

Metallized Polypropylene AC Motor Capacitors

FAE Series - Aluminum Can



Overview

The FAE series capacitors are designed for motor run system, consist of metallized polypropylene film, enclosed in cylindrical Al case filled with castor oil, fast-on terminals.

Applications

Widely used in home appliance in the following applications, refrigerators, freezers, electrical compressors, washers and air conditioners.

Features

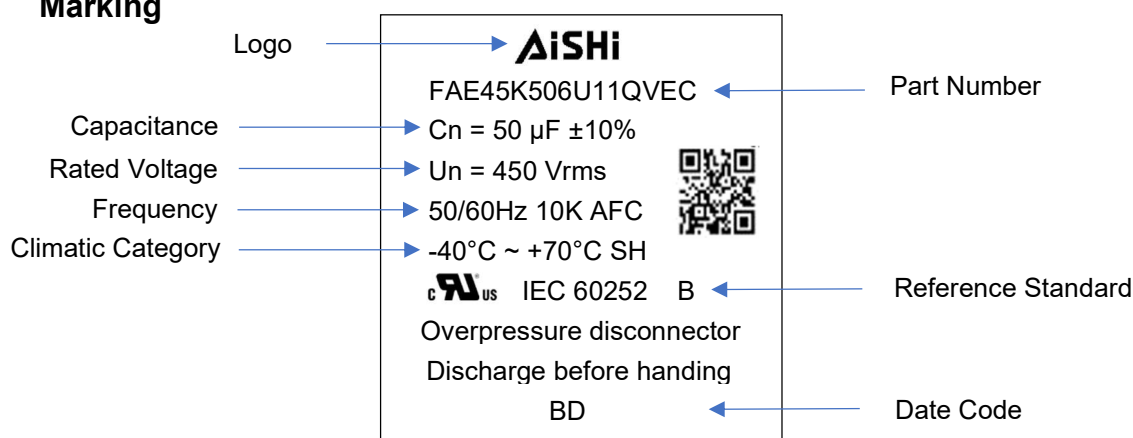
- Self-healing property
- Overpressure disconnecter device
- 10K AFC protected
- Fast-on terminals 6.3*0.8mm
- High reliability
- Motor run capacitor



Approvals

Marking	Specification	File Number
	Components	E500536

Marking



Manufacturing Date Code

Year	Code	Month	Code
2018	A	Jan	1
2019	B	Feb	2
2020	C	Mar	3
2021	D	Apr	4
2022	E	May	5
2023	F	Jun	6

Year	Code	Month	Code
2024	G	Jul	7
2025	H	Aug	8
2026	J	Sep	9
2027	K	Oct	A
2028	L	Nov	N
2029	M	Dec	D

Part Number System

F	AE	45	K	506	U11	QVE	C
Capacitor Type	Series	Voltage (VAC)	Tolerance	Capacitance (pF)	Size Code	Terminal Code	Bottom Stud Code
F = Film	AC Motor Run type, Metallized PP Film	450=45	J = ±5% K = ±10%	First two digits = significant figures. Third digit = Number of zeros.	Refer to Size Code Table	Refer to Terminal Code Table	Refer to Bottom Stud Code Table

Terminal Code

Digit One (Lead/Terminal Type)	Digit Two (Terminal Space)	Digit Three (Terminal Size)
Fast On	P	16mm
Fast On + Stud	Q	18mm
		20mm

Bottom Stud Code

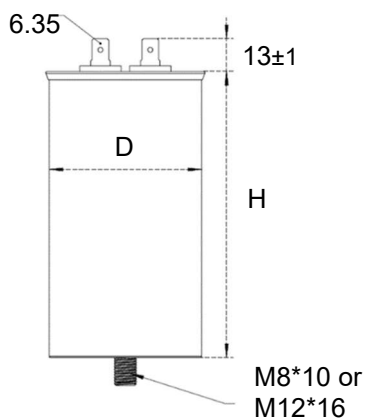
Bottom Stud	
Bottom M8*10	C
Bottom M12*16	D
No Bottom Stud	E

Size Code Table

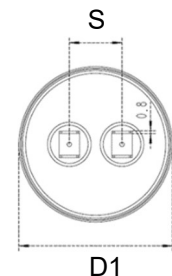
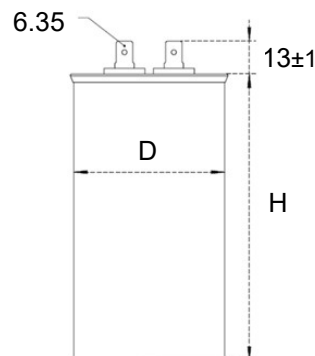
Digit One Case Diameter: D ± 1.0	Digit Two and Three Case Height: L ± 1.0
40.0mm	T
50.0mm	U
55.0mm	V
60.0mm	W
63.5mm	1

Dimension (mm)

Fast-on terminals with bottom stud



Fast-on terminals without bottom stud



Rating and Part Number

Vac	Cap Value μF	D±1	D1 ±1	H ±2	S±1	Part Number
		mm	mm	mm	mm	
450	2.0	40.0	43.0	55.0	16.0	FAE45K205T55QTEC
450	3.0	40.0	43.0	55.0	16.0	FAE45K305T55QTEC
450	4.0	40.0	43.0	55.0	16.0	FAE45K405T55QTEC
450	5.0	40.0	43.0	55.0	16.0	FAE45K505T55QTEC
450	7.5	40.0	43.0	65.0	16.0	FAE45K755T65QTEC
450	10.0	40.0	43.0	65.0	16.0	FAE45K106T65QTEC
450	12.5	40.0	43.0	75.0	16.0	FAE45K136T75QTEC
450	15.0	40.0	43.0	75.0	16.0	FAE45K156T75QTEC
450	17.5	40.0	43.0	75.0	16.0	FAE45K186T75QTEC
450	20.0	50.0	53.0	65.0	20.0	FAE45K206U65QVEC
450	25.0	50.0	53.0	75.0	20.0	FAE45K256U75QVEC
450	30.0	50.0	53.0	85.0	20.0	FAE45K306U85QVEC
450	35.0	50.0	53.0	85.0	20.0	FAE45K356U85QVEC
450	40.0	50.0	53.0	100.0	20.0	FAE45K406U10QVEC
450	45.0	50.0	53.0	110.0	20.0	FAE45K456U11QVEC
450	50.0	50.0	53.0	110.0	20.0	FAE45K506U11QVEC
450	55.0	50.0	53.0	125.0	20.0	FAE45K556U12QVEC
450	60.0	50.0	53.0	125.0	20.0	FAE45K606U12QVEC
450	65.0	55.0	58.0	110.0	20.0	FAE45K656V11QVEC
450	70.0	55.0	58.0	125.0	20.0	FAE45K706V12QVEC
450	80.0	60.0	63.0	125.0	20.0	FAE45K806W12QVEC
450	100.0	63.5	66.5	125.0	20.0	FAE45K107112QVEC


General Technical Data

Applications	AC Motor Running / Starter
Dielectric	Metallized Polypropylene Film
Reference Standard	IEC 60252; UL 810
Climatic Category	40/85/56 IEC 60068-1
Operating Temperature Range	-40°C ~ +85°C
Storage Temperature	-40°C ~ +85°C
Storage Conditions	Storage time: ≤24months from the date marked on the label package Average relative humidity per year ≤70% RH≤85% for 30 days randomly distributed throughout the year Dew is absent Temperature: -40°C ~ +85°C
Storage Life	Product that passed less than 2 years from production, No need reconfirmation
RoHS Compliance	Compliant with the restricted substance requirement of Directive 2011/65/EU
Installation	Indoor mounting, vertical or horizontal direction
Degree of Protection	IP 00

Electric Clearance and Creepage

Can Diameter	Distance terminal to terminal		Distance terminal to case	
	Creepage	Clearance	Creepage	Clearance
40	30	9.7	20	15
50	34	13.7	20	15
55	34	13.7	20	15
60	34	13.7	20	15
63.5	34	13.7	20	15

Construction

Metallized Film	OPP & Al/Zn	
Metal Sprayed	Zn	
Case	Aluminum case	
Top Cover	Steel or Aluminum with Fast-On Terminals	
Filling	Oil	
Terminal	Tinned steel	
Film Construction	Mono Structure	

Electrical Characteristics

Voltage Range	230Vac ~ 450Vac
Capacitance Range	2.0 μ F ~ 100 μ F
Capacitance Tolerance	\pm 5% or \pm 10% at +25°C
Capacitance	Measuring Frequency at 1kHz Measuring Voltage: 1 ± 0.2 V
Standard Atmospheric Conditions for Static Test	Ambient temperature 15°C to 35°C (If there is any doubt on the results, the measurements shall be made at +20 +/- 5°C) Relative humidity 45% to 75% (If there is any doubt on the results, the measurements shall be made at 60% to 70 %.) Air pressure 86 kPa to 106 kPa.
Visual examination, Marking (Non-Destructive)	Appearance: no remarkable abnormality
Voltage Between Terminals U_{TT}	2.15 x RMS rated voltage for 10s
Voltage Between Terminals and Case U_{TC}	2.0KVac 50 Hz for 10 sec at +25°C
Dielectric Dissipation Factor $Tg\Delta 0$	$\leq 2 \times 10^{-4}$
Dissipation factor	≤ 0.0010 at 100Hz
Insulation Resistance	IR x C $\geq 5,000$ s at 100VDC 1minute at +25°C
Life Expectancy	A: 30000hrs B: 10000hrs C: 3000hrs D: 1000hrs

Packaging Information

Capacitors are well protected by foams. And then are packaged in the cartons.

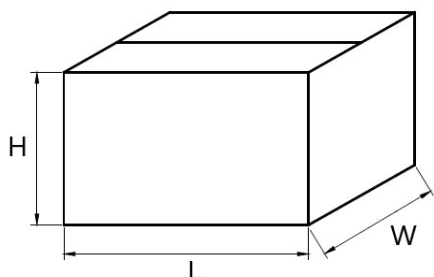


Table 1 carton dimensions

Carton No.	L (mm)	W (mm)	H (mm)
1	375	285	235
2	375	285	300
3	375	285	330
4	375	285	365
5	375	285	265

According to the capacitor’s diameter, every carton contains capacitors as per the following Table 2.

Table 2 Capacitor quantity of each carton

Capacitor Diameter (mm)	Quantity (pcs)
40	40
50	30
55	30
60	24
63.5	24

Cautions and Warnings

- Don't exceed the upper category temperature.
- For longtime storage, maximum relative humidity 80%, no dew allowed on the capacitor.
- Do not use or store capacitor in corrosive atmosphere, in the dusty environment's regular maintenance and cleaning especially of the terminals is required to avoid conductive path between terminal / or terminal and ground.
- Don't apply any mechanical stress to the capacitor terminals, and avoid any compressive, tensile or flexural stress.
- Avoid overload of the capacitors
- Do not have unlimited service life expectancy, the max service life expectancy may vary depending on the application the capacitor is used in.

Disclaimer

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