Polymer Aluminum Capacitor

FAQ

Murata Polymer Al Capacitor – FAQ

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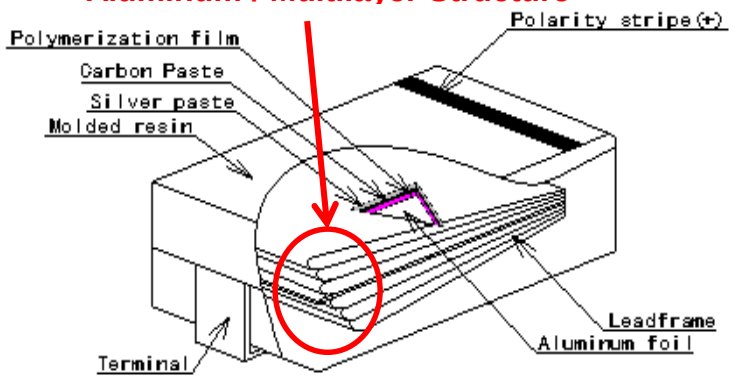
Q: What is a Murata polymer aluminum electrolytic capacitor?

A: There are two kinds of polymer aluminum capacitors: the “surface mount” type (also known as H-Chip), which uses a multilayer aluminum foil structure, and the “Can” type (also known as V-Chip), which consists of a rolled aluminum structure. Murata's H-Chip type (ECAS Series) is designed with a resin molded case structure, which utilizes multilayer aluminum foil for anode and solid conductive polymer for negative cathode.

〈Al Capacitor〉

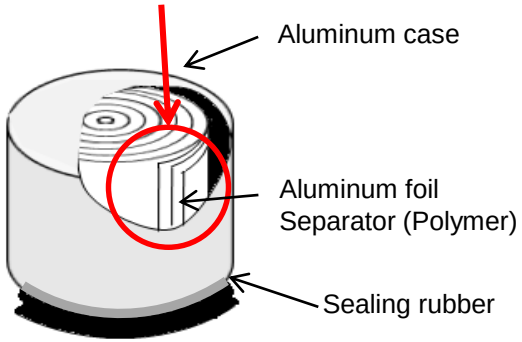
Aluminum / Multilayer Structure



Multilayer type (H-Chip)

H-Chip : Horizontal Chip

Aluminum /Rolled Structure



Can type (V-Chip)

V-Chip : Vertical Chip

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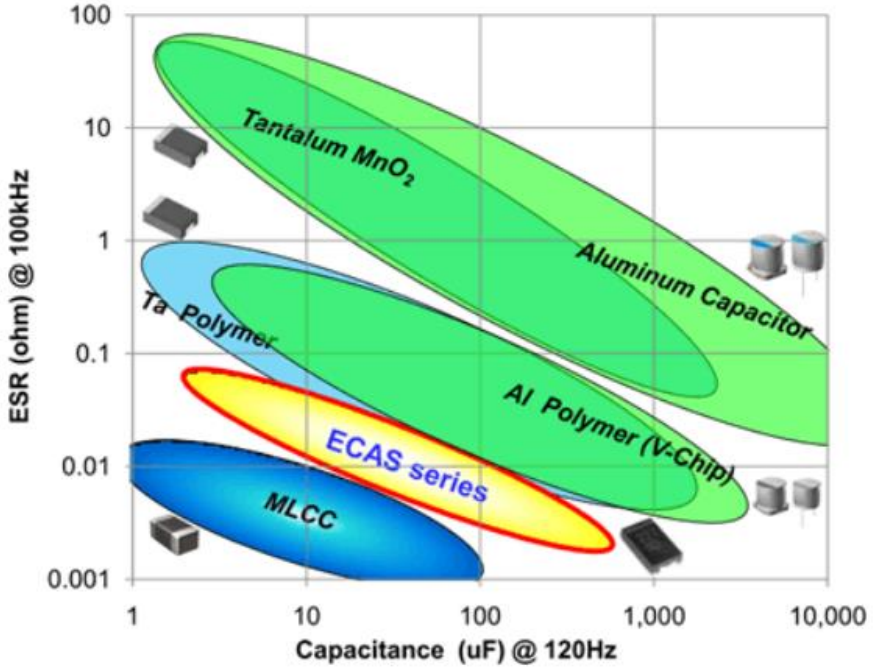
Q: What are the advantages of using polymer aluminum capacitors vs other non-ceramic technologies?

A: ESR and impedance of Murata's polymer capacitor are lower than other non-ceramic type capacitors because a multilayer structure design uses a conductive polymer for cathode; therefore, the ECAS series exhibits high performance for noise suppression, ripple absorption, and decoupling.



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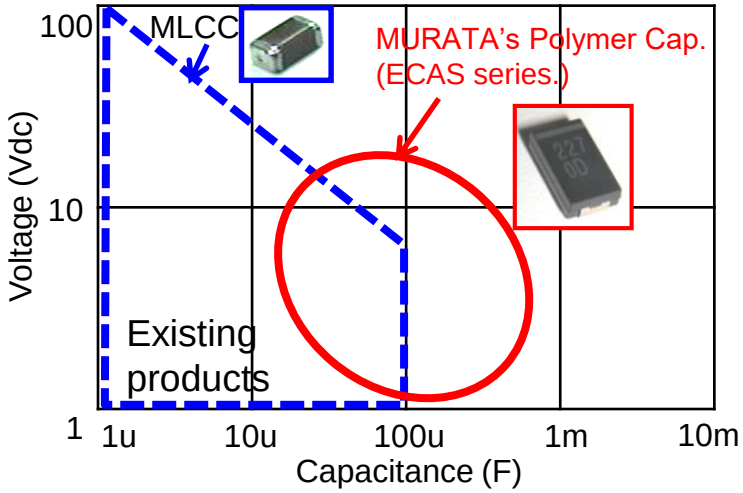
Q: What are the advantages of using polymer capacitors vs MLCC?

A: MLCCs offer the best overall solution in terms of size, volumetric capacitance, and low impedance. Polymer capacitors extend the high capacitance offering.



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Q: Do polymer electrolytic capacitors experience the same capacitance changes under applied voltage like MLCCs?

A: No. Polymer electrolytic capacitors do not exhibit "dc bias" characteristics shown by class 2 or 3 (high K) MLCC.

Q: Is voltage derating required for ECAS capacitors?

A: No. Murata's ECAS capacitors can be used without voltage derating because the electrolytic formation voltage is higher during manufacturing.

Q: What is the operating temperature range of Murata's ECAS series?

A: Operating temperature range is: -40℃ to 105℃ or 125℃

Q: What is the capacitance and voltage range of the ECAS series?

A: Capacitance range is 6.8uF to 470uF
Rated voltage range is 2VDC to 25VDC

Q: Are there special handling and storage conditions required for the ECAS series?

A: No. The ECAS series are rated at MSL 3 and are packaged in special packaging and can be stored under normal warehouse conditions.

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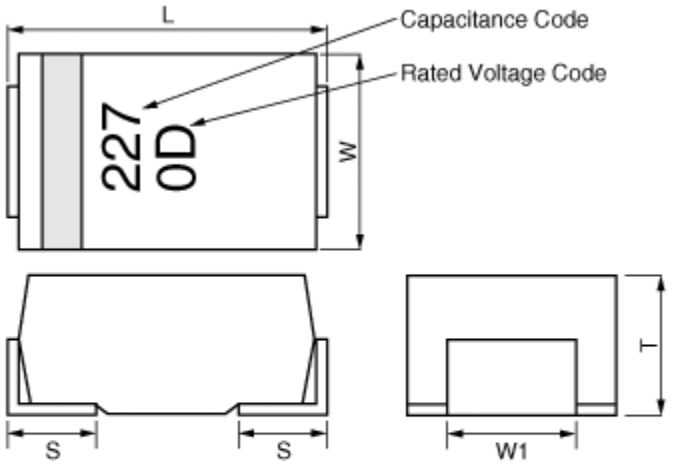
Q: What is the average reel size of the ECAS series?

A: Case Size D4 (T=1.9mm/size is 3000pcs/reel @ 330mm)
Case Size D6 (T=2.8mm/size is 2500pcs/reel @ 330mm)
Case Size D9 (T=4.2mm/size is 2000pcs/reel @ 330mm)



(in mm)

Part Number	L	W	T	W1	S
ECASD4	7.3 ±0.3	4.3 ±0.2	1.9 ±0.1	2.4 ±0.2	1.3 ±0.2
ECASD6	7.3 ±0.3	4.3 ±0.2	2.8 ±0.3	2.4 ±0.2	1.3 ±0.2
ECASD9	7.3 ±0.3	4.3 ±0.3	4.2 ±0.3	2.4 ±0.2	1.3 ±0.2

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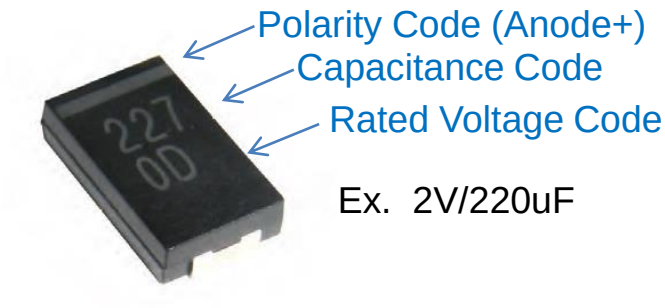
Q: Do polymer electrolytic capacitors have polarity?

A: Yes. Unlike MLCCs, polymer electrolytic capacitors have a marked polarity so proper placement on the PCB board is important.

〈 Polarity Marking 〉



Ex. 2V/220uF

Q: Can the ECAS series be used in AC circuits?

A: No, because these components have polarity.

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Q: Can the ECAS series be exposed to reflow and wave soldering environments?

A: The ECAS series can only be reflowed soldered. Please check our specifications for applicable profiles and conditions.

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Q: Will the ECAS product continue to follow Murata's 18 digit global part numbering (GPN) system?

A: Yes. The ECAS series will follow Murata's conventional 18 digit GPN system.

Part Numbering

Polymer Capacitor

(Part Number)

ECAS	D4	0D	227	M	009	K	00
❶	❷	❸	❹	❺	❻	❼	❽

❶Series

Product ID	
ECAS	Polymer Al Electrolytic Capacitor

❷Dimension (LxWxT) (mm)

Code	L	W	T
D4	7.3 ±0.3	4.3 ±0.2	1.9 ±0.1
D6	7.3 ±0.3	4.3 ±0.2	2.8 ±0.3
D9	7.3 ±0.3	4.3 ±0.3	4.2 ±0.3

❸Rated Voltage

Code	Rated Voltage
0D	DC 2V
0E	DC 2.5V
0G	DC 4V
0J	DC 6.3V
0K	DC 8V
1A	DC 10V
1B	DC 12.5V
1C	DC 16V

❹Capacitance

Expressed by three-digit numeric code.
The unit is pico-farad (pF).
The first and second figures are significant digits, and the third figure expresses the number of zeros which follow the two numbers.

Ex.)

Code	Capacitance
476	47µF
107	100µF
227	220µF
477	470µF

❺Capacitance Tolerance

Code	Capacitance Tolerance
M	±20%

❻ESR

Express by three-digit alphanumerics. The unit is milli-ohm (mΩ).
If there is a decimal point, it is expressed by the capital letter "R".

Ex.)

Code	ESR
4R5	4.5mΩ
009	9mΩ
010	10mΩ

❼Packaging

Code	Packaging
K	ø330mm Embossed Taping

❽Individual Specification Code

Expressed by two figures.

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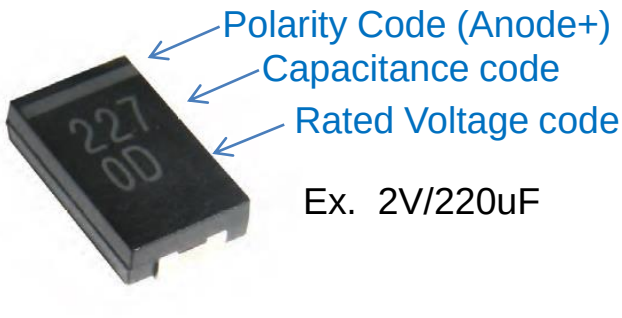
Q: Are polymer capacitors compliance product for EU RoHS and halogen-free?
A: Yes.

Q: Is the ECAS series a multi-layer device?
A: Yes. The ECAS series utilizes multilayer aluminum foil for anode and solid conductive polymer for negative cathode.

〈 Appearance 〉



〈 Cross-section 〉