VIZ Technologies Product Catalogue 2018

Metallised Film Capacitors
AC Motor Run & Inverter Application

Suitable for Industrial, UPS, Inverter, Agri and Motor Run Applications

www.viztechnologies.biz

Viz Technologies…
The Company

Viz is an international leading ISO 9001:2015 certified manufacturer of power factor correction, motor run, motor start and power electronic capacitors in India. We are constantly working with our customers with the goal to offer them innovative engineering solutions, reliable service and high quality.

Viz is also an OEM manufacturer, as we brand label capacitors for several of our partners, including leading multi-national companies in various countries - yet another testament to our outstanding quality.

Viz focuses on technologically driven applications, such as power quality, industrial, renewable energy, consumer electronics, automotive and power electronics.

Viz produces capacitors for various applications such as fans, motors, air conditioners, washing machines, refrigerators, power electronics, power factor correction, etc. The ratings range from 1 uF to 256 uF for motor run and power electronic application.

Viz has 2 state-of-art manufacturing facilities, both located in Hyderabad, equipped with the latest and best available world class machines and testing equipment. Both the plants are managed and run by highly experienced, qualified, dedicated and motivated teams having combined experience of over 100 years in the field of capacitors. Viz has complete R&D expertise for development of new products, which are type tested and validated at Viz's fully equipped in house laboratory.

Viz uses the best available raw materials, which are validated through a detailed and painstaking process. Raw material received from approved vendors is thoroughly checked during the inward quality inspection to ensure all quality parameters are met. Also, 100% of Viz capacitors are checked several times during the manufacturing process to ensure all specifications are met and our customers receive only world-class quality capacitors that they have become accustomed to Viz's quality has also meant a wider global reach, to customers in Europe, Middle East, CIS and Southeast Asia.

AC Film Capacitors for Motor Run Applications

Viz motor run capacitors are used in conjunction with single-phase asynchronous motors on single-phase mains supplies. The capacitor is permanently connected to the auxiliary winding, allowing the motor to start and helping to keep the motor running constantly and smoothly with highest efficiency. This results in increased torque during work, improved power factor and low noise. Such Motor run capacitors are designed for 50 or 60 Hz systems. For higher frequencies – as well as in applications where higher frequencies are present – consult VIZ to assure correct selection of the capacitor.

Applications

- Asynchronous motors
- Refrigerators, freezers
- Dishwashers
- Washing machines, tumble dryers
- Air conditioning
- Compressors, pumps and submersible pumps
- Heat pumps
- Garage door openers
- Tube motors, awning drives

Benefits

- Compact and economical design
- Various terminal and mounting options
- Self-extinguishing plastic material
- Self-healing properties
- S2/S3(P2) safety to IEC 60252-1 & IS 2993 versions
- Fault- current-proof versions
- up to 10000 A according UL 810

Features

- Voltage: 250 … 630 V
- Capacitance: 1 … 120 mF
- Ambient temperature: up to +85 °C
- Very low losses
- Innovative film technology
- High insulation resistance
- Low dissipation factor
- Maintenance-free
- RoHS compliant
- IEC 60252-1 compliant
- IS 2993
- CE Certified
- Customized versions upon request




AC Motor Run Capacitors for Motors, Fan & Lighting Applications

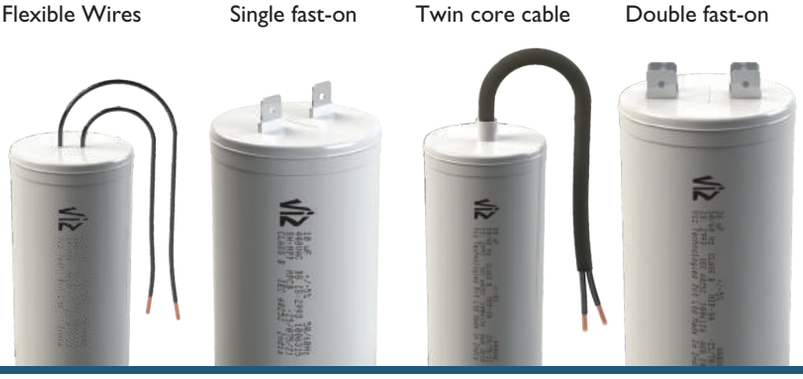
PP Can, Single Capacitance, SO (PO)

Electrical ratings		
Rated voltage	VAC	250, 400, 420, 470, 480 V AC
Rated capacitance	µF	1 … 80 µF
Rated frequency	Hz	50/ 60 Hz
Capacitance tolerance	%	±5
Max. permissible voltage V_{max}	V	1.1* V_R
Max. permissible current I_{max}	A	1.3 * I_R
Dissipation factor tan (20 °C, 120 Hz)		$\leqslant$ 1.0 *10^{-3}
Safety		
Safety class		S0(P0) to IEC 60252-1
Life expectancy to IEC 60252		250, 400, 420 V AC : 10000 h (class B)
		470, 480 V AC : 3000 h (class C)
Fire retardancy		As per IEC 60252-1
		UL grade material and IEC 60335-1 compliance material on request
Climatic parameter to IEC 60068-1		
Temperature limit Tmin/ Tmax	°C	–25/ +85°C
Test duration (damp heat test)	Days	21
Reference standards		IEC 60252-1 2001-02,
		IS 2993 : 1998; IS 1709; IS 1569
		UL 810,
Container		Plastic can material as per IEC 60252-1, others on request
Dimensions		Ø 25 … 65 mm
		H: 45 … 125 mm

Others on Request

Standard terminal options

Flexible Wires | Single fast-on | Twin core cable | Double fast-on



AC Motor Run Segmented Film Capacitors for Motors

PP Can, Single Capacitance, S3 (P2)

Electrical ratings		
Rated voltage	VAC	400, 450 V AC
Rated capacitance	µF	4 … 60 µF
Rated frequency	Hz	50/ 60 Hz
Capacitance tolerance	%	± 5
Max. permissible voltage V_{max}	V	1.1* V_R
Max. permissible current I_{max}	A	1.3 * I_R
Dissipation factor tan (20 °C, 120 Hz)		$\leqslant$ 1.0 *10^{-3}
Safety		
Safety class		S3 (P2) to IEC 60252-1
Life expectancy to IEC 60252		400 V AC : 10000 h (class B)
		470, 480 V AC: 3000 h (class C)
Fire retardancy		As per IEC 60252-1
		UL grade material and IEC 60335-1 compliance material on request
Climatic parameter to IEC 60068-1		
Temperature limit Tmin/ Tmax	°C	–25/ +85°C
Test duration (damp heat test)	Days	21
Reference standards		IEC 60252-1 2001-02
		IS 2993 : 1998
		UL 810
Container		Plastic can material as per IEC 60252-1, others on request
Dimensions		Ø 25 … 65 mm
		H: 45 … 125 mm

Others on Request

Standard terminal options

Single fast-on

Twin core cable

Double fast-on

AC Motor Run Capacitors for Washing Machines

Aluminum Can or PP Can, Single/ Dual Capacitance, S2(P2) & SO (PO)

Electrical ratings		
Rated voltage	VAC	250, 420, 440, 450 VAC
Rated capacitance	µF	4 … 60 µF; 10+1 to 60+10 µF
Rated frequency	Hz	50/ 60 Hz
Capacitance tolerance	%	± 5
Max. permissible voltage V_{max}	V	1.1* V_R
Max. permissible current I_{max}	A	1.3 * I_R
Dissipation factor tan (20 °C, 120 Hz)		$\leqslant$ 1.0 *10^{-3}
Safety		
Safety class		S2 (P2) to IEC 60252-1in Aluminum Can S0 (P0) to IEC 60252-1 in Plastic Can
Life expectancy to IEC 60252		10000 h (class B)
Fire retardancy		As per IEC 60252-1 UL grade material and IEC 60335-1 compliance material on request
Climatic parameter to IEC 60068-1		
Temperature limit Tmin/ Tmax	°C	–25/ +85°C
Test duration (damp heat test)	Days	21
Reference standards		IEC 60252-1 2001-02 IS 2993 : 1998 UL 810
Container		Plastic can or Aluminum Can
Dimensions		Ø 30 … 50 mm H: 45 … 105 mm

Others on Request

Double fast-on | Four core cable | Double fast-on

AC Motor Run Capacitors for Air Conditioners

Aluminum Can, Single/Dual Capacitance, S2(P2)

Electrical ratings		
Rated voltage	VAC	370, 400, 420, 440, 450 V AC
Rated capacitance	µF	3 … 65 µF; 25+2 to 65+2 µF
Rated frequency	Hz	50/ 60 Hz
Capacitance tolerance	%	± 5
Max. permissible voltage V_{max}	V	1.1* V_R
Max. permissible current I_{max}	A	1.3 * I_R
Dissipation factor tan (20 °C, 120 Hz)		$\leqslant$ 1.0 *10^{-3}
Safety		
Safety class		S2 (P2) to IEC 60252-1
Life expectancy to IEC 60252		10000 h (class B)
Fire retardancy		As per IEC 60252-1
		UL grade material and IEC 60335-1 compliance material on request
Climatic parameter to IEC 60068-1		
Temperature limit Tmin/ Tmax	°C	–25/ +85°C
Test duration (damp heat test)	Days	21
Reference standards		IEC 60252-1 2001-02
		IS 2993 : 1998
		UL 810
Container		Aluminum Can
Dimensions		Ø 40 … 50 mm
		H: 70 … 130 mm

Others on Request

Single rating with fast-on

Dual rating with fast-on

AC Motor Run Capacitors for Submersible Pumps

PP Can, Single Capacitance, S0 (P0)

Electrical ratings		
Rated voltage	VAC	250, 450 VAC
Rated capacitance	µF	25 … 72 µF
Rated frequency	Hz	50/60 Hz
Capacitance tolerance	%	± 5
Max. permissible voltage V_{max}	V	1.1* V_R
Max. permissible current I_{max}	A	1.3 * I_R
Dissipation factor tan (20 °C, 120 Hz)		$\leqslant$ 1.0 *10^{-3}
Safety		
Safety class		S0 (P0) to IEC 60252-1
Life expectancy to IEC 60252		250 V/70°C : 10000 h (class B)
		450 V/70°C : 1000 h (class D)
Fire retardancy		As per IEC 60252-1
		UL grade material and IEC 60335-1 compliance material on request
Climatic parameter to IEC 60068-1		
Temperature limit Tmin/ Tmax	°C	–25/ +85°C
Test duration	Days	21
(damp heat test)		
Reference standards		IEC 60252-1 2001-02
		IS 2993 : 1998
		UL 810
Container		PP Can
Dimensions		Ø 35 … 50 mm
		H: 95 … 120 mm

Others on Request

Flexible Wires

Twin core cable

Double fast-on

AC Motor Run Capacitors for Motor Start Applications

PP Can, Single Capacitance, S0 (P0)

Electrical ratings		
Rated voltage	VAC	275 VAC
Rated capacitance	µF	15 … 150 µF
Range		40/60 to 250/300
Rated frequency	Hz	50/60 Hz
Capacitance tolerance	%	± 5
Max. permissible voltage V_{max}	V	1.1* V_R
Max. permissible current I_{max}	A	1.3 * I_R
Dissipation factor tan (20 °C, 120 Hz)		$\leqslant$ 1.0 *10^{-3}
Safety		
Safety class		S0 (P0) to IEC 60252-1
Life expectancy to IEC 60252		Intermitent Application (for motor start only)
Fire retardancy		As per IEC 60252-1 UL grade material and IEC 60335-1 compliance material on request
Climatic parameter to IEC 60068-1		
Temperature limit Tmin/ Tmax	°C	–25/ +85°C
Test duration (damp heat test)	Days	21
Reference standards		IEC 60252-1 2001-02 IS 2993 : 1998 UL 810
Container		PP Can
Dimensions		Ø 35 … 50 mm H: 71 … 120 mm

Others on Request

Flexible Wires Twin core cable Double fast-on

Complete (P10)

AC Film Capacitors for Inverters in UPS & Air Conditioning Systems

Applications

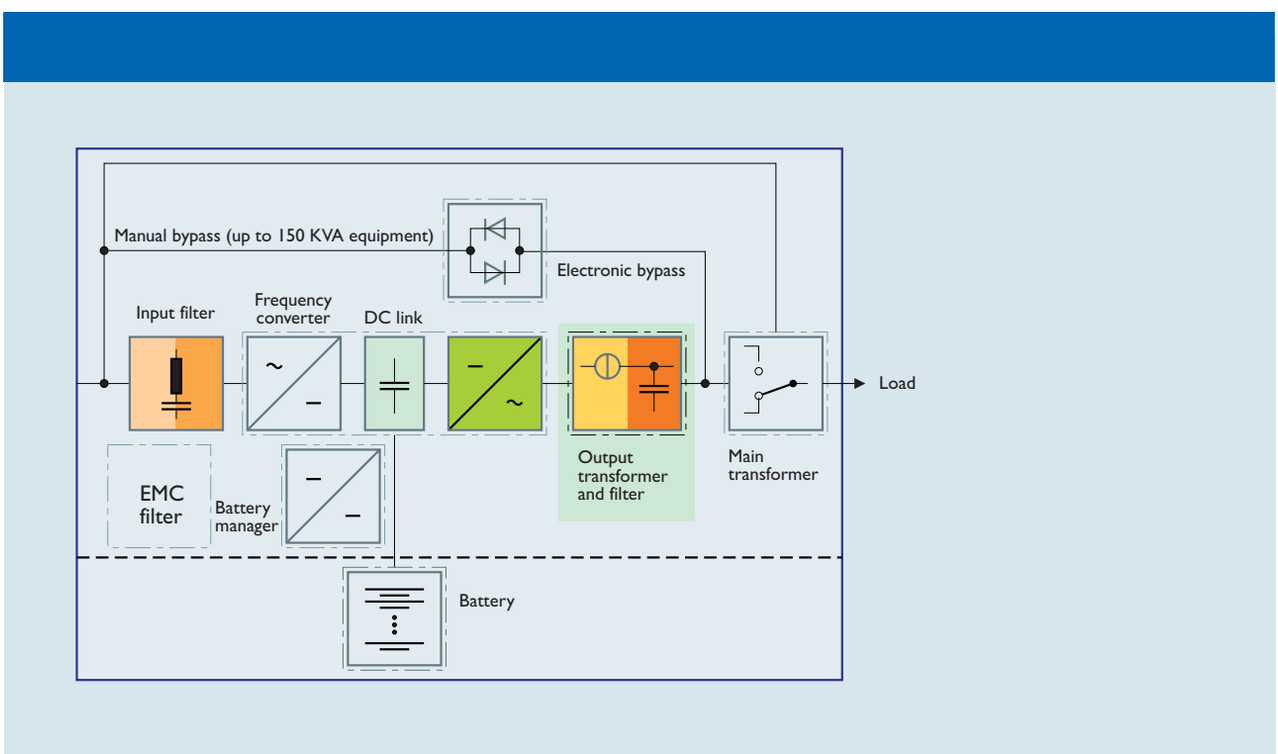
- Output filter capacitors in UPS systems
- DC link capacitors

Benefits

- Compact and economical design
- Various terminal and mounting options
- Self-extinguishing plastic material
- Self-healing properties
- S2/S3 safety to IEC 60252-1 versions
- Fault-current-proof versions up to 10 000 A according UL 810
- Low Space Consumption

Features

- Voltage: 200 … 500 V
- Capacitance: 1 … 80 mF
- Ambient temperature: up to +85 °C
- Very low losses
- Innovative film technology
- High insulation resistance
- Low dissipation factor
- Maintenance-free
- RoHS compliant
- IEC 61071
- Customized versions upon request



AC Film Capacitors for Inverters in UPS & Air Conditioning Systems

PP or Aluminium Can, Single Capacitance, S0 (P0), S2 (P2), S3 (P2)

Electrical ratings		
Rated voltage	VDC/VAC	350 VDC; 250, 350, 450 VAC
Rated capacitance	µF	1 to 80 µF (Others on request)
Rated frequency	Hz	50/60 Hz
Capacitance tolerance	%	± 5 %
Max. permissible voltage V_{max}	V	1.1* V_R
Max. permissible current I_{max}	A	1.3 * I_R
Dissipation factor tan (20 °C, 120 Hz)		$\leqslant$ 1.0 *10^{-3}
Safety		
Safety class		S0 (P0) S2 (P2) & S3 (P2) versions available
Fire retardancy		UL grade material and IEC 60335-1 compliance material on request
Climatic parameter to IEC 60068-1		
Temperature limit Tmin/ Tmax	°C	–25/ +85°C
Test duration (damp heat test)	Days	21
Reference standards		IEC 61071
Container		Plastic can or Aluminum Can
Dimensions		Ø 35 … 63.5 H: 54 … 133

Others on Request

Single rating with fast-on

Twin core cable

Double fast-on

S2/S3 Safety Feature

S2/S3 definition according IEC/EN 60252-1 and UL 810

To prevent can rupture under fault conditions, a S2/S3 capacitor is designed to fail in the open-circuit mode only. It is protected against fire and electrical shock hazards.

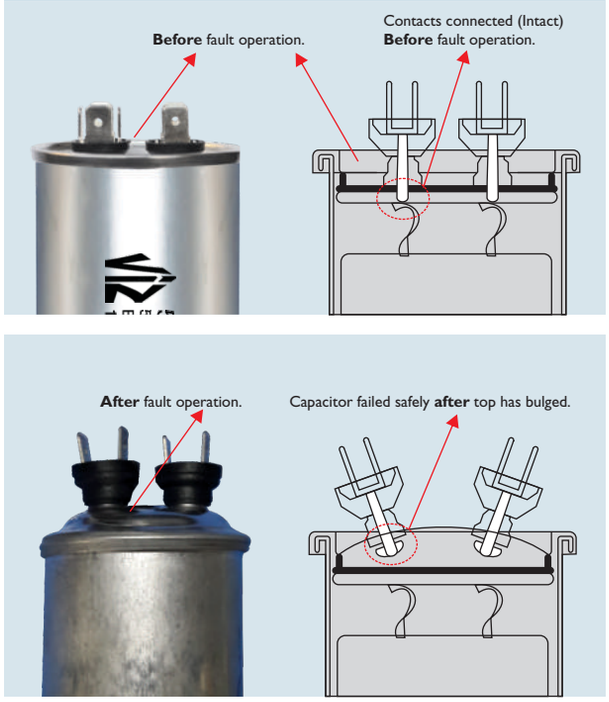
The IEC/EN 60252-1 standard applies to all S2/S3 motor run capacitors designed by VIZ.

Aluminium can with over pressure protection (S2) Function

Multiple electric breakdowns over time or due to thermal overloading or electric overloading would cause formation of gas. This results in the hot gases to rise inside the capacitor. Consequently facilitating the over pressure dis-connector to operate and disconnect the capacitor safely.

PP can capacitor with safety device (Segmented film)
Can be supplied on request

Over Pressure Dis-connector Technology



Safety classes and class of operation

Safety classes within the scope of IEC 60252-1: 2013

The IEC 60252-1 : 2013 standard applies to all P2 capacitors. All such capacitors manufactured by VIZ are designed on the basis.

In this standard, the capacitors are divided into the following safety classes.

SO class of safety protection

degree of safety protection indicating that the capacitor type has no specific failure protection
Formerly referred to as P0.

S1 class of safety protection

degree of safety protection indicating that the capacitor type may fail in the open-circuit or short-circuit mode and is protected against fire or shock hazard. Not to be placed close to objects that radiate heat.

S2 class of safety protection

degree of safety protection indicating that the capacitor type has been designed to fail in the open-circuit mode only and is protected against fire or shock hazard
Formerly referred to as P2.

S3 class of safety protection

degree of safety protection indicating that the capacitor is of segmented film construction.

Class of operation within the scope of IEC 60252-1 : 2010

The minimum probable total life for which the capacitor has been designed at rated duty, voltage, temperature and frequency

Four life classes have been foreseen

Class A – 30 000 h
Class B – 10 000 h
Class C – 3 000 h
Class D – 1 000 h

These classes of operation are intended to represent a probable failure rate not exceeding 3 % during the life of the product.

Failures considered are: short-circuits, interruptions, leakage of liquid, capacitance drifts exceeding 10 % out of the rated tolerance limits

A capacitor may have more than one class with corresponding voltages

Cautions and Warnings

- The capacitor should be operated in line with its typical approved usage.
- Handle the capacitor units carefully, as they may be charged even after disconnection.
- Observe the appropriate engineering practice.
- The capacitor terminals, connected bus bars and cables as well as any other devices connected to them must be regarded as live. The device is electrically charged.

Storage and operating conditions:

Do not use or store capacitors in a corrosive atmosphere, especially where chloride gas, sulphide gas, acids, alkalis, salts or similar substances are present. In a dusty environment, regular maintenance and cleaning, especially of the terminals, is required to avoid formation of a conductive path between phases and/or phases and ground.

Ambient temperature:

The capacitor must not be exposed to direct heat or fire. The permissible range of minimum and maximum temperatures is specified on the capacitor, i.e. 25/70/21 = Min. Permissible Temperature: -25 °C, Max. Permissible Temperature: 70 °C. 25/85/21 = Min. Permissible Temperature: -25 °C, Max. Permissible Temperature: 85 °C.

Temperature is one of the main stress factors for polypropylene type capacitors. It has a major influence on their useful operating life. It should be noted that this useful life is considerably shorter in the case of higher temperature requirements. If the maximum permissible temperature is exceeded, the safety device may become inoperative.

Installation:

Mounting orientation:
The Capacitors may be mounted in any orientation. (Horizontal or Vertical)

Fixing:

The Capacitors must be installed in a cool and well ventilated place and should not be placed close to objects that radiate heat.

Connectors:

In case of fast-on terminals, the female connectors must be of suitable design to ensure a good contact. Do not solder cables directly onto the fast-on terminals, as the terminal may overheat, causing the capacitor safety device to malfunction.

Connecting cable:

The cable used for connecting capacitors must be capable of carrying at least 1.5 times the rated current of the capacitor. It must exert no mechanical force on the capacitor terminal. Any mechanical force applied to these terminals may result in damage.

Harmonics:

Harmonics are sinusoidal voltages and currents whose frequencies are multiples of a 50 Hz or 60 Hz power supply frequency. They result from the operation of electrical loads with nonlinear voltage-current characteristics.

These loads are largely associated with modern electronic devices such as converters, electrical drives, welding machines and uninterruptible power supplies (UPS).

Harmonics may cause a higher than rated current to flow through the capacitors, which may overheat and get damaged. This may cause operational failures, bursting and fire. The maximum permissible current (including fundamental and harmonic currents) specified in the technical data of the relevant series must not be exceeded under any circumstances.

Operating voltage Vop :

These capacitors have been designed for continuous operation at the rated voltage stated on the label. This voltage may be exceeded only within the limits permitted by the applicable standards at room temperature.

Vop	Operating duration
1.1 V_R	24 h/day
1.15 V_R	6 h/day
1.2 V_R	5 min/day
1.3 V_R	1 min/day

Maintenance:

There are no serviceable or repairable parts inside the Capacitor, so please do not open it.

Quality

Viz is an ISO 9001:2008 certified manufacturer, whereby strong systems are in place for manufacture of consistent quality of capacitors. Also, we have gone through the extensive process of licensing by the Bureau of Indian Standards for our Capacitors, and have been granted the license to use the ISI mark on our range of Capacitors.

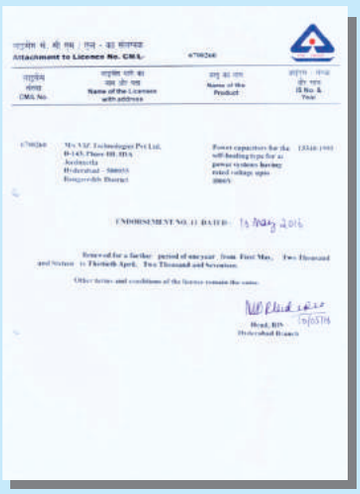
Over and above our stringent in house testing, our capacitors are periodically tested for the highest quality standards at Electrical Research and Development Association (ERDA), Vadodara, India and Central Power Research Institute (CPRI) Bengaluru

Our Capacitors are CE marked, and RoHS Compliant confirmed by TUV India.


CENTRAL POWER RESEARCH INSTITUTE

CPRI

TEST REPORT


Attachment to Licence No. CM/L-


Declaration of Conformity

VIZ TECHNOLOGIES PVT. LTD.

An ISO 9001 : 2008 COMPANY


Statement of Confirmation

TUV


Certificate of Approval

This is to certify that the Quality Management System

at

Viz Technologies Pvt.Ltd.

Plot No.D-161 & D-163, Phase - III, IDA Jeedimetla, Hyderabad - 500 055, Telangana, India

has been examined by Assessors of QMS Certification Services Pvt. Ltd. and found to be conforming to the requirements of

ISO 9001:2015

In respect of the following activities:

Design, Development, Manufacture & Supply of Electronic Plastic Film Capacitors

Current Issue Date 08/09/2018. Valid till 07/09/2021*

Original Certification 22/11/2006

Sanjay Kaushik

Managing Director

Quality Management System

QMS

IAF


Declaration of Conformity

VIZ TECHNOLOGIES PVT. LTD.

An ISO 9001 : 2008 COMPANY

www.viztechnologies.biz

Our Global Presence

Some of our esteemed Customers

L&T | ABB | Butterfly | G | KOEL GREEN

GSMU MEKATRONİK | VOLTAS LIMITED | SUZLON

VIZ TECHNOLOGIES PRIVATE LIMITED

Regd. Off.: Unit 1, D-143, Phase III, IDA-Jeedimetla, Hyderabad-500 055.
Unit 2, D-161 & D-163, Phase III, IDA-Jeedimetla, Hyderabad-500 055 INDIA
Phone: +91-40-23097015, 40207795

Email: sales@viztechnologies.biz | Website: www.viztechnologies.biz

Authorised Distributer