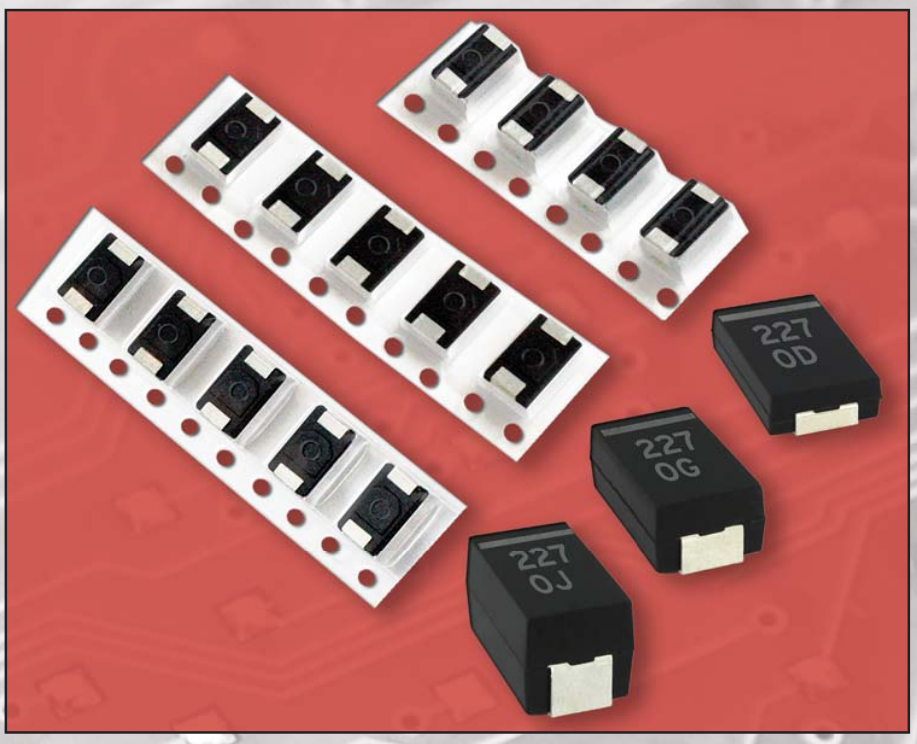
muRata
Innovator in Electronics

POLYMER
Aluminum Electrolytic Capacitors



ECAS Series

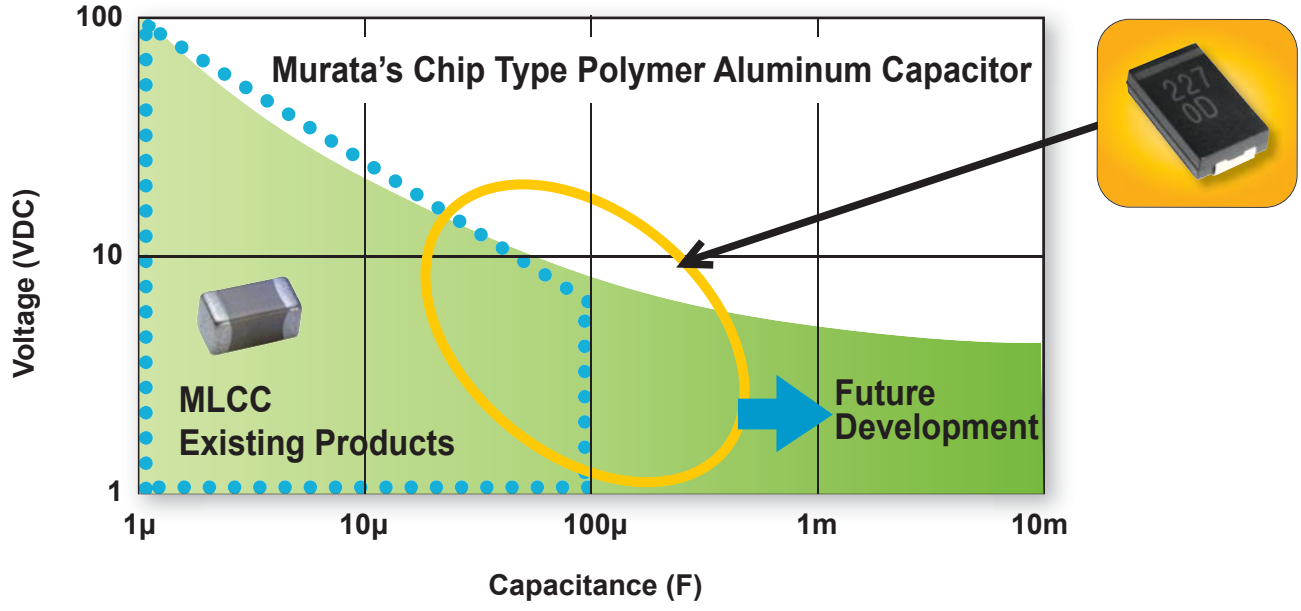
Polymer Aluminum Electrolytic Capacitors

Murata Manufacturing Co., Ltd.'s ECAS series of polymer aluminum electrolytic capacitors are ideal for low ESR, high capacitance applications in a variety of commercial and industrial markets. Utilizing innovative design and manufacturing processes, the ECAS series provides a high level of performance allowing circuit designers to achieve excellent noise suppression, ripple absorption, and output smoothing in power management applications.

Features

- Resin molded case structure utilizes multilayer aluminum foil for anode and solid conductive polymer for cathode
- High capacitance and Low ESR
- High frequency performance up to 500kHz with low impedance for excellent noise suppression
- Stable capacitance with applied voltage
- Stable capacitance with temperature
- Stable capacitance at high operating frequencies
- No voltage derating required
- Polarity bar (positive) noted on product
- Surface mount construction
- RoHS compliant
- Halogen free epoxy
- MSL 3 packaging

Capacitor Map



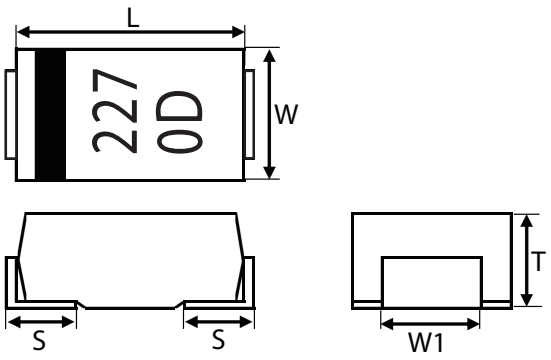
Polymer Aluminum Electrolytic Capacitors

Appearance

Capacitance Code

Rated Voltage Code
220uF/2V

External Dimensions



Case Size

(Units: mm)

Case Size	EIA Code	L	W	T	W1	S
D4	7343	7.3+/-0.3	4.3+/-0.2	1.9+/-0.1	2.4+/-0.2	1.3+/-0.2
D6	7343	7.3+/-0.3	4.3+/-0.2	2.8+/-0.3	2.4+/-0.2	1.3+/-0.2
D9	7343	7.3+/-0.3	4.3+/-0.3	4.2+/-0.3	2.4+/-0.2	1.3+/-0.2

Specifications

- Capacitance Range: 6.8 to 470µF
- Rated Voltage: 2 to 16VDC
- ESR: 6 to 70mΩ
- Operating Temperature: -40 to 105°C

Product Lineup

Capacitance Value (µF)

Voltage (VDC)	6.8	8.2	10	15	22	33	47	56	68	82	100	150	180	220	270	330	470
2		POLYMER & MLCC SOLUTIONS									D4 16	D4 9		D4 9		D4 6 / D6 7	D4 4.5 / D6 6
4									D4 20	D4 16		D4 16	D6 12	D6 10		D9 8	
6.3			D4 55		D4 45	D4 25	D4 25		D4 15		D4 15	D6 10		D9 10			
10			D4 55		D4 28	D4 25			D6 15		D9 10	D9 10					
12.5			D4 55	D4 45	D4 30	D6 25	D6 20	D9 20			D9 12			POLYMER SOLUTIONS			
16	D4 70		D4 60	D4 40	D6 30												

D4 — Case Size
6 — ESR (mΩ)

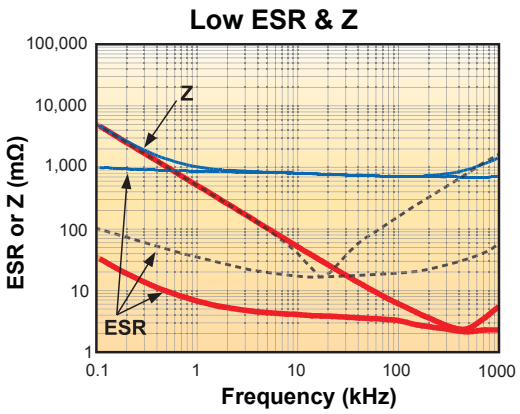
Mass Production
To Be Released in 2010

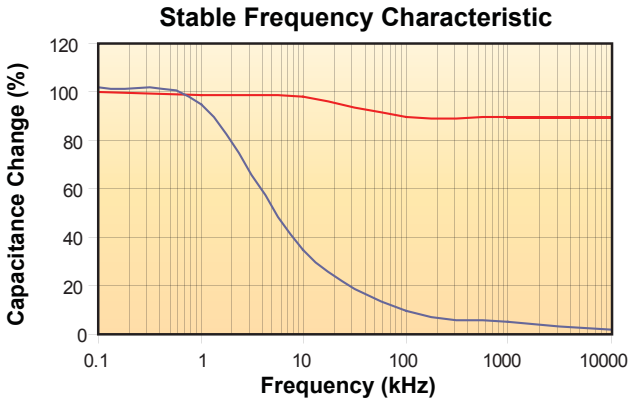
POLYMER & MLCC SOLUTIONS

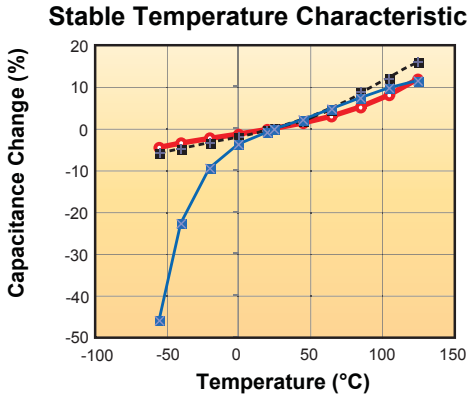
POLYMER SOLUTIONS

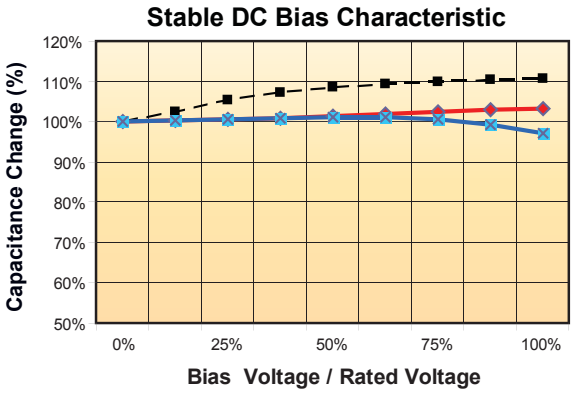
Characteristics

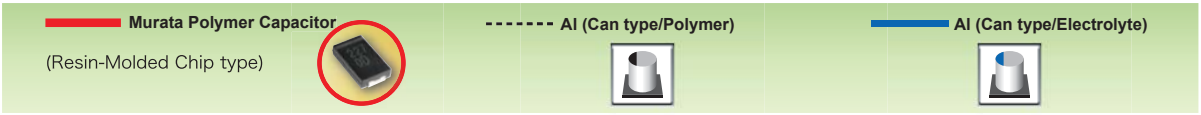
Comparison of impedance frequency and capacitance characteristics of 330µF/2V





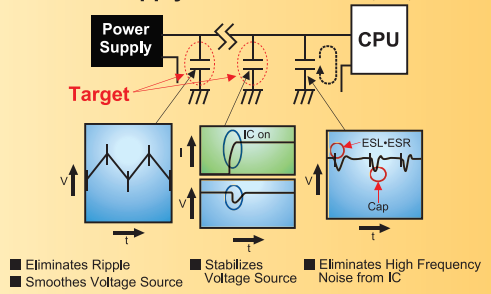






Applications

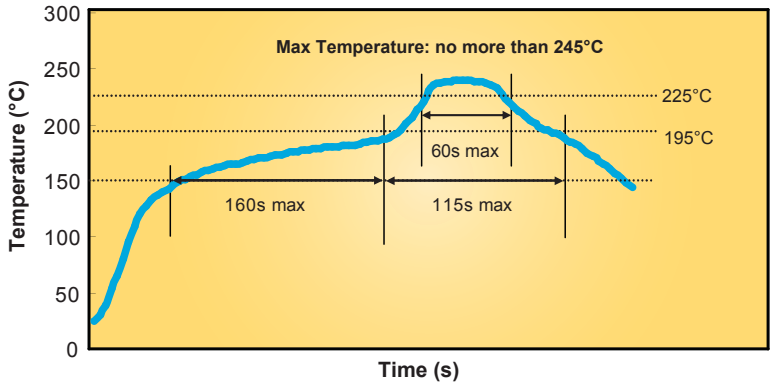
Market	Application	Circuit Application
Computer	Notebook/Netbook	**Overall Power Management:** ■ Noise Suppression ■ Ripple Absorption ■ Decoupling
	Server	
	Multi Function Printer	**Power supply line around CPU, IC, etc.**
Digital AV	Digital TV (LCD/Plasma)	
	Audio/Video	
	Game Console	
	Set Top Box	
Telecom	Router	
	Base Station	



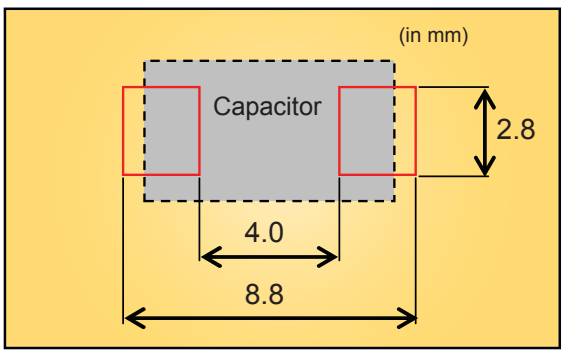
Specification Details

Item	Test Conditions	Characteristics	
Operating Temperature	-	-40 to105°C	
Rated Voltage	-	2 to 16V	
Leakage Current	Applied Voltage: Rated voltage measured after 2 minutes of application	≤ 0.04CV for 2V to 10V products ≤ 0.1CV for 12.5V to 16V products	
Capacitance Value	120Hz @ 25°C	6.8 to 470uF	
Capacitance Tolerance	120Hz @ 25°C	± 20%	
Dissipation Factor	120Hz @ 25°C	≤ 0.06	
ESR	100kHz @ 25°C	6 to 70 mΩ	
Allowable Ripple Current	Measuring Frequency: 100kHz ±10% Measuring Temperature: 20 to 105°C	Ranges from 1 to 3.5Arms; part number specific	
Surge	Test Cycle: 1,000 cycles Applied Voltage: Rated Voltage x 1.25 Test Temp: 85°C for 2V to 10V products Test Temp: 25°C for 12.5V to 16V products	Leakage Current	≤ 0.04CV for 2V to 10V products ≤ 0.1 CV for 12.5V to 16V products
		Capacitance Change	±10% of initial measured value
		Dissipation Factor	≤ 0.06
Endurance	Test Temperature: 105°C ±2°C Applied Voltage: Rated Voltage Test Time: 1,000hrs +48hrs, -0hrs	Leakage Current	≤ 0.04CV for 2V to 10V products ≤ 0.1CV for 12.5V to 16V products
		Capacitance Change	±10% of initial measured value
		Dissipation Factor	≤ 0.06
Moisture Resistance Under Load	Test Temperature: 60°C ±2°C Relative Humidity: 90 to 95% Applied Voltage: Rated Voltage Test Time: 1,000hrs +48hrs, -0hrs	Leakage Current	≤ 0.04CV for 2V to 10V products ≤ 0.1CV for 12.5V to 16V products
		Capacitance Change	-20% and +50% of initial value
		Dissipation Factor	≤ 0.12
Solderability	Solder Temperature: 235°C ±5°C Immersion Time: 5s ±0.5s	Terminal face should be covered 95% by new solder.	

Recommended Solder Reflow Profile



Land Pattern Design



Part Number Listing

Murata Part Number	Rated Voltage	Cap.	Case Size			Cap Tolerance	ESR Max.	Leakage Current	Ripple Current	Min. Packaging Quantity (Pcs)
	(VDC)	(μF) 120Hz /25℃	Code	L x W (mm)	T (mm)	%	(mΩ) 100kHz / +25℃	(CV)	100kHz / +20～105℃	
ECASD40D107M016K00	2	100	D4	7343	1.9	±20%	16	0.04CV	2.0Arms	3,000
ECASD40D157M009K00	2	150	D4	7343	1.9	±20%	9	0.04CV	3.0Arms	3,000
ECASD40D227M009K00	2	220	D4	7343	1.9	±20%	9	0.04CV	3.0Arms	3,000
ECASD60D337M007K00	2	330	D6	7343	2.8	±20%	7	0.04CV	3.5Arms	2,500
ECASD60D477M006K00	2	470	D6	7343	2.8	±20%	6	0.04CV	3.5Arms	2,500
ECASD40G686M020K00	4	68	D4	7343	1.9	±20%	20	0.04CV	1.9Arms	3,000
ECASD40G826M016K00	4	82	D4	7343	1.9	±20%	16	0.04CV	2.1Arms	3,000
ECASD40G157M016K00	4	150	D4	7343	1.9	±20%	16	0.04CV	2.1Arms	3,000
ECASD60G187M012K00	4	180	D6	7343	2.8	±20%	12	0.04CV	2.5Arms	2,500
ECASD60G227M010K00	4	220	D6	7343	2.8	±20%	10	0.04CV	3.0Arms	2,500
ECASD90G337M008K00	4	330	D9	7343	4.2	±20%	8	0.04CV	3.3Arms	2,000
ECASD40J106M055K00	6.3	10	D4	7343	1.9	±20%	55	0.04CV	1.0Arms	3,000
ECASD40J226M045K00	6.3	22	D4	7343	1.9	±20%	45	0.04CV	1.0Arms	3,000
ECASD40J336M025K00	6.3	33	D4	7343	1.9	±20%	25	0.04CV	1.8Arms	3,000
ECASD40J476M025K00	6.3	47	D4	7343	1.9	±20%	25	0.04CV	1.8Arms	3,000
ECASD40J686M015K00	6.3	68	D4	7343	1.9	±20%	15	0.04CV	2.0Arms	3,000
ECASD40J107M015K00	6.3	100	D4	7343	1.9	±20%	15	0.04CV	2.0Arms	3,000
ECASD60J157M010K00	6.3	150	D6	7343	2.8	±20%	10	0.04CV	3.0Arms	2,500
ECASD90J227M010K00	6.3	220	D9	7343	4.2	±20%	10	0.04CV	3.0Arms	2,000
ECASD41A106M055K00	10	10	D4	7343	1.9	±20%	55	0.04CV	1.0Arms	3,000
ECASD41A226M028K00	10	22	D4	7343	1.9	±20%	28	0.04CV	1.6Arms	3,000
ECASD41A336M025K00	10	33	D4	7343	1.9	±20%	25	0.04CV	1.8Arms	3,000
ECASD61A686M015K00	10	68	D6	7343	2.8	±20%	15	0.04CV	2.0Arms	2,500
ECASD91A107M010K00	10	100	D9	7343	4.2	±20%	10	0.04CV	3.0Arms	2,000
ECASD91A157M010K00	10	150	D9	7343	4.2	±20%	10	0.04CV	3.0Arms	2,000
ECASD41B106M055K00	12.5	10	D4	7343	1.9	±20%	55	0.1CV	1.0Arms	3,000
ECASD41B156M045K00	12.5	15	D4	7343	1.9	±20%	45	0.1CV	1.0Arms	3,000
ECASD41B226M030K00	12.5	22	D4	7343	1.9	±20%	30	0.1CV	1.6Arms	3,000
ECASD61B336M025K00	12.5	33	D6	7343	2.8	±20%	25	0.1CV	1.8Arms	2,500
ECASD61B476M020K00	12.5	47	D6	7343	2.8	±20%	20	0.1CV	2.0Arms	2,500
ECASD91B566M020K00	12.5	56	D9	7343	4.2	±20%	20	0.1CV	2.0Arms	2,000
ECASD91B107M012K00	12.5	100	D9	7343	4.2	±20%	12	0.1CV	2.5Arms	2,000
ECASD41C685M070K00	16	6.8	D4	7343	1.9	±20%	70	0.1CV	1.0Arms	3,000
ECASD41C106M060K00	16	10	D4	7343	1.9	±20%	60	0.1CV	1.0Arms	3,000
ECASD41C156M040K00	16	15	D4	7343	1.9	±20%	40	0.1CV	1.0Arms	3,000
ECASD61C226M030K00	16	22	D6	7343	2.8	±20%	30	0.1CV	1.6Arms	2,500

MSL 3 Packaging (moisture sensitivity level)

Part Number Breakdown

Part Numbering

ECAS	D4	0D	227	M	009	K	00
1	2	3	4	5	6	7	8

1 Series

Code	Product
ECAS	Chip Type Polymer Al Capacitor

2 Case Size (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

3 Rated 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

4 Capacitance

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

5 Capacitance Tolerance

Code	Tolerance
M	+/-20%

6 ESR

Code	ESR
4R5	4.5mΩ
009	9mΩ
010	10mΩ

7 Packaging

Code	Packaging
K	Φ330mm Plastic Taping

8 Individual Specification Code

Series Cross Reference

Manufacturer	P/N Prefix / Series	Brand	MuRata	Series Name
Showa Denko	A705	SDK-CAP	**MuRata**	**ECAS**
Rubycon	SXB, SXE, SW	PC-CON	**MuRata**	**ECAS**
NIC	NSP, NPC	–	**MuRata**	**ECAS**

For a detailed competitor cross reference please visit: www.murata-northamerica.com/polymer_al

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⚠ Note:

1. Export Control
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   ③ Undersea equipment ④ Power plant equipment
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   ⑦ Traffic signal equipment ⑧ Disaster prevention / crime prevention equipment
   ⑨ Data-processing equipment ⑩ Application of similar complexity and/or reliability requirements to the applications listed above.
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4. Please read rating and ⚠ CAUTION (for storage, operating, rating, soldering, mounting and handling) to prevent smoking and/or burning, etc.
5. Please approve our product specifications or complete the approval sheet for product specifications before ordering.
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7. No ozone depleting substances (ODS) under the Montreal Protocol are used in our manufacturing process.
8. For status of RoHS compliance of our products, please consult our website.

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