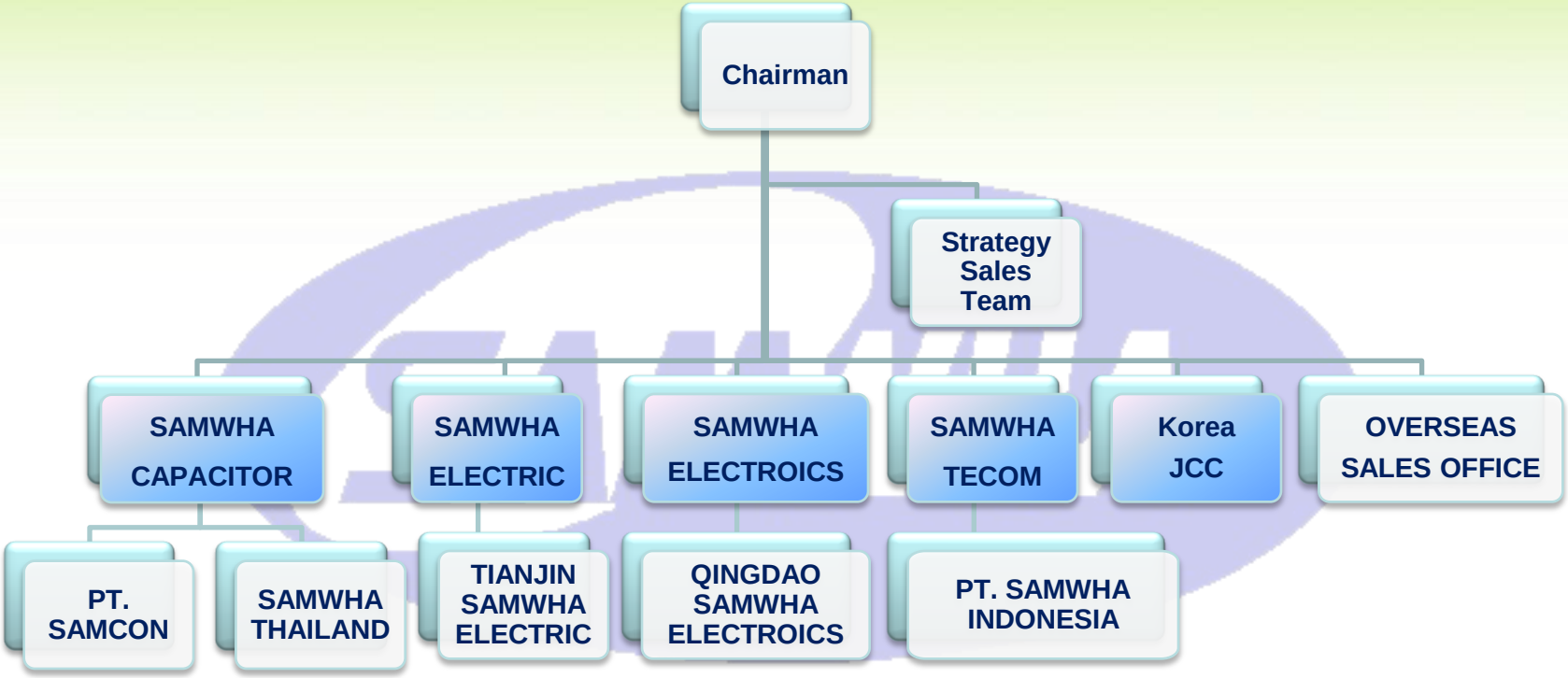
SAMWHA CAPACITOR GROUP

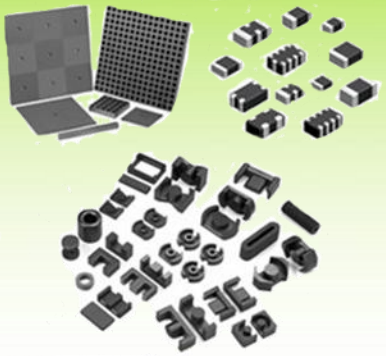
WHO WE ARE

Profile
History
Organization
Global Network

Company	▪ SAMWHA CAPACITOR GROUP
Establishment	▪ August 14, 1956
Headquarter	▪ Samyoung Bldg, 587-8, Shinsa-Dong, Gangnam-Gu, Seoul, KOREA.
Performance	▪ 2007 : US$ 505 Millions ▪ 2008 : US$ 530 Millions ▪ 2009 : US$ 540 Millions ▪ 2010 : US$ 650 Millions ▪ 2011 : US$ 610 Millions
Affiliated Companies	▪ 5 Affiliated companies
Global Network	▪ 10 Factories & 13 Sales offices
Personnel	▪ 4,860 (INCLUDING OVERSEAS)



5 affiliated companies



SAMWHA ELECTRIC

1973

SAMWHA ELECTRONICS

1976

SAMWHA CAPACITOR

1956

SAMWHA CAPACITOR GROUP

SAMWHA TECOM

1978

KOREA JCC

1986

• History

1956 • Established Ohan Industry

1963 • First mass-production of Power capacitors in Korea

1964 • First mass-production of capacitors for machinery in Korea

1968 • Renamed Samwha Electric to Samwha Capacitor Co., Ltd.

1969 • First mass-production of ceramic capacitors in Korea

1973 • Established Samwha Nichicon

1974 • Renamed Samwha Nichicon to Samwha Electric Co., Ltd.

1976 • Established Samwha Electronics Co., Ltd

1985 • First mass-production of MLCC with original technology in Korea

1985 • Established Korea JCC Co., Ltd.

1991 • Established PT. Samwha Indonesia

1993 • Established Tianjin Samwha Electric Co., Ltd. (China)

1995 • Renamed Daesung Electronics to Samwha Tecom Co., Ltd.
• Established Samwha Hi-Tech International Trading Co., Ltd

1997 • Established PT. SAMCON (Indonesia)
• Established Samwha USA Inc. (USA)
• Established Samwha Thailand Co., Ltd.

2000 • Established Qingdao Samwha Electronics Co., Ltd

2001 • Established Samwha Europe GmbH (Germany)

2002 • Established Samwha Hong kong Co.,Ltd. (Hong kong)

2007 • Established Samwha Poland Sp. Z o.o. (Poland)

2009 • Established Samwha Hungary Kft. (Hungary)
• Established Samwha India Energy Savings Pvt. Ltd. (India)

10 Factories & 13 sales offices

Samwha Capacitor Yongin Plant (Korea)
– MLCC, Ceramic Capacitors, Beads & Inductors

Samwha Electric Cheongju plant (Korea)
– Green Cap (EDLC), E-cap (Snap-in,Screw,Radial)

Samwha Electric Chungju Plant (Korea)
– Hi Cap (Polymer capacitor),), E-cap (SMD)

Samwha Electronics Yongin Plant (Korea)
– Ferrite Cores, Chip Components, Magnetic Powder Cores

KOREA JCC (Korea)
– Cathode Foils, Anode Foils, Forming Foils

Qingdao Samwha Electronics (China)
– Soft Ferrite Cores (Mn-Zn and Ni-Zn Cores , etc)

Tianjin Samwha Electric #2 plant (China)
– Green Cap (EDLC), E-cap (Radial,SMD)

PT. Samwha Indonesia (Indonesia)
– SMD Power Inductors, Transformers, Linearity & Choke

Tianjin Samwha Electric #1 plant (China)
– Green Cap (EDLC), E-cap (Snap-in,Screw,Radial)

Samwha Thailand Col., ltd. (Thailand)
– MLCC, Ceramic Capacitors, Beads & Inductors,

WHAT WE DO

Application Fields

Product Range

Application Fields

✓ Automotive

Engine control unit
HID Lamp
Fuel injector
Navigation
Sun roof
Power seat
Car audio system
Car accessories

- AEC-Q200 satisfied
- Soft termination, Open mode, Floating electrode design

✓ New Energy

Solar/Wind/Fuel cell
Inverter / Converter
EDLC + Battery
Electric Vehicle
Elevator
Overhead Crane
Welder
Pitch control system

✓ Display

PDP/LCD Module
LCD Back Light Unit
(CCFL, LED)

✓ Home appl.

TV
Air conditioner
Audio
Refrigerator
DVD

✓ Portable appl.

Cellular Phone
Laptop
Mp3
PDA

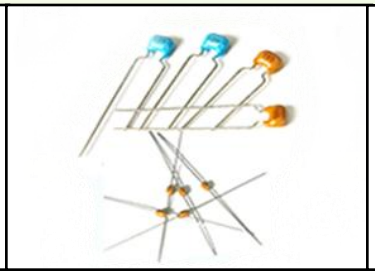
✓ Etc.

SMPS
UPS
Radio wave absorbent
Power Utility
PC (Mother board)
Inverter/Converter

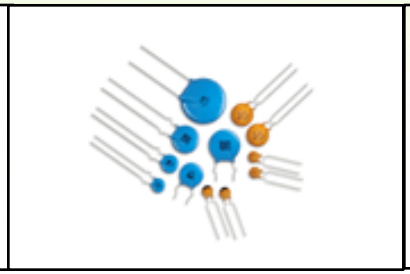
CAPACITOR

MLCC

Leaded MLCC



DCC



HPC Series

E-Cap

EDLC

DC Link Capacitor

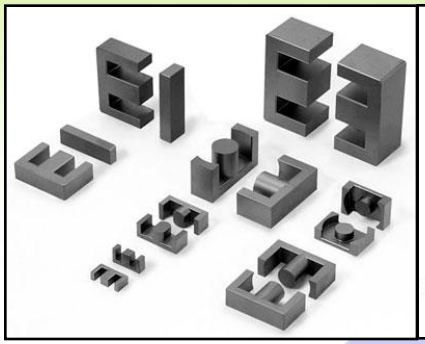
Power Capacitor

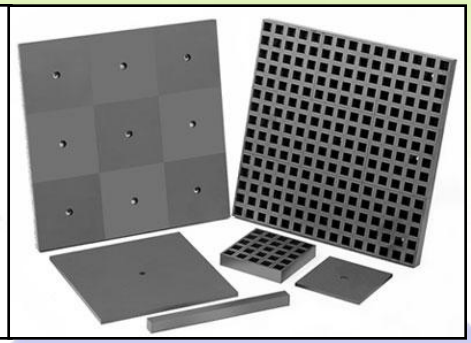
•MLCC : Multi Layer Ceramic Capacitor
•CP Series : Chip Packaging Capacitor
•HPC Series : High Power Capacitor

•E-Cap : Aluminum Electrolytic Capacitor
•EDLC : Electric Double Layer Capacitor

CORE

Ferrite Cores





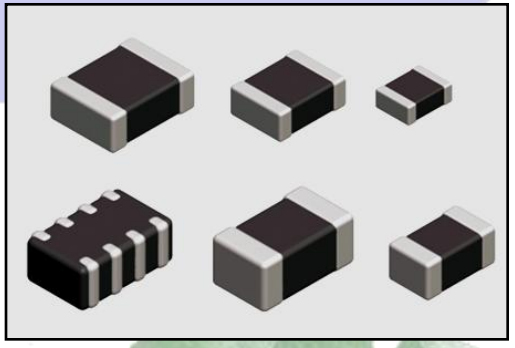
MPC

INDUCTOR

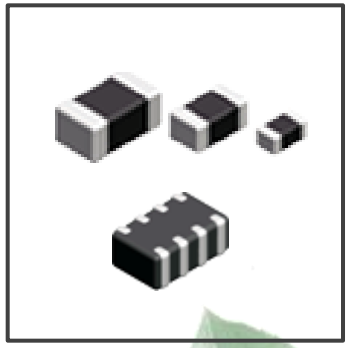
MPC Inductor

SMD Inductor

Chip Inductor



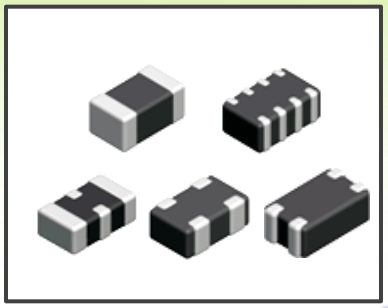
Chip Power Inductor



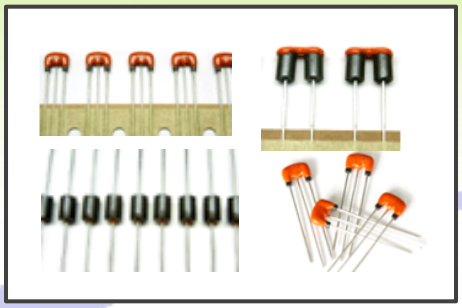
•MPC : Magnetic Powder Core

FILTER

Chip Filter

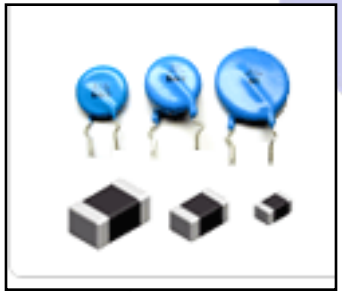


EMI Filter

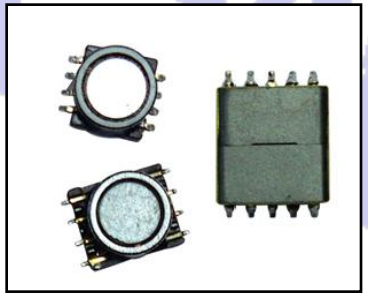


ETC.

Varistor



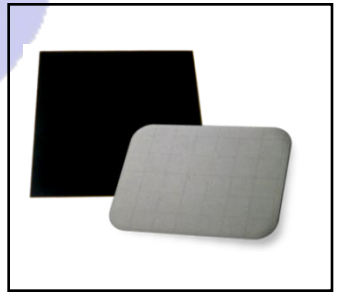
Transformer



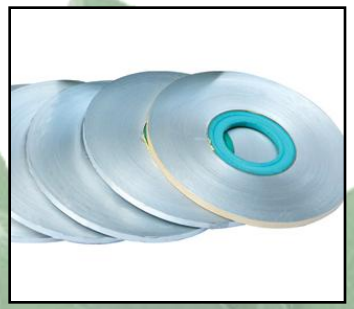
Chock coil

Electrode for EDLC

Ferrite Plate



Etched Cathode Foil



Rubber Pad

Base Plate

•EMI : Electromagnetic Interference

Environmental Management System

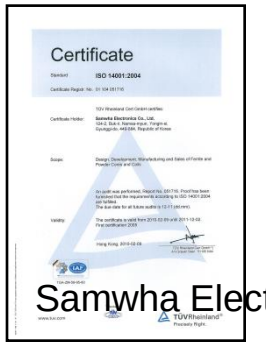
- **Eco-Partner, Green Program, S-Partner, REACH satisfied.**

Quality Management System

- **ISO 9001, ISO 14001, ISO/TS 16949.**

Samwha Capacitor Co., Ltd

Samwha Electric Co., Ltd



Samwha Electronic Co., Ltd

Samwha Tecom Co., Ltd

KOREA JCC Co., Ltd

Power Capacitor Div.

•Product Range of Heavy Electric Div.

Name	Range	Application
Capacitor	Low Volt. [Oil, Dry] Medium Volt. High Volt.	    
Bank System		 < PFC Bank>  < SVC >  < Harmonic Filter >  < IPF >

Capacitor Unit

The capacitors are designed for power factor correction and harmonics filtration in power network.
They are all-film dielectric and impregnated with an environmentally Non-PCB biodegradable insulation oil.
Each capacitor is provided with an internal discharge resistor.

Benefits

- Improve Power Factor
- Reduce Line Losses
- Decrease Voltage Drop

Product Scope

Type	Volt Range	Power Range	Standard
High	1P : 1 ~ 22kv 3P : 1 ~ 11kv	1P : 25 ~ 1000kvar 3P : 50 ~ 500kvar	IEC, ANSI, IEEE, NEMA IS(India)
Low	Oil : 220 ~ 1000v Dry : 220 ~ 1000v	Oil : 0.2 ~ 150kvar Dry : 0.2 ~ 50kvar	

Buyers

- Electricity Authority (Utility Company)
- Panel Builder
- Heavy Industrial Plant (Steel, Paper, Chemical, Automobile, Cement etc.)

Capacitor Bank

Capacitor Bank is an economical method of reducing the reactance of high voltage lines.
And it controls the level of voltage supplied by reducing or eliminating the voltage drop and increase power transfer in network.

Benefits

- **Increase power transmission capability**
- **Improve system stability**
- **Reduce system losses**
- **Improve voltage profile on the lines**

Bank Type

① **Cubicle Capacitor Bank :**

-. The product range consists of indoor and outdoor solutions, which can be single step fixed or other multi-step switched.

-. It will automatically compensate the network to maintain a preset level of power factor.

② **Open-Rack Capacitor Bank :**

-. This is the most common capacitor bank and available with internally fused capacitor units.

③ **Pole Mounted Capacitor Bank :**

-. It provides voltage support, reducing system losses, improving power factor in the network.

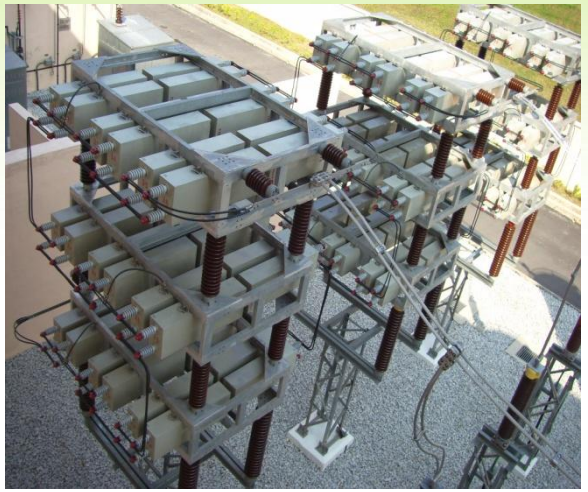
-. The installation is in a distribution network.

Buyers

- **Electricity Authority (Utility Company)**
- **Electrical Contractor**
- **Heavy Industrial Plant (Steel, Paper, Chemical, Automobile, Cement etc.)**

•Capacitor Bank (Open Structure, Enclosure, Pole Mounted)

110/130/150/250kV etc./ Transmission Line



11/22/33kV etc./ Distribution Line

• Main Customers

◎ Export: 40 Countries

FESCO Faisalabad Electric Supply Company

MEA(Thailand)

TENAGA NASIONAL BERHAD

Enel ENERGY IN TUNE WITH YOU.

PT PLN (Persero)

TẬP ĐOÀN ĐIỆN LỰC VIỆT NAM VIETNAM ELECTRICITY EVN

Moscow Electric Power Grid

Eskom

TransCo

PETRONAS GAS

ELECTROANDES

◎ Domestic: M/S 80%

KEPCO

SAMSUNG ENGINEERING

posco
소리없이 세상을 움직입니다
www.posco.co.kr

KERI
Korea Electrotechnology Research Institute

HYOSUNG Power & Industrial

HYUNDAI HEAVY INDUSTRIES CO.,LTD.

LG Industrial Systems

Reference

TNB(Malaysia)

Volt (Kv)	Mvar	Site	Scope of supply
132	60	Kuala Lumper Ampang Substation	SC, SR, NCT, Structure

Reference

EGAT(Thailand)

Volt (Kv)	Mvar	Site	Scope of supply
115	36	Bangkok Samphan Substation	SC, SR, NCT, Structure

Reference

KEPCO(Korea)

Volt (Kv)	Mvar	Site	Scope of supply
154	50	Cheong-Ha Substation, Korea	SC, SR, NCT, Structure

Reference

PT.PLN(Indonesia)

Volt (Kv)	Mvar	Site	Scope of supply
150	25	Duri Substation Sumatera Indonesia	CB, DS, ES, LA, SC, SR, CT, NCT, Structure (Engineering, Installation)

Reference

Moscow Electric Power Grid(Russia)

Volt (Kv)	Mvar	Site	Year	Scope of supply
110	25	Astrahan Substation	2009	SC, SR, NCT, Structure

Reference

PETRONAS (Malaysia)

Volt (Kv)	Mvar	Site	Scope of supply
6.6KV	1.25	Melaka, Malaysia	SC, SR, VC, CT, OCR, PANEL Power Factor Cotroller

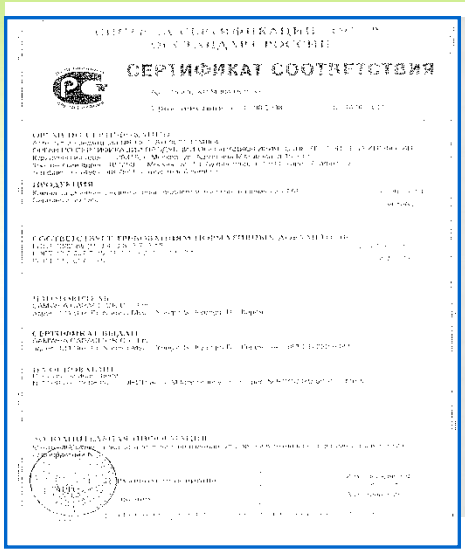
Reference

PEDEEE (SYRIA)

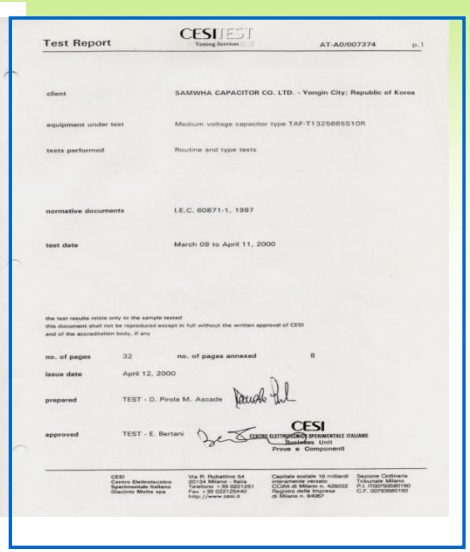
Volt (V)	var	Site	Scope of supply
400V	480/360/ 240/140 kvar	All around SYRIA	SC, MCCB, MC, FUSE, CUBICLE

Certification

[Russia ENIN]


СЕРТИФИКАТ СООТВЕТСТВИЯ

[Italy CESI]


Test Report

CESI

AT-A0/007374

client: SAMWHA CAPACITOR CO. LTD. - Yongin City; Republic of Korea

equipment under test: Medium voltage capacitor type TAF-T1325665S1OR

tests performed: Routine and type tests

normative documents: I.E.C. 60871-1, 1997

test date: March 09 to April 11, 2000

no. of pages: 32 no. of pages annexed: 8

issue date: April 12, 2000

prepared: TEST - D. Pirola M. Ascade

approved: TEST - E. Bertani

CESI

[China GB]


No. L0949

国家电力电容器质量监督检验中心

National Power Capacitor Quality Supervision and Test Center

检 验 报 告

TEST REPORT

报告编号（2007）049

Product 产品名称: TAF-T1325665S1OR 高电压并联电容器

Applicant 受检单位: SAMWHA CAPACITOR CO., LTD

Test Type 检验类别: 委 托 试 验

中 国 西 安 二00七年八月十三日

XI' AN CHINA

[Germany FGH]


FGH Engineering & Test GmbH

Test Certificate

No. H 07010

Manufacturer: Samwha Capacitor, Ltd. 124, Buk-Ri, Namsa-Myun, Yongin-Si, Kyunggi-Do, Korea

Customer: Samwha Capacitor, Ltd. 124, Buk-Ri, Namsa-Myun, Yongin-Si, Kyunggi-Do, Korea

Test Specification: IEC 60871-1 (2005-07) Ed. 3.0 / IEC 60871-4 (1996-09) Ed. 1.0

Test Performed: Capacitor A: Routine tests; Capacitors B: Disconnecting test on fuses

Test Results: All tests passed successfully.

Mannheim, 5 February, 2007

FGH Engineering & Test GmbH is a laboratory of the CESI Group

[ISO 9001]


CERTIFICATE OF QUALITY SYSTEM

Certificate No. : KRQ - 0001

Company Name : SAMWHA ELECTRIC CO., LTD.

#82, Bokdae-Dong, Heungduk-Gu, Cheongju-si, Chungbuk, Korea

Certification Scope: Design, development, production and servicing of Aluminium Electrolytic Capacitors and Film Capacitors

Quality System Standard : KS A 9001 : 1998 / ISO 9001 : 1994

This is to certify that the Quality Management System of this company has been found to conform to the above Quality System Standard by Korea Institute of Industrial Technology Evaluation & Planning(ITEP)

Certificate Reissue : 08th May, 2000

Certificate Expiry : 25th April, 2003

(Registration on 21st February, 1994)

Director General

Korea Institute of Industrial Technology Evaluation & Planning(ITEP)

KAB

[ISO 14001]


CERTIFICATE OF REGISTRATION ENVIRONMENTAL MANAGEMENT SYSTEM

Certificate No. : KRE - 0014

Company Name : SAMWHA ELECTRIC CO., LTD.

#82, Bokdae-dong, Heungduk-gu, Cheongju-si, Chungbuk, Korea

Certification Scope: Environmental management system for production of ALUMINIUM ELECTROLYTIC CAPACITORS, FILM CAPACITORS, CONDUCTING POLYMER ALUMINIUM CAPACITORS

Environmental System Standard : KS A 14001 : 1996 / ISO 14001 : 1996

This is to certify that the Environmental Management System of this company has been found to conform to the above Environmental System Standard by Korea Testing Laboratory(KTL)

Certificate Reissue : 08 December, 2001

Certificate Expiry : 08 December, 2004

(Registration on 09 December, 1998)

Director General

Korea Testing Laboratory (KTL)

[Green Partner]


Certificate of Green Partner

Presented To

SAMWHA ELECTRONICS CO.,LTD.

This is to certify that you have successfully established an environmental management system that has met the requirements of the Sony Green Partner Program

Term of Validity : May 1st, 2003 ~ April 30th, 2005

Issued on : May 9th, 2003

Approved and issued by : Procurement Global Head Office, Sony Corporation

Shigeki Nomoto

Jun Jae – Chul

Sony Electronics of Korea, President

SONY

[TUV]


TÜV CERT TÜV

CERTIFICATE

The TÜV CERT Certification Body of TÜV Anlagentechnik GmbH

certifies in accordance with TÜV CERT procedures that

SAMWHA ELECTRONICS CO., LTD.

Head Office & Plant: 211-1 Jangji-ri, Dongtan-myun, Hwasung-shi, Gyunggi-do, 445-812, Republic of Korea

Yongin Plant: 124-2 Buk-ri, Namsa-myun, Yongin-shi, Gyunggi-do, 449-184 Republic of Korea

has established and applies a quality management system for

Manufacturing and Sales of Ferrite Cores and Coils for Automotive Parts - with product design and development -

The audit was conducted as per the "Certification Guideline of the Automotive Industry for ISO/TS 16949:2002, 1st edition".

Proof has been furnished through an audit, Report No. 038409 that the requirements according to ISO/TS 16949:2002 have been fulfilled.

The certificate is valid until 2006-11-13

Certificate Registration No. 01 111 038409

IATF Certificate No. 0015648

Strengths

- **Reliable Quality in the field of Transmission & Distribution**
  : We optimize our processes in order to enhance product quality and increase customer satisfaction (since 1956)
- **Operate Reliability Testing Lab by IEC, IEEE etc**
- **Successful Type Test Report Received from CESI(Italy), FGH(Germany)**
- **Constant Innovation in Techniques becomes Market Leader**
- **Provide Perfect System Engineering Service to end users**
- **Competitive Power**
  (Reliable Quality, Competitive Cost, Quick Delivery, Excellent Service)

THANK YOU