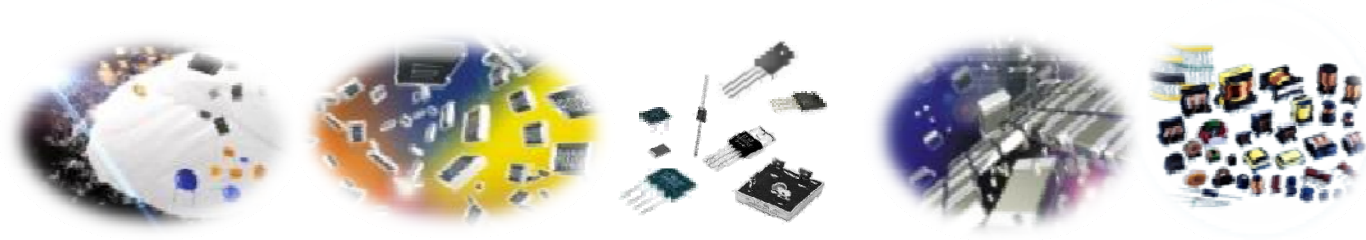
Portfolios	Series	Size	Dielectric	Rating Volt	Capacitance
General Purpose	MA Series	0402 to 1812	NPO/X7R X5R/Y5V	≤100V	≤0.82uF
High Cap Mini-Volt.		0402 to 1812	X7R/X5R Y5V	≤50V	1uF to 100uF
High Cap Mid-Volt.		1206 to 2225	X7R	50V to 100V	0.68uF-10uF
High Cap High Volt.		1206 to 2225	X7R	≥100V	0.1uF-2.2uF
Middle Voltage		0603 to 2225	NPO/X7R	≥100V to 3000V	≤68nF
High Voltage	FV Series	1808/2211/2220	NPO/X7R	≥4000V	≤1nF
Safety Certificated	FH & FK Series	1206 to 2211	NPO/X7R	AC 250V	≤4.7nF
Military standard	FM Series	0603 to 2225	NPO/X7R	25V to 10000V	Full range
High Freq.	RF & HH Series	0201/0402	NPO	50V/100V	≤1nF
Big Size	MA Series	≥2220	NPO/X7R	25 to 3000V	Full range
Low D.F.	FL Series	Full range	X7R	250V/500V	≤3.3nF

MLCC Big size Product MAP

Rated Voltage	50V	100V	200V/250V	500V/630V
Dielectric	X7R	X7R	X7R	X7R
1210	225	225	474	563
1812	275	225	105	124
1825	565	475	225	334
2020	565	475	225	334
2220	685	475	225	474
2225	685	475	225	105
3035	685	475	335	125
3333	825	475	335	125
3530	825	475	475	125
3640	825	565	475	225
3940	825	655	565	225
4045	106	685	565	225
4238	106	685	565	335
4252	106	685	685	335

* We also can provide customer made product range , please contact with PDC local representative.

Chip Resistor Products



Chip Resistor Products



Specification

- 1) High Precision : 0.1% / 0.25% / 0.5%
- 2) High Power : 2512 (2W), 2010 (1W) , 1206 (0.5W)
- 3) High Voltage : 2512 (2000V) , 2010 (1500V) ,1206 (800V)
- 4) Metal Strip Current Sensing : 1m ohm to 50m ohm
- 5) Thick Film Low Ohmic : 0.50 ohm to 0.98 ohm, 1%
- 6) High Power Low Ohmic :0.50 to 0.98ohm
- 7) Metal paste : 0.047 ohm to 0.100 ohm
- 8) Metal paste High Power: 0.047 ohm to 0.100 ohm ; 2512 (2W), 2010 (1W) , 1206 (3/4W) , 0805 (1/2W) , 0603 (1/4W)

Application

- 1) Computer (N/B, M/B, IPC, PDA)
- 2) Communication (Cable Modem, LAN, HUB, Router, ADSL, VDSL, Cell Phone, WLAN)
- 3) Consumer Electronics (Digital Camera, PS3,X-Box)
- 4) Industrial Electronics (Instrument)
- 5) Power (DC-AC Inverter, SPS, Adapter, Charger, DC-DC Converter, Battery Pack for N/B & Cell Phone, Ballast)

Chip Resistor Specialty Products

Series	Descriptive	Resistance
FCF	Thick Film Chip Resistors	1R0 to 10M
FCF-L	Thick Film Low R Chip Resistors	R050 to R980
FCF-B	High Precision Thick Film Chip Resistor	470R-330K
FAF	High Precision Thin Film Chip Resistor	10R-1M
FMF	Metal Strip Current Sensing Resistors	R001 to R050
FPF	High Power Chip Resistors	1R0 to 1M
FPF-L	High Power Low R Chip Resistors	R050 to R980
FVF	High Voltage Chip Resistors	100K-10M
FNF	Surge Resistors	1R0 to 1M
FPS	High Power Surge Resistors	1R0 to 1M
FHF	High Resistance Chip Resistors	10M to 100M
FTF	Trimmable Chip Resistors	10-1M
FWF	Automotive Chip Resistors	1R0-10M
FGF	Non-Magnetic Chip Resistors	10R-1M
FBF	Metal paste Chip Resistors	R047-R100

Diode Products



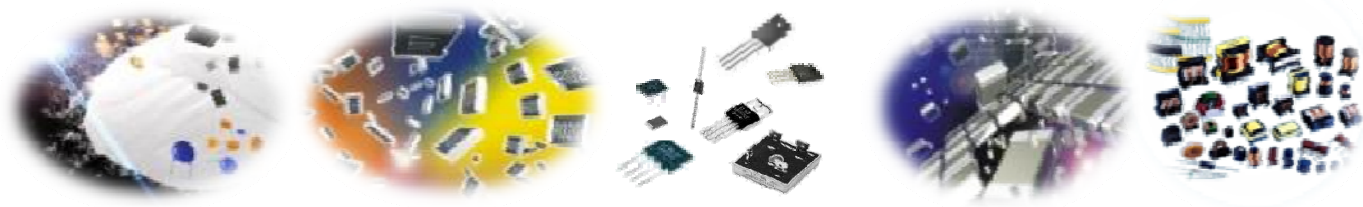
Diode Products

TYPE	CURRENT	VOLTAGE	TRR	Type
Schottky Rectifier	1A ~ 30A	20 ~ 200V		DIP/SMD DPAK/D2PAK TO- 220AB/ITO220AB
Low Vf Schottky Rectifier	3A~30A	40 ~ 200V		DIP/SMD TO-220AB/ITO220AB
Transient Voltage Suppressor	400W ~ 5,000W	6.8 ~ 440V		DIP/SMD
Zener Diode	1W ~ 5W	3.3 ~ 330V		DIP/SMD
Surface Mount Rectifier	0.5~5A(SMA/SMB/SMC)	20 ~ 1,000V		SMD
Microwave Oven Rectifier	350mA ~ 750mA	9KV ~ 16KV		DIP
Photo Flash Rectifier	200mA ~ 500mA	1KV ~ 6KV	500nS	DIP
Fast Efficient Rectifier	1A ~ 3A	50 ~ 600 V	25nS	DIP/SMD
Super Fast Rectifier	1A ~ 6A	50 ~ 600V	35nS	DIP/SMD
Ultra Fast Rectifier	1A ~ 20A	50 ~ 1,000V	50 ~ 75nS	DIP/SMD
Fast Recover Rectifier	1A ~ 6A	50 ~ 1,000V	120 ~ 500nS	DIP/SMD
General Purpose Rectifier	1A ~ 6A	50 ~ 1,000V		DIP/SMD
Bridges	1A ~ 50A	50 ~ 1,000V		DIP/SMD



















Application Field

Product	P/N	Power Current	Voltage	Package	Application
Zener	Z10-xxB Series	1W	100V~300	DO-41	Printer
TVS	1.5SMCJ xx	1500W	20~100V	SMC	SET BOX / LNB
	3.0SMCJxx	3000W	20~100V	SMC	SET BOX / LNB
SKY (Schottky)	SD10xxCT	10A	45~200V	D2PAK	LED TV
	SD20xxCT	20A	45~200V	D2PAK	LED TV
	SR10xxCT/CTF	10A	45~200V	ITO220AB / TO220AB	LCT Monitor Power supply
	SR20xxCT/CTF	20A	45~200V	ITO220AB / TO220AB	LCT Monitor Power supply
	SK34A/SS34A	3A	40V	SMA/SMA-F	Notebook
	LK24A/LK34A	2~3A	40V	SMA/SMA-F	Consumer Electronics Product
FHV	FV5M-xx	5mA	4KV~6KV	Axial Lead	Printer
HV	GP02-50	0.2A	5KV	DO-15	Motorcycle
Ultrafast	US1M	1A	1000V	SMA	LED Lighting
Bridge	MD6S	0.8A	600V	MD	LED Lighting

Magnetic Products



Magnetic Products

Application	Product	Series Reference	Photos
Signal	Wire-Wound Chip Inductor	0402CP,0603CP, 0805CP,1008CP	
	Common Mode Choke	SCM2012F, SCM7038F	 
	Air Wound Coil	29XX	
	Balun	SBTXX	
Power	Power Choke	CSM, MCS, CSN, CSS	   
	Line Filter	CFU, CFS, 3501, 3261	  
	Transformers	SRV,SEV,SEH	  
Others	Surge Inductors	OI0606CI, CS613, SMT771F	  



Brand Value & Market Performance

Brand Value & Market Performance

Brand Value

The first supplier in Asia to get SEMKO product safety certificate in 2001.

ISO 9001 certificated in 2003.

TS16949、ISO 14000 and OHSAS 18000 certificated in 2004.

Industrial Sustainable Excellence Award in 2004.

IECQ QC080000 HSF certificated in 2008.

Deloitte Technology Fast 500 Taiwan 2008.

Common Wealth Magazine 2007 Top 1000 Manufacturers in Taiwan Ranked in No. 705.

Common Wealth Magazine 2008 Top 1000 Manufacturers in Taiwan Ranked in No. 682.

Common Wealth Magazine 2009 Top 1000 Manufacturers in Taiwan Ranked in No. 677.

Recognition of Winning the Silver Invention Award for Copper or Its Alloy Cofirable Dielectric Ceramics in 2012.

Market Performance

PDC ceramic dielectric powder ranks in No. 2 in global capacity and No. 3 in global market share.

The only local manufacturer in Taiwan with the capability in specialty products including multiple-layer ceramic capacitors, chip resistors, and coils.

The only local manufacturer in Taiwan entered the supply chain of Japan market.

Certification

Certification	Year of approval
ISO 9002	1994
X1Y2/X2Y3	2001
ISO 9001(2000)	2000
TS 16949	2007
OHSAS 18001	2007
ISO 14001	2007
QC 080000	2008





PDC Key Competence

Key Competence

Packaged Products	Diversity of Product: MLCC, CHIP-R, Choke, Transformer, Coil, Filter, Diode, TVS, and Dielectric powder One-stop service Total solution
Integrated of Technology	Capability of developing and manufacturing dielectric powder for MLCC BME process for middle & Hi-voltage MLCC Owning self-making fab and assembly lines for diode products
Service, Design	Quick Response in Sample Request Customer Design for Pro-Type Sample Good RD/FAE/QA team.
Cost advantage	<u>Labor cost</u> : Major production sites are in China. <u>Material cost</u> : In house dielectric powder and BME process of Hi-V MLCC <u>Equipment cost</u> : Capability of develop automatic facilities
Delivery	Strong resources from PSA platform, 17 countries and 120 hub locations. SAP ERP logistic & planning system
Finance	Strong financial position and cash flow, no banking debt.

PDC **SUPPORTING YOU FORWARD**

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Supporting You Forward

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HYUNDAI CERAMICS CO., LTD.