

# Type AVRF -55 °C to 105 °C

## SMT Aluminum Electrolytic Capacitors - Lowest E.S.R., 105 °C

### Low Impedance and Long-Life for Filtering, Bypassing and Power Supply Decoupling



Type AVRF Capacitors are the best and by a wide margin. With 40% to 60% lower impedance, 30% to 50% smaller case size and more than twice the life compared to low-ESR type AFC, the Type AVRF also excels at cold performance down to -55 °C. In addition, this terrific low-impedance performance, approaching low-ESR tantalum capacitors, is at a significant cost savings compared to tantalum. The vertical cylindrical cases facilitate automatic mounting and reflow soldering into the same footprint of like-rated tantalum capacitors except without the need for voltage derating.

#### Highlights

- +105 °C, Up to 5000 Hour Load Life
- Ultra-low Impedance
- Voltage Range: 6.3 Vdc to 35 Vdc

#### Specifications

- Operating Temperature:** -55 °C to +105 °C  
**Rated Voltage:** 6.3, 10, 16, 25, 35 Vdc  
**Capacitance:** 4.7 µF to 1500 µF  
**Capacitance Tolerance:** ±20% @ 120 Hz and +20 °C  
**Leakage Current:** 0.01 CV or 3 µA @ +20 °C, after two minutes (whichever is greater)



Complies with the EU Directive 2002/95/EC requirement restricting the use of Lead (Pb), Mercury (Hg), Cadmium (Cd), Hexavalent chromium (Cr(VI)), PolyBrominated Biphenyls (PBB) and PolyBrominated Diphenyl Ethers (PBDE).

#### Low Temperature Characteristics @ 120 Hz:

Rated Voltage (Vdc)		6.3	10	16	25	35
Impedance Ratio	Z(-25°C)/Z(+20°C)	2	2	2	2	2
	Z(-40°C)/Z(+20°C)	3	3	3	3	3
	Z(-55°C)/Z(+20°C)	4	4	4	3	3

#### Dissipation Factor:

6.3V	10V	16V	25V	35V
0.26	0.19	0.16	0.14	0.12

- Life Test:** 2000 h @ 105 °C, 4.0 — 6.3 mm dia.  
 5000 h @ 105 °C, 8.0 — 10.0 mm dia.  
 Δ Capacitance ±30% (10 mm Dia.: ±35%)  
 DF: ≤ 200% of limit (10 mm Dia.: ≤300%)  
 DCL: ≤ 100% of limit

- Shelf Test:** 1000 h @ 105 °C  
 Δ Capacitance ±30% (10 mm Dia.: ±35%)  
 DF: ≤ 200% of limit (10 mm Dia.: ≤300%)  
 DCL: ≤ 100% of limit

#### Part Numbering System

AVRF	106	M	16	B	12T	-F
Type	Capacitance	Capacitance Tolerance	Voltage Code	Case Code	Packaging Code	RoHS Compliant
AVRF	475 = 4.7 µF	M = ±20%	06 = 6.3 Vdc 10 = 10 Vdc 16 = 16 Vdc	25 = 25 Vdc 35 = 35 Vdc	12 = Carrier tape Width (mm) T = Tape & Reel	Compliant
	106 = 10.0 µF					
	107 = 100.0 µF					
	108 = 1000.0 µF					

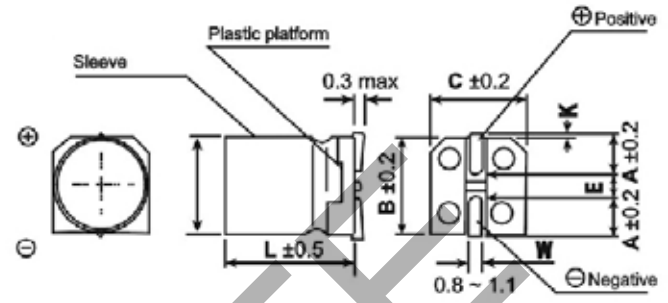
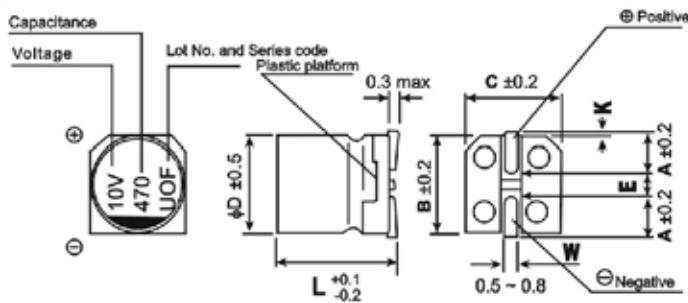
# Type AVRF -55 °C to 105 °C

## SMT Aluminum Electrolytic Capacitors - Lowest E.S.R., 105 °C

### Outline Drawing & Marking

(4.0 - 6.3 mm Dia.)

(8.0 - 10.0 mm Dia.)



### Case Dimensions

Case Code	D ± 0.5 (mm)	L (mm)	B, C (mm)	A (ref)	W (mm)	E (ref)	K (mm)
B	4.0	5.4 ± 0.2	4.3	1.8	0.65 ± 0.1	1.0	0.35 +0.15/-0.20
C	5.0	5.4 ± 0.3	5.3	2.2	0.65 ± 0.1	1.5	0.35 +0.15/-0.20
D	6.3	5.4 ± 0.2	6.6	2.6	0.65 ± 0.1	1.8	0.35 +0.15/-0.20
F	8.0	10.2 ± 0.5	8.3	3.4	0.90 ± 0.2	3.1	0.70 ± 0.20
G	10.0	10.2 ± 0.5	10.3	3.5	0.90 ± 0.2	4.6	0.70 ± 0.20

### Ratings

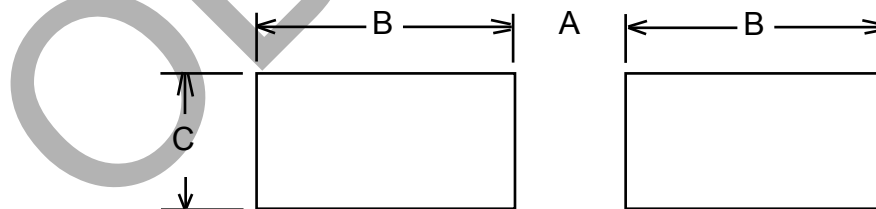
Cap. (µF)	Catalog Part Number	Max. DCL 2 min. (µA)	Max. DF @ 120Hz/20°C	Max. E.S.R. @ 100kHz/20°C (Ω)	Max. Impedance @ 100kHz/20°C (Ω)	Max. Ripple Current @ 100kHz/105°C (mA)	Case Code	Size DxL (mm)	Quantity /Reel (Ea)
<b>6.3 Vdc</b>									
22	AVRF226M06B12T-F	3.0	0.26	1.65	1.65	70	B	4x5.4	2000
47	AVRF476M06B12T-F	3.0	0.26	1.65	1.65	70	B	4x5.4	2000
100	AVRF107M06C12T-F	6.3	0.26	0.90	0.90	100	C	5x5.4	1000
220	AVRF227M06D16T-F	13.9	0.26	0.50	0.50	160	D	6.3x5.4	1000
470	AVRF477M06F24T-F	29.6	0.26	0.16	0.16	600	F	8x10.2	500
1000	AVRF108M06F24T-F	63.0	0.26	0.16	0.16	600	F	8x10.2	500
1500	AVRF158M06G24T-F	94.5	0.26	0.08	0.08	850	G	10x10.2	500
<b>10 Vdc</b>									
22	AVRF226M10B12T-F	3.0	0.19	1.65	1.65	70	B	4x5.4	2000
33	AVRF336M10B12T-F	3.3	0.19	1.65	1.65	70	B	4x5.4	2000
150	AVRF157M10D16T-F	15.0	0.19	0.50	0.50	160	D	6.3x5.4	1000
330	AVRF337M10F24T-F	33.0	0.19	0.16	0.16	600	F	8x10.2	500
470	AVRF477M10F24T-F	47.0	0.19	0.16	0.16	600	F	8x10.2	500
1000	AVRF108M10G24T-F	100.0	0.19	0.08	0.08	850	G	10x10.2	500

# Type AVRF -55 °C to 105 °C

## SMT Aluminum Electrolytic Capacitors - Lowest E.S.R., 105 °C

Cap. ( $\mu$ F)	Catalog Part Number	Max. DCL 2 min. ( $\mu$ A)	Max. DF @ 120Hz/20°C	Max. E.S.R. @ 100kHz/20°C ( $\Omega$ )	Max. Impedance @ 100kHz/20°C ( $\Omega$ )	Max. Ripple		Case Code	Size DxL (mm)	Quantity /Reel (Ea)
						Current @ 100kHz/105°C (mA)				
<b>16 Vdc</b>										
10	AVRF106M16B12T-F	3.0	0.16	1.65	1.65	70		B	4x5.4	2000
22	AVRF226M16B12T-F	3.5	0.16	1.65	1.65	70		B	4x5.4	2000
47	AVRF476M16C12T-F	7.5	0.16	0.90	0.90	100		C	5x5.4	1000
68	AVRF686M16D16T-F	10.9	0.16	0.50	0.50	160		D	6.3x5.4	1000
330	AVRF337M16F24T-F	52.8	0.16	0.16	0.16	600		F	8x10.2	500
470	AVRF477M16F24T-F	75.2	0.16	0.16	0.16	600		F	8x10.2	500
<b>25 Vdc</b>										
10	AVRF106M25B12T-F	3.0	0.14	1.65	1.65	70		B	4x5.4	2000
22	AVRF226M25C12T-F	5.5	0.14	0.90	0.90	100		C	5x5.4	1000
33	AVRF336M25D16T-F	8.3	0.14	0.50	0.50	160		D	6.3x5.4	1000
47	AVRF476M25D16T-F	11.8	0.14	0.50	0.50	160		D	6.3x5.4	1000
68	AVRF686M25D16T-F	17.0	0.14	0.50	0.50	160		D	6.3x5.4	1000
150	AVRF157M25F24T-F	37.5	0.14	0.16	0.16	600		F	8x10.2	500
220	AVRF227M25F24T-F	55.0	0.14	0.16	0.16	600		F	8x10.2	500
330	AVRF337M25F24T-F	82.5	0.14	0.16	0.16	600		F	8x10.2	500
470	AVRF477M25G24T-F	117.5	0.14	0.08	0.08	850		G	10x10.2	500
<b>35 Vdc</b>										
4.7	AVRF475M35B12T-F	3.0	0.12	1.65	1.65	70		B	4x5.4	2000
10	AVRF106M35C12T-F	3.5	0.12	0.90	0.90	100		C	5x5.4	1000
22	AVRF226M35D16T-F	7.7	0.12	0.50	0.50	160		D	6.3x5.4	1000
33	AVRF336M35D16T-F	11.6	0.12	0.50	0.50	160		D	6.3x5.4	1000
47	AVRF476M35F24T-F	16.5	0.12	0.16	0.16	600		F	8x10.2	500
100	AVRF107M35F24T-F	35.0	0.12	0.16	0.16	600		F	8x10.2	500
150	AVRF157M35F24T-F	52.5	0.12	0.16	0.16	600		F	8x10.2	500
220	AVRF227M35F24T-F	77.0	0.12	0.16	0.16	600		F	8x10.2	500
330	AVRF337M35G24T-F	115.5	0.12	0.08	0.08	850		G	10x10.2	500

### Recommended Land Patterns by case size for AVRF series



Case Code	Case Size	Land Dimensions (mm)		
		C	B	A
B	4x5.4	1.6	2.6	1.0
C	5x5.4	1.6	3.0	1.4
D	6.3x5.4	1.6	3.5	1.9
F	8x10.2	2.5	3.5	3.0
G	10x10.2	2.5	4.0	4.0

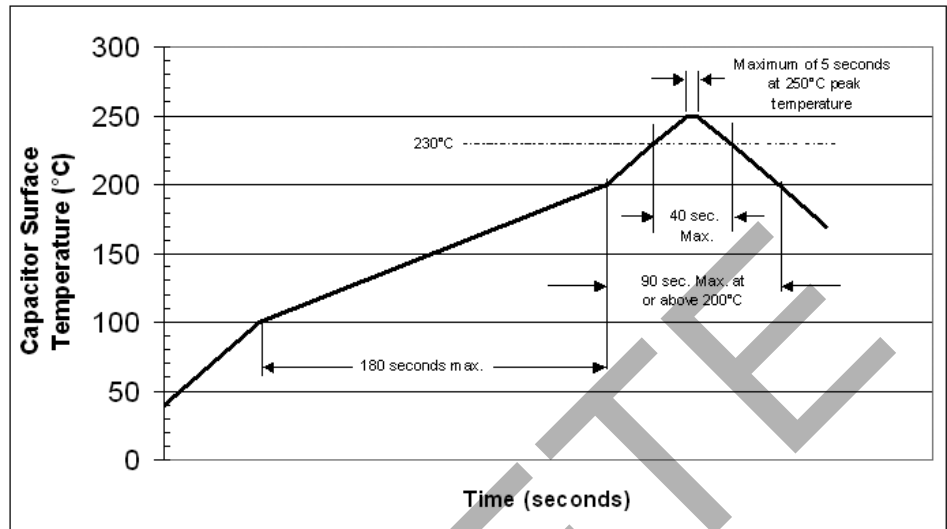
# Type AVRF -55 °C to 105 °C

## SMT Aluminum Electrolytic Capacitors - Lowest E.S.R., 105 °C

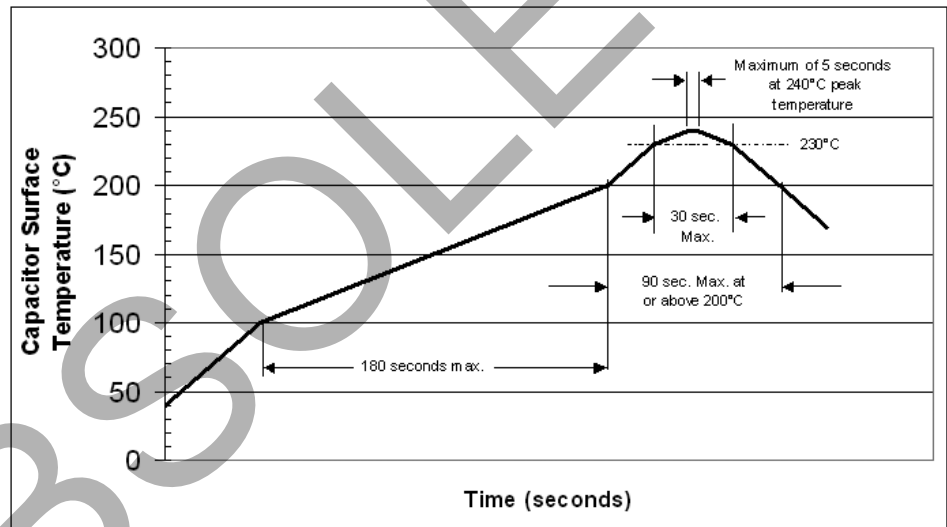
### Recommended Soldering methods

Recommended Reflow Soldering Profiles:

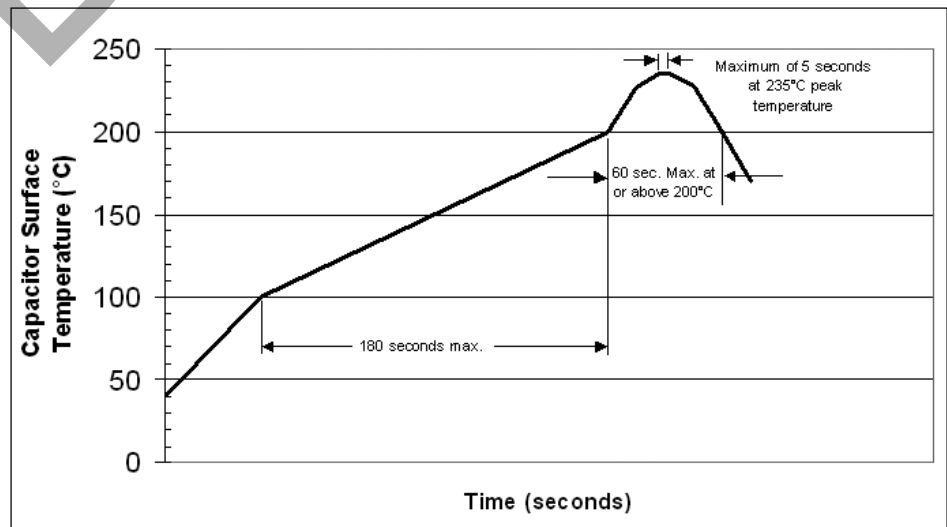
For case diameters  
4 thru 6.3 mm



For 8 mm  
case diameter



For 10 mm  
case diameter



Soldering with a solder iron should be performed with a maximum soldering iron tip temperature of  $350 \pm 5^\circ\text{C}$  for 3 to 4 seconds.

## Type AVRF $-55\text{ }^{\circ}\text{C}$ to $105\text{ }^{\circ}\text{C}$

### SMT Aluminum Electrolytic Capacitors - Lowest E.S.R., $105\text{ }^{\circ}\text{C}$

**Notice and Disclaimer:** All product drawings, descriptions, specifications, statements, information and data (collectively, the "Information") in this datasheet or other publication are subject to change. The customer is responsible for checking, confirming and verifying the extent to which the Information contained in this datasheet or other publication is applicable to an order at the time the order is placed. All Information given herein is believed to be accurate and reliable, but it is presented without any guarantee, warranty, representation or responsibility of any kind, expressed or implied. Statements of suitability for certain applications are based on the knowledge that the Cornell Dubilier company providing such statements ("Cornell Dubilier") has of operating conditions that such Cornell Dubilier company regards as typical for such applications, but are not intended to constitute any guarantee, warranty or representation regarding any such matter – and Cornell Dubilier specifically and expressly disclaims any guarantee, warranty or representation concerning the suitability for a specific customer application, use, storage, transportation, or operating environment. The Information is intended for use only by customers who have the requisite experience and capability to determine the correct products for their application. Any technical advice inferred from this Information or otherwise provided by Cornell Dubilier with reference to the use of any Cornell Dubilier products is given gratis (unless otherwise specified by Cornell Dubilier), and Cornell Dubilier assumes no obligation or liability for the advice given or results obtained. Although Cornell Dubilier strives to apply the most stringent quality and safety standards regarding the design and manufacturing of its products, in light of the current state of the art, isolated component failures may still occur. Accordingly, customer applications which require a high degree of reliability or safety should employ suitable designs or other safeguards (such as installation of protective circuitry or redundancies or other appropriate protective measures) in order to ensure that the failure of an electrical component does not result in a risk of personal injury or property damage. Although all product-related warnings, cautions and notes must be observed, the customer should not assume that all safety measures are indicated in such warnings, cautions and notes, or that other safety measures may not be required.

OBSOLETE

## X-ON Electronics

Largest Supplier of Electrical and Electronic Components

*Click to view similar products for [cornell](#) [dubilier](#) manufacturer:*

Other Similar products are found below :

[474K400CS6](#) [107RZS016M](#) [RJD3032](#) [205QPC250KA3A1LL](#) [255QPC250KA3A1L](#) [RJD2450ST1](#) [RJD2430C1](#) [5AE-2000](#) [M39018/04-2181M](#) [M39018/06-0158M](#) [715P15456MA3](#) [EWF05047](#) [MLS221M250EK0C](#) [940C16P1K-F](#) [GM303M](#) [PSU4330](#) [PSU46030](#) [PVC1628](#) [PVC2168](#) [124-138MFD](#) [DCMC523U025AC2B](#) [DCMX262T400BF2B](#) [AFK226M63E16T-F](#) [AFK686M63G24T-F](#) [DMT1P22K-F](#) [155PHC600K](#) [OPN1070A](#) [OTBG205KNPIR-F](#) [224PPA850K](#) [944U101K801AAI](#) [947C491K801CBMS](#) [SCRN224R-F](#) [SFP44S15K288B-F](#) [SLPX103M025C3P3](#) [AFK-KIT2](#) [CD15ED200DO3](#) [CD19FD252JO3F](#) [CD19FD621JO3](#) [CDV30FJ151JO3](#) [CG332U025R2C](#) [CGS153U050V4C](#) [CGS551T250R4C](#) [PSU27035A](#) [PSU30015](#) [PSU40065A](#) [PSU43015A](#) [PVC11P5](#) [PVC16233](#) [PVC16282](#) [PVC6139](#)