SPECIFICATION FOR APPROVAL

File No.: Q/FRK 0.GS.E.C68-C09

Product Name	Metallized polypropylene film AC motor capacitor(column, plastic case)
Product Type	C68
Product Code	C68H2456K5-B83E
Customer	
Customer Code	
Issue Date	2019-04

Xiamen Faratronic Co. Ltd.			Approved by Customer
Drafted	Checked	Approved	

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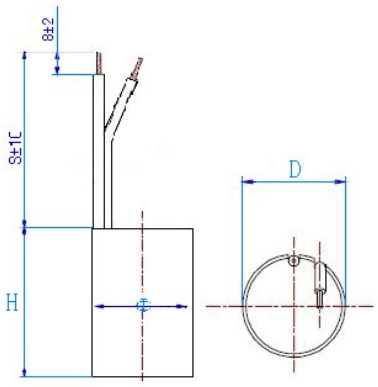
Metallized polypropylene film AC motor capacitor(column, plastic case)

■ Outline Drawing



Insulated flexible lead wires

■ Features

- Widely applied to starting and running of AC single-phase motors at 50Hz/60Hz frequency power.
- Self-healing property
- Excellent stable performance and reliability

■ Safety Approval

●	CQC	CQC	GB/T 3667.1-2016 A.C. motor capacitors 1.0μF~100μF, 500Vac Class C or 450Vac Class B, 50/60Hz, S0, SH, 40/85/21 Certificate No.: 11002056845
●	VDE	VDE	EN 60252-1:2011+A1:2013 A.C. motor capacitors 1.0μF~80μF, 450Vac/500Vac, Class C or 450Vac /470Vac Class B, 50/60Hz, S0, SH,40/85/21 Certificate No.: 40035355
●	c UL us	UL/CUL	UL 810 CSA,C22.2 No.190(construction only) max. 600Vac, 50/60Hz，max.90℃ File No.: E256238, CCN:CZDS2/8

■ Specifications

Rated Voltage		500Vac（50/60Hz）	450Vac（50/60Hz）
Class of operation		Class C	Class B
Capacitance Range		45.0μF	
Capacitance Tolerance		±10%	
Class of safety protection		S0	
Climatic Category		40/85/21	
Voltage Proof	Between Terminals	1 000Vac(2s)	900Vac(2s)
	Between Terminals and Case	3 000Vac(60s)	
Maximum permissible voltage		$1.1U_N$	
Maximum permissible current		$1.3I_N$	
Insulation Resistance(IR×C_N)		≥3 000s (20℃, 100V,1min)	
Dissipation Factor		$C_N \leqslant 10\mu F$	$\leqslant 20\times10^{-4}$（1kHz, 20℃）
		$10\mu F < C_N \leqslant 33\mu F$	$\leqslant 60\times10^{-4}$（1kHz, 20℃）
		$C_N > 33\mu F$	$\leqslant 80\times10^{-4}$（1kHz, 20℃）
Max tightening torque		4 N m(M8)~8 N m (M12)	

■ Part number system

The 18 digits part number is formed as follow:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
C	6	8															

Digit1 to 3 Series code

C68

Digit 4 to 5 AC rated voltage

H2=500V S2=450V

Digit 6 to 8 Rated capacitance value

For example : 505=50×10^5 pF= 5.0μF

Digit 9 Capacitance tolerance

J=±5%,K=±10%

Digit 10 Diameter code

Digit 10	
C68 Diameter Code	
D	Code
25	1
30	2
35	3
40	4
45	5
50	6
55	7
60	8

Digit 15					
C68 High Code					
H	Code	H	Code	H	Code
38	1	73	8	108	F
43	2	78	9	113	G
48	3	83	A	118	H
53	4	88	B	123	J
58	5	93	C		
63	6	98	D		
68	7	103	E		

Digit 11 Internal use

Digit 12 to 14 Terminals code

Digit 15 High code

Digit 16 to 18 Internal use

Table 1 Terminals code

Digit 12		Digit 13		Digit 14	
Code	Terminal form	Code	Fixed style	Code	length of lead wire
7	One AMP250# per side	5	Bottom-bolt M8	0	standard form
		6	Bottom-bolt M10	8	8inch (1inch=25.4mm)
8	Two AMP250# per side	7	Bottom-bolt M12	3	300mm
B	UL1015 insulate lead wire	8	Ring-clip in the middle of case		

■ Dimensions (mm)

500Vac(Class C)/450Vac(Class B)# Insulated flexible lead wires			
C_N （μF）	D±10%（mm）	H±10% （mm）	Part number
45.0	45	103	C68H2456K5-B83E

■ Test Method And Performance

No.	Item	Performance	Test Method (IEC 60252-1)
1	Visual examination	The condition, workmanship, marking and finish shall be satisfactory.	
2	Sealing tests	Liquids are allowed to wet the surface but not to form droplets	The capacitors shall be mounted in a position likely to reveal leakage at a temperature : 80°C±2°C Test time: 1hours
3	Terminal strength	There shall be no visible damage	Tension: 20N
4	Vibration	There shall be no visible damage Capacitance change: ≤0.5% High voltage between terminal and case: 2000Vac, 60s , There shall be no permanent breakdown or flashover	f=10Hz to 55Hz a=+/-0.35mm Test duration per axis = 10 frequency cycles (3 axes offset from each other by 90°C), 1 octave per minute, the total tiems are 135min for 3 axes.
5	Damp heat test	There shall be no visible damage Capacitance change: ≤0.5% High voltage between terminal and case: 2000Vac, 60s , There shall be no permanent breakdown or flashover	Temperature: 40°C ±2°C Humidity: 93^{+2}_{-3} %RH Duration: 21days
6	Endurance test	During test, no permanent breakdown, interruption or flashover shall occur. Liquids are allowed to wet the surface but not to form droplets Capacitance change: ≤3%	Test time: 600 hours, Class C Temperature: 85°C Test voltage: 1.25 Un Continuous
7	Self-healing test	There shall be no visible damage. The marking shall be legible. Change of capacitance: ≤0.5% Insulation resistor: IR≥100s, charge voltage 100Vdc, 60s, temperature 20°C One additional clearing in each capacitor shall be permitted during this period.	The capacitors shall be subjected to an a.c. voltage of 2.0Un, which is increased at a rate of not more than 200V/min. until five clearings have occurred since the beginning of the test or until the voltage has reach 3.5Un. The voltage shall be decreased to 0.8 times the value at which the fifth clearing occurs or 0.8 times the maximum voltage and maintained for 10s.
8	Destruction tests	a) Escaping liquid materials may wet the outer surface of the capacitor, but not fall away in drops; b) Internal live parts shall not be accessible to the standard test finger (see figure 1 of IEC 60529); c) Burning or scorching of the tissue paper shall not be evident, since this would indicate that flames or fiery particles had been emitted from the openings; d) Apply 1 600Va.c., 50/60Hz, 60s between terminal and container; there shall be no permanent breakdown or flashover.	Preparation and pre-conditions: 80°C+/-2°C, Un, 2hours. No open circuit or open circuit capacitor are permitted Test temperature: 5 pieces passed endurance test: 80°C 5 pieces passed routine test: room temperature DC conditioning: The voltage shall be raised from zero to a maximum of 10Un at a rate of 200V/min until a short circuit occurs or 10Un has been reached. AC destruction test: Test voltage: 1.3Un If the capacitor clears (becomes operative) or becomes open circuit, the voltage shall be maintained for 5min. If the capacitor is still operative after 5min then the d.c. conditioning shall be repeated. If the capacitor becomes short circuit, then the test shall be maintained for 8 hours.

■ Quality ensuring test (before shipment):

Inspection item（each batch）	Inspection level （GB 2828）	
	IL	AQL
Appearance inspection	II	1.5%
Dimensions		
Capacitance	II	0.25%
Tangent of the loss angle		
High voltage test between terminals		
High voltage test between terminal and container		
Insulation resistance		

■ Marking

Marking Introduction:

sign	explain	sign	explain
◁▷	Brand	SH	Clearing capacitor
C68	Type	S0	Class of safety protection
18μF±5%	Rated capacitance and tolerance	C	Class of operation
500VAC	Rated voltage	2014-01	Year and month
50/60Hz	Rated frequency	GB/T 3667.1	CQC Approved
40/85/21	Climate category	UL810 C22.2 NO.190	UL Approved
FARATRONIC	Company name	EN 60252-1 IEC 60252-1	VDE Approved