



## SOLID STATE SYSTEMS PRIVATE LTD

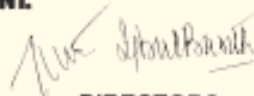
### QUALITY POLICY

WE AT SOLID STATE SYSTEMS PVT. LTD., COMMIT OURSELVES TO MANUFACTURING PLASTIC FILM CAPACITORS AND ALLIED PRODUCTS TO MEET NATIONAL AND INTERNATIONAL QUALITY STANDARDS AND FULFILL CUSTOMER REQUIREMENTS TO THEIR SATISFACTION.

WE WILL COLLECTIVELY MAKE EVERY EFFORT TO ENSURE CONTINUAL QUALITY IMPROVEMENT.

### QUALITY OBJECTIVES

- MAINTAIN CONSISTENCY IN PROCESS QUALITY
- IMPROVE PRODUCTIVITY, REDUCE REJECTION LEVELS AND WASTAGE
- DELIVER GOODS TO THE CUSTOMER IN TIME
- ENSURE CUSTOMER SATISFACTION THROUGH CONTINUAL IMPROVEMENT.



DATE : 1-12-2001

DIRECTORS

UNDERWRITERS LABORATORIES INC.  
CERTIFICATE OF REGISTRATION

ISO 9001

## Solid State Systems Private Limited

Rahath Bagh, Old Madras Road  
Bangalore - 560 093  
India

Underwriters Laboratories Inc. (U.L.) issues this certificate to the Firm named above, after assessing the Firm's quality system and finding it in compliance with:

### ISO 9001:2000

EN ISO 9001:2000, BS EN ISO 9001:2000, ANSI/ASQ Q9001:2000

for the following scope of registration:

3829 (180) : Electrical Industrial Apparatus, Not Elsewhere Classified

The manufacture of metallized polypropylene film capacitors for the electrical appliance industry.

Further clarifications regarding the scope of this certificate and the applicability of ISO 9001:2000 requirements may be obtained by consulting the organization.

This quality system registration is included in U.L.'s Directory of Registered Firms and applies to the provision of goods and/or services as specified in the scope of registration from the address(es) shown above. By issuance of this certificate the firm represents that it will maintain its registration in accordance with the applicable requirements. This certificate is not transferrable and remains the property of Underwriters Laboratories Inc. ®.

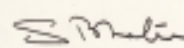
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Joe Strala  
Executive Vice President and  
Chief Operating Officer - International



## The Company

**SYSCAP**



Established in 1972, Solid State Systems (P) Ltd., is today a leading manufacturer of Plastic Film Capacitors conforming to international quality standards. With a fully equipped and automated plant in Bangalore, India, Solid State Systems (P) Ltd., has the infrastructure and quality systems to produce world class capacitors.

With an ISO 9001:2000 certified Quality System, UL Safety Approval and a company wide focus on quality, Solid State Systems has earned recognition from the most demanding customer.

In India, Solid State Systems markets a range of capacitors through a nation-wide network of agents and dealers. In addition, Solid State Systems exports a sizeable part of its production to discerning buyers/users across the world.

Solid State systems can also execute small lot orders due to its flexible manufacturing systems and can make capacitors to customer-specific requirements.

Solid State Systems has a large product range which includes electrolytic capacitors and power factor correction capacitors.

A group company - Systech Capacitors Private Limited manufactures a range of High Voltage Capacitors for Induction Melting, Railway Traction, R&D Applications, Microwave Ovens, CT Scans, X - Ray Equipment and Lasers.

Solid State Systems is committed to continuous process and quality improvement and aims to become a low-cost, high quality source of capacitors for the global and domestic appliance industry.

## The Product

Metallised Polypropylene AC Capacitors find application in Single Phase Motors, Power generation-Sets, Water lifting Mono block Pumps, Air conditioners, Washing Machines, Luminaries and Electric fans.

## The Process

## SYSCAP

Syscap capacitors are manufactured using superior quality Metallised Polypropylene (MPP) film on state-of-the-art winding machines. The MPP film has an alloy of Zn & Al vapour deposited on one side with a free margin on one of the edges. The film varies in thickness in the range of 5 to 10 Microns depending on the application voltage and operating conditions.

The capacitor elements are wound on High Precision Automatic Winding Machines in controlled conditions of temperature and humidity. The wound elements are then sprayed on both ends with a metal (Zn) to make an electrical contact with the electrodes. This serves as a connection for the two terminations. The sprayed elements with connecting leads are assembled into a metal or plastic container and encapsulated with a polyurethane resin.

All the capacitors are subjected to 100% electrical testing for all routine tests viz.,

### Visual

- Finishing and Marking

### Mechanical

- Dimensions

### Electrical

- Capacitance
- Tan delta
- High voltage electrical withstand test between terminals and container
- Insulation resistance between terminals and container

SYSCAP CAPACITORS DO NOT CONTAIN ANY ENVIRONMENTALLY HAZARDOUS MATERIALS.

## The Quality Assurance System

A quality assurance system employing statistical tools is implemented at three stages during the manufacturing process to ensure control & to continuously monitor the quality of the capacitors.

Data is collected at the SPC gateways which is used to generate reports on the control features of the manufacturing process using "Statistical Process Control" software.

Type Tests are continually being carried out in the In-house test facility as per International standards & also as per customer specifications & requests.

Quality is monitored on a continual basis to ensure production of highly reliable capacitors.

## Quality Checks

Quality Checks are carried out at the following stages :-

- Raw Material Stage
- Work in Process (Manufacturing Activity)
- Finished goods

Capacitors are tested 100 % at semi-finished and finished stages to ensure complete conformance to critical parameters.

Process conformance is ensured by continuous monitoring of key equipment & process parameters as well as checks on In-process components.

Apart from the above routine tests, regular type tests are conducted to ensure that the capacitors meet performance, life and safety requirements.

# General Technical Specifications SYSCAP

Rated capacitance	: 1 $\mu$ F TO 100 $\mu$ F
Tolerance on capacitance	: $\pm$ 5%, $\pm$ 10%, $\pm$ 20% (Other values of capacitance tolerance can be provided on request)
Dissipation factor (Tan delta)	: $\leq$ 0.1% @100Hz
Rated Voltage (Un)	: 250 V; 300 V; 350 V; 370 V; 400 V; 420 V; 440 V; 450 V; 500 V
Rated Frequency	: 50 / 60 Hz.
Maximum operating temp.	: 85°C
Can material	: Aluminium;Nylon; PBT; Polypropylene
Dielectric	: Polypropylene (Self Healing –SH)
Termination	: Single fast-on;Double fast-on;Wire;Cable
Test voltage between terminals	: 1.75 x U <sub>r</sub> (Rated) for 60 sec.
Test voltage between terminal and case	: 2 KV AC for 60 sec.
Ref. Standards	: IEC:EN 60252 (Motor Run Capacitor), UL 810 IEC:EN 1048 (Luminaire Capacitors) IS : 2993 IS : 1709 IS : 1569.

## Quality Policy

**SYSCAP**

We at Solid state systems Pvt. Ltd., commit ourselves to manufacturing plastic film capacitors and allied products to meet national and international quality standards and fulfill customer requirements to their satisfaction.

We will collectively make every effort to ensure continual quality improvement.

## Quality Objectives

- Maintain consistency in process quality
- Improve productivity, reduce rejection levels and wastage
- Deliver goods to the customer in time
- Ensure customer satisfaction through continual improvement.

## The Certification

The ISO 9001:2000 quality management system certified by Underwriters Laboratory USA has been implemented in Solid state systems P Ltd. since 1995

Product approval has been obtained from Underwriters Laboratory USA for the B-200, B-200/D, P-100 & PR-100 series of capacitors.

We are approved for "Direct to line" vendor status from many of our OEM customers.