

Control Gear



Globe Capacitors Limited

Manufacturer of AC Motor Run & Start Capacitors

**ENERGIZING
THE FUTURE**



AC MOTOR RUN CAPACITORS

GCS SERIES

Our GCS series are soft polyurethane filled, aluminium cased capacitors with a safety mechanism incorporated as a Pressure Sensitive Interrupter (PSI). All capacitors in this series conform to "NO PCB" and RoHS & REACH compliance. They are available in four configurations:

1. **GCS-RS** (Round shaped with single section capacitor)
2. **GCS-RD** (Round shaped with dual section capacitor)
3. **GCS-OS** (Oval shaped with single section capacitor)
4. **GCS-OD** (Oval shaped with dual section capacitor)

Features:

- Low dissipation factor
- Low DPPM in field
- High safety level
- Stable capacitance
- Self-healing property
- AC rated
- Pressure-sensitive interrupter (PSI) as a safety mechanism
- Long life

Applications:

- Air conditioner
- Cooking range
- Washing machine
- Dishwasher



CONSTRUCTION OF MPP FILM CAPACITORS

High-grade specially formulated polypropylene film is imported from the best sources in the world. This is then sprayed with an extremely thin layer of vacuum deposited high purity Zinc & Aluminium on one side by condensation. A free margin is provided on one of the edges and the other edge is heavily metallized. This process known as metallization is done with our state-of-the-art machinery from Germany. The master rolls of metallized film are slit into specific widths on advanced slitters. The thicknesses of MPP film is in the range of 3 to 12 microns depending on the application voltage & other conditions.

Two rolls of MPP Film of opposite free margin are placed on a high speed, microprocessor-controlled, computerised, high precision winding machine where the capacitor section is wound into discrete capacitor elements. The winding is extremely tight so that there is no space between the layers for corona to occur. These elements are then sprayed on both ends with zinc to make connections to the extremely thin edges of the metallized electrodes. Such end sprayed elements with connecting leads are assembled into metal or plastic cases and are sealed with high insulating potting compounds like polyurethanes, epoxy, PU jelly, vegetable oils etc. No PCB is used, and all capacitors are RoHS & REACH compliant. All capacitors are subjected to 100% electrical testing for all routine tests for electrical performance & also for marking, workmanship and visual inspections.

QUALITY ASSURANCE SYSTEMS

The quality management system of Globe Capacitors is based upon quality standard operating procedures and all departments are working effectively with our procedures. All raw materials are purchased from approved vendors who must follow a thorough selection process. From procurement to dispatch, the entire process is kept under control by inspections at each stage. All outgoing supply undergoes a 100% routine test and relevant inspections, carried out by independent departments as per Standard Sampling Inspection Plan. All qualification approval tests, as per IEC/EIA/BIS standards, are carried out in-house under the TMP programme of the certification body. The reliability laboratory is fully equipped with all environmental and endurance testing equipment.

CLASS OF OPERATION

The minimum total life for which the capacitor is designed at rated voltage, temperature & frequency:

Class of operation	Life Expectancy	Test Conditions (at 125U _N continuous)
Class A	30,000 hours	6000 hours
Class B	10,000 hours	2000 hours
Class C	3000 hours	600 hours
Class D	1000 hours	200 hours

MECHANICAL CHARACTERISTICS

Robustness of terminals:

Bending strength(for wire terminals only): Half of the terminal wires are subjected to 20N load & bent at 90° to & for twice while the other half of terminals with the same load are rotated at 180° with respect to the first half twice.

Fixing strength:

Capacitors with PP or aluminium cans provided with fixing thread bolts with M8 or M12 shall be subjected to a maximum torque of 5N & 12N respectively.

Resistance to vibrations:

Capacitors shall pass the following test conditions

Frequency range	10-55Hz
Test duration	6 hours
Amplitude of displacement	0.74mm
Amplitude of acceleration	98m/s ² (i.e. 10g)

MARKING

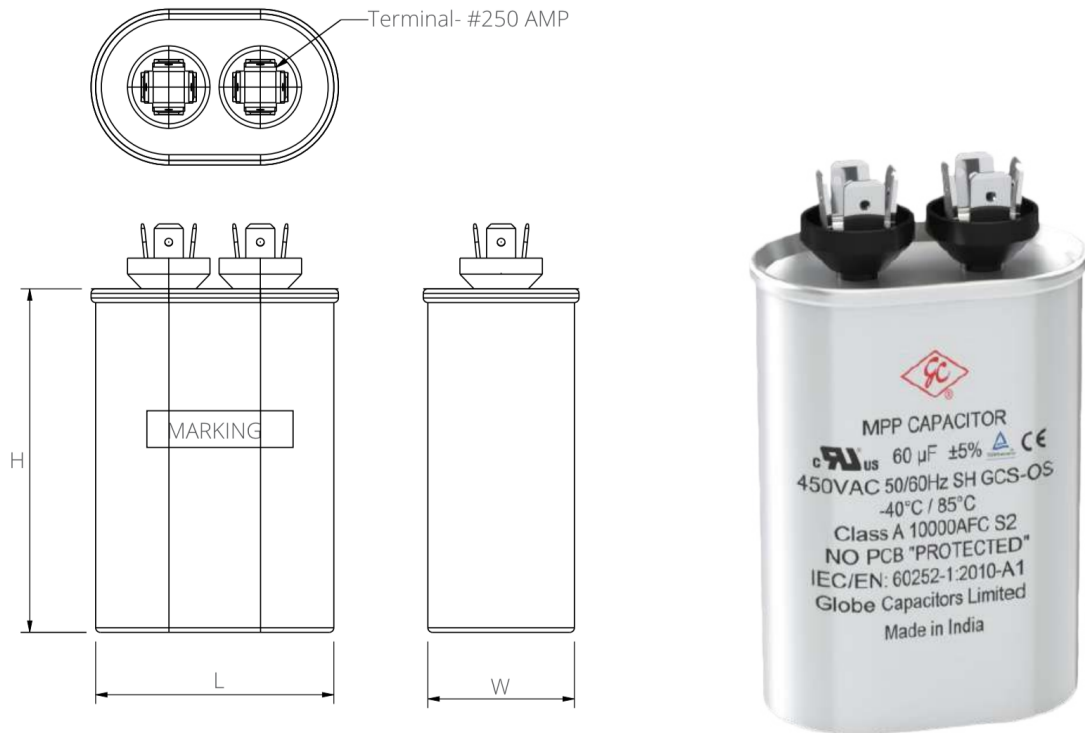
All capacitors are marked as per the requirement of standards.

1. Company logo
2. Complete name of the company
3. Capacitance Value in μF
4. Tolerance of capacitance value in %
5. Rated voltage in VAC & rated frequency in Hz
6. Climatic category (IEC coded)
7. Safety class: S0,S1,S2,S3
8. Class of operation
9. Marking for UL or CE approval or any other approval
10. Month & year of production as date code
11. Line number
12. Other part numbers as per customer request

Capacitors are printed with pad printing ink & any encounter with cleaning solvents may cause damage to the print. We use different printing inks when printing on plastic cases and metal cases. Sticker/label/laser in place of pad printing are available as an option.

GCS-OS SERIES

GCS-OS series are soft polyurethane filled, aluminium cased, oval capacitors with a single element.



MECHANICAL SPECIFICATIONS

PARAMETER	MINIMUM	MAXIMUM
Length (L)	51.5mm	71mm
Width (W)	31.5mm	45mm
Height (H)	48mm	125mm

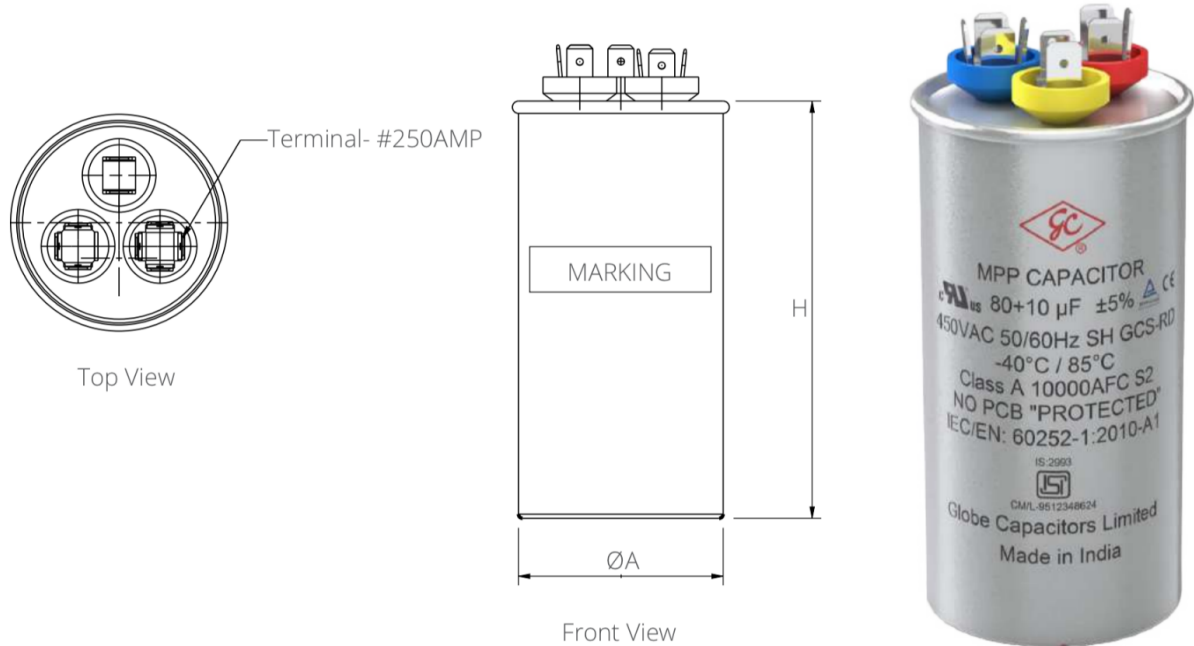
* The above range is indicative. Please contact us for a specific requirement if not mentioned above.

Terminal blades are standard in this series(4+2). Other combinations like 4+4, 3+3, 2+2, 1+1 are available on request.



GCS-RD SERIES

GCS-RD series are soft polyurethane filled, aluminium cased, round capacitors with a dual concentric element.



MECHANICAL SPECIFICATIONS

PARAMETER	MINIMUM	MAXIMUM
Diameter (ØA)	45mm	63.5mm
Height (H)	68mm	130mm

* The above range is indicative. Please contact us for a specific requirement if not mentioned above.
Terminal blades are standard in this series(4+3+2). Other combinations are available on request.



PART NUMBERING SYSTEM

NOMENCLATURE BREAKDOWN

FOR AC MOTOR RUN CAPACITORS

GCS-RS	800075	J	5	S0
Globe Capacitors Motor Run Series Identifies the basic capacitor design.	Capacitance 80.0+7.5=800075 5.0+2.5=050025 7.5+3.0=075030	Capacitor Tolerance J= ±5% K= ±10% M= ±20% U = +10 -5%	Rated Voltage 210 VAC =1 250/270 VAC =2 370 VAC =3 400 VAC =4 440/450 VAC =5	Safety Class S0 S1 S2 S3

FOR AC MOTOR START CAPACITORS

GCMS-1	1100	K	1
Globe Capacitors Motor Start Series 1 = Bakelite Body 2 = Double Aluminium Case 3 = Aluminium case with plastic sleeve 4 = Plastic Body	Capacitance Middle Value Of Range (1000-1200)	Capacitor Tolerance K= ±10% M= ±20%	Rated Voltage 110 VAC=1 125 VAC=2 165 VAC=3 220 VAC=4 250 VAC=5 330 VAC=6



TECHNICAL SPECIFICATIONS

PARAMETERS	SPECIFICATIONS			
	GCS-RS	GCS-RD	GCS-OS	GCS-OD
Capacitance range	1.0 μ F to 100 μ F	5.0+2.0 μ F to 80+10 μ F	2.0 μ F to 60.0 μ F	15.0+5.0 μ F to 50.0+5.0 μ F
Capacitance tolerance	±5% standard, other tolerance available			
Rated voltage	210 VAC to 500 VAC			
Operating temperature range	-40°C to +85°C(40/85/21standard),90°C available			
Dissipation factor	≤0.2% at Room temperature (50/60Hz)			
Rated frequency	50/60Hz			
Safety class	P2/S2			
Class of operation	Class "A" 30,000hours (IEC 60252-1:2010) +A1 AND 60000hrs (EIA-456A)			
Withstand voltage between T-C	2000 VAC /60Sec.			
Withstand Voltage between T-T	2 x Rated Voltage /60sec.			
Safety level	10,000 AFC			
Approvals	UL, CUL, TUV, IEC-60252, EIA-456, BIS(ISI)			

CONSTRUCTION

Dielectric	Electronic grade high temperature metallised polypropylene film
Element	MPP (Metallised PP) Film wound on high-speed CNC winding machines
Filling	Soft polyurethane non-polluting vegetable base
Case	High purity round/oval aluminium cans
Terminals	Tin-plated steel, (maximum 4Pins/blade for each terminal) Quick-connect (fast-on) terminals, 250AMP are standard here.
Metal top assembly	The top cover is aluminium provided with holes for terminals that are insulated by PBT UL V-0 cups.
Pressure Sensitive Interrupter	Made of PBT UL V-0 self-extinguishing plastic
Sealing	Folding of Al can and metal top by seaming.



MANUFACTURING FACILITY

