

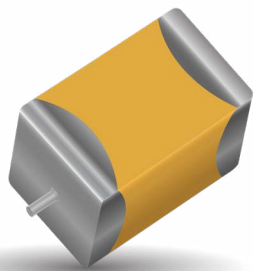


**THE DATASHEET OF  
F720J158MMC**



# F72/F75 Series

## Low Profile and High CV Conformal Coated Chip



### FEATURES

- Compliant to the RoHS3 directive 2015/863/EU
- SMD Conformal
- Small and Low Profile
- 100% Surge Current Tested

### APPLICATIONS

- Smartphone
- Mobile Phone
- Wireless Module
- Hearing Aid



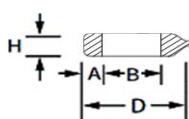
LEAD-FREE  
LEAD-FREE COMPATIBLE  
COMPONENT



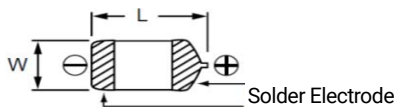
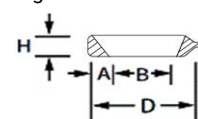
RoHS  
COMPLIANT

### F72/F75

Double Face Electrode



Single Face Electrode



### CASE DIMENSIONS:

millimeters (inches)

Code	EIA Code	EIA Metric	L	W	H	A	B	D*
<b>F72 Case Dimensions</b>								
D	2914	7343-20	7.30±0.30 (0.287±0.012)	4.30±0.30 (0.169±0.012)	2.00 Max. (0.079 Max)	1.30±0.40 (0.051±0.016)	3.90±0.60 (0.153±0.024)	6.40 (0.252)
M	2824	7260-20	7.20±0.30 (0.283±0.012)	6.00±0.30 (0.236±0.012)	2.00 Max. (0.079 Max)	1.30±0.40 (0.051±0.016)	3.80±0.60 (0.150±0.024)	6.20 (0.244)
R	2824	7260-15	7.20±0.30 (0.283±0.012)	6.00±0.30 (0.236±0.012)	1.20±0.30 (0.047±0.012)	1.30±0.40 (0.051±0.016)	3.80±0.60 (0.150±0.024)	6.20 (0.244)
<b>F75 Case Dimensions</b>								
C	2813	7132-28	7.10±0.30 (0.280±0.012)	3.20±0.30 (0.126±0.012)	2.50±0.30 (0.098±0.012)	1.30±0.30 (0.051±0.012)	3.60±0.60 (0.142±0.024)	6.00 (0.236)
D	2914	7343-31	7.30±0.30 (0.287±0.012)	4.30±0.30 (0.169±0.012)	2.80±0.30 (0.110±0.012)	1.30±0.40 (0.051±0.016)	3.90±0.60 (0.153±0.024)	6.40 (0.252)
M	2824	7260-28	7.20±0.30 (0.283±0.012)	6.00±0.30 (0.236±0.012)	2.80 Max. (0.110 Max)	1.30±0.40 (0.051±0.016)	3.80±0.60 (0.150±0.024)	6.20 (0.244)
R	2824	7260-38	7.20±0.30 (0.283±0.012)	6.00±0.30 (0.236±0.012)	3.50±0.30 (0.138±0.012)	1.30±0.40 (0.051±0.016)	3.80±0.60 (0.150±0.024)	6.20 (0.244)
U	2813	7132-20	7.10±0.30 (0.280±0.012)	3.20±0.30 (0.126±0.012)	2.00 Max. (0.079 Max)	1.30±0.30 (0.051±0.012)	3.60±0.60 (0.142±0.024)	6.00 (0.236)

Under development  
\*D dimension only for reference

### HOW TO ORDER

F72

Type

1A

Rated Voltage

107

Capacitance Code  
pF code: 1st two digits represent significant figures, 3rd digit represents multiplier (number of zeros to follow)

M

Tolerance  
K=±10%  
M=±20%

R

Case Size  
See table above

□

Packaging  
See Tape & Reel Packaging Section

□□□

Specification Suffix  
AH1 = Low ESR

AQ2 or Q2

Single Face Electrode

F75

Type

1C

Rated Voltage

157

Capacitance Code  
pF code: 1st two digits represent significant figures, 3rd digit represents multiplier (number of zeros to follow)

M

Tolerance  
K=±10%  
M=±20%

D

Case Size  
See table above

□

Packaging  
See Tape & Reel Packaging Section

AQ2

Single Face Electrode

### TECHNICAL SPECIFICATIONS

Category Temperature Range:	-55 to +125°C
Rated Temperature:	+85°C
Capacitance Tolerance:	±20%, ±10% at 120Hz
Dissipation Factor:	Refer to next page
ESR 100kHz:	Refer to next page
Leakage Current:	After 1 minute's application of rated voltage, leakage current at 20°C is not more than 0.01CV or 0.5µA, whichever is greater. After 1 minute's application of rated voltage, leakage current at 85°C is not more than 0.1CV or 5µA, whichever is greater. After 1 minute's application of derated voltage, leakage current at 125°C is not more than 0.125CV or 6.3µA, whichever is greater.
Capacitance Change By Temperature	+15% Max. at +125°C +10% Max. at +85°C -10% Max. at -55°C

# F72/F75 Series

## Low Profile and High CV Conformal Coated Chip



### CAPACITANCE AND RATED VOLTAGE RANGE (LETTER DENOTES CASE SIZE)

#### F72

Capacitance		Rated Voltage			
µF	Code	4V (0G)	6.3V (0J)	10V (1A)	16V (1C)
33	336				R
47	476			R	R
68	686		R	R	R
100	107	R	R	R	D*
150	157	R	R	R	
220	227	R	R	R	M
330	337	R	R		M
470	477			M	
680	687			M	
1000	108		M/M(AH1)	M	
1500	158		M		

#### F75

Capacitance		Rated Voltage			
µF	Code	4V (0G)	6.3V (0J)	10V (1A)	16V (1C)
68	686				C
100	107				C
150	157			C	D
220	227		C	C/D	R
330	337	C	C/D	D	
470	477	C/D	D/U	R/U	
680	687	D	D/R		
1000	108	D/R	R/U		
1500	158	R			
2200	228	R	M		

Released ratings

\*Codes under development - subject to change.

Please contact to your local KYOCERA AVX sales office when these series are being designed in your application.

### RATINGS & PART NUMBER REFERENCE

#### F72

Part Number	Case Size	Capacitance (µF)	Rated Voltage (V)	DCL (µA)	DF @ 120Hz (%)	ESR @ 100kHz (Ω)	100kHz RMS Current (mA)			*1 ΔC/C (%)	MSL
							25°C	85°C	125°C		
4 Volt											
F720G107#RC	R	100	4	4.0	8	0.70	463	417	185	*	3
F720G157#RC	R	150	4	6.0	10	0.70	463	417	185	*	3
F720G227#RC	R	220	4	8.8	12	0.70	463	417	185	*	3
F720G337#RC	R	330	4	13.2	12	0.70	463	417	185	*	3
6.3 Volt											
F720J686#RC	R	68	6.3	4.3	6	0.75	447	402	179	*	3
F720J107#RC	R	100	6.3	6.3	8	0.70	463	417	185	*	3
F720J157#RC	R	150	6.3	9.5	10	0.70	463	417	185	*	3
F720J227#RC	R	220	6.3	13.9	12	0.70	463	417	185	*	3
F720J337#RC	R	330	6.3	20.8	12	0.70	463	417	185	*	3
F720J108#MCAQ2	M	1000	6.3	63.0	30	0.14	1118	1006	447	±15	3
F720J108#MCAH1Q2	M	1000	6.3	63.0	30	0.075	1528	1375	611	±15	3
F720J158#MCAQ2	M	1500	6.3	95.0	45	0.14	1118	1006	447	±20	3
10 Volt											
F721A476#RC	R	47	10	4.7	6	0.80	433	390	173	*	3
F721A686#RC	R	68	10	6.8	6	0.75	447	402	179	*	3
F721A107#RC	R	100	10	10.0	8	0.70	463	417	185	*	3
F721A157#RC	R	150	10	15.0	10	0.70	463	417	185	*	3
F721A227#RC	R	220	10	22.0	12	0.70	463	417	185	*	3
F721A477#MCAQ2	M	470	10	47.0	30	0.14	1118	1006	447	±15	3
F721A687#MCAQ2	M	680	10	68.0	35	0.14	1118	1006	447	±20	3
F721A108#MCAQ2	M	1000	10	200	45	0.14	1118	1006	447	±20	3
16 Volt											
F721C336#RC	R	33	16	5.3	6	0.90	408	367	163	*	3
F721C476#RC	R	47	16	7.5	6	0.80	433	390	173	*	3
F721C686#RC	R	68	16	10.9	6	0.75	447	402	179	*	3
F721C107#DCAQ2	D	100	16	16.0	10	0.20	866	779	346	*	3
F721C227#MCAQ2	M	220	16	35.2	12	0.20	935	842	374	±20	3
F721C337#MCAQ2	M	330	16	52.8	45	0.20	935	842	374	±20	3

#### F75

Part Number	Case Size	Capacitance (µF)	Rated Voltage (V)	DCL (µA)	DF @ 120Hz (%)	ESR @ 100kHz (Ω)	100kHz RMS Current (mA)			*1 ΔC/C (%)	MSL
							25°C	85°C	125°C		
4 Volt											
F750G337#CC	C	330	4	13.2	10	0.15	856	771	343	*	3
F750G477#CC	C	470	4	18.8	14	0.12	957	862	383	*	3
F750G477#DC	D	470	4	18.8	14	0.12	1118	1006	447	*	3
F750G687#DC	D	680	4	27.2	18	0.12	1118	1006	447	*	3
F750G108#DC	D	1000	4	40.0	24	0.12	1118	1006	447	*	3
F750G108#RC	R	1000	4	40.0	24	0.12	1443	1299	577	*	3
F750G158#RC	R	1500	4	60.0	30	0.12	1443	1299	577	*	3
F750G228#RC	R	2200	4	88.0	45	0.07	1890	1701	756	*	3
6.3 Volt											
F750J227#CC	C	220	6.3	13.9	10	0.20	742	667	297	*	3
F750J337#CC	C	330	6.3	20.8	10	0.15	856	771	343	*	3
F750J337#DC	D	330	6.3	20.8	10	0.15	1000	900	400	*	3
F750J477#DC	D	470	6.3	29.6	14	0.12	1118	1006	447	*	3

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042920

# F72/F75 Series

## Low Profile and High CV Conformal Coated Chip



### RATINGS & PART NUMBER REFERENCE

Part Number	Case Size	Capacitance (µF)	Rated Voltage (V)	DCL (µA)	DF @ 120Hz (%)	ESR @ 100kHz (Ω)	100kHz RMS Current (mA)			*1 ΔC/C (%)	MSL
							25°C	85°C	125°C		
F750J477#UC	U	470	6.3	29.6	15	0.10	1049	944	420	*	3
F750J687#DC	D	680	6.3	42.8	18	0.12	1118	1006	447	*	3
F750J687#RC	R	680	6.3	42.8	18	0.12	1443	1299	577	*	3
F750J108#RC	R	1000	6.3	63.0	24	0.12	1443	1299	577	*	3
F750J108#UCAQ2	U	1000	6.3	126	40	0.15	856	771	343	±20	3
F750J228#MCAQ2	M	2200	6.3	139	60	0.08	1581	1423	632	±20	3
<b>10 Volt</b>											
F751A157#CC	C	150	10	15.0	10	0.22	707	636	283	*	3
F751A227#CC	C	220	10	22.0	10	0.20	742	667	297	*	3
F751A227#DC	D	220	10	22.0	10	0.20	866	779	346	*	3
F751A337#DC	D	330	10	33.0	10	0.15	1000	900	400	*	3
F751A477#RC	R	470	10	47.0	14	0.12	1443	1299	577	*	3
F751A477#UCAQ2	U	470	10	94.0	30	0.15	856	771	343	±20	3
<b>16 Volt</b>											
F751C686#CC	C	68	16	10.9	10	0.22	707	636	283	*	3
F751C107#CC	C	100	16	16.0	10	0.22	707	636	283	*	3
F751C157#DC	D	150	16	24.0	10	0.22	826	743	330	*	3
F751C227#RC	R	220	16	35.2	10	0.20	1118	1006	447	*	3

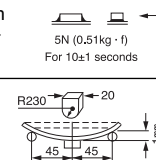
\*1: ΔC/C Marked “\*”

#: "M" for ±20% tolerance, "K" for ±10% tolerance.  
Moisture Sensitivity Level (MSL) is defined according to J-STD-020.

Item	F72/F75 All Case (%)
Damp Heat	±10
Temperature cycles	±5
Resistance soldering heat	±5
Surge	±5
Endurance	±10

### QUALIFICATION TABLE

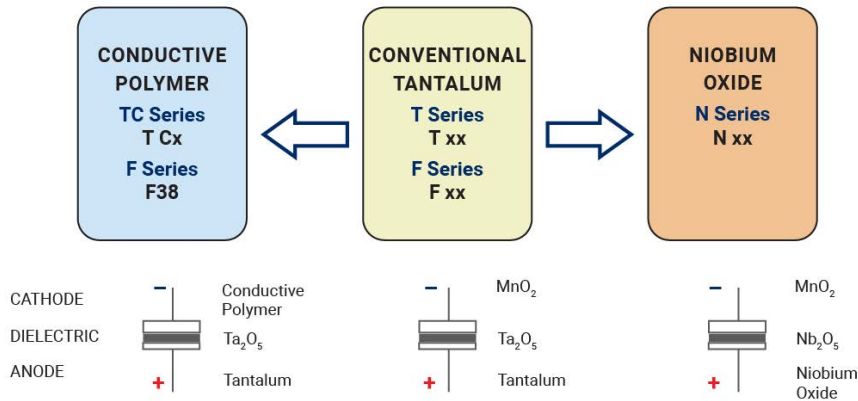
TEST	F72/F75 series (Temperature range -55°C to +125°C)	
	Condition	
<b>Damp Heat (Steady State)</b>	At 40°C, 90 to 95% R.H., 500 hours (No voltage applied) Capacitance Change ..... Refer to the table above (*1) Dissipation Factor ..... Initial specified value or less Leakage Current ..... Initial specified value or less	
<b>Temperature Cycles</b>	At -55°C / +125°C, 30 minutes each, 5 cycles Capacitance Change ..... Refer to the table above (*1) Dissipation Factor ..... Initial specified value or less Leakage Current ..... Initial specified value or less	
<b>Resistance to Soldering Heat</b>	10 seconds reflow at 260°C, 10 seconds immersion at 260°C. Capacitance Change ..... Refer to the table above (*1) Dissipation Factor ..... Initial specified value or less Leakage Current ..... Initial specified value or less	
<b>Surge</b>	After application of surge voltage in series with a 33Ω resistor at the rate of 30 seconds ON, 30 seconds OFF, for 1000 successive test cycles at 85°C, capacitors shall meet the characteristic requirements in the table above. Capacitance Change ..... Refer to the table above (*1) Dissipation Factor ..... Initial specified value or less Leakage Current ..... Initial specified value or less	
<b>Endurance</b>	After 2000 hours' application of rated voltage at 85°C, capacitors shall meet the characteristic requirements in the table above. Capacitance Change ..... Refer to the table above (*1) Dissipation Factor ..... Initial specified value or less Leakage Current ..... Initial specified value or less	
<b>Shear Test</b>	After applying the pressure load of 5N for 10±1 seconds horizontally to the center of capacitor side body which has no electrode and has been soldered beforehand on a substrate, there shall be found neither exfoliation nor its sign at the terminal electrode.	
<b>Terminal Strength</b>	Keeping a capacitor surface-mounted on a substrate upside down and supporting the substrate at both of the opposite bottom points 45mm apart from the center of capacitor, the pressure strength is applied with a specified jig at the center of substrate so that the substrate may bend by 1mm as illustrated. Then, there shall be found no remarkable abnormality on the capacitor terminals.	



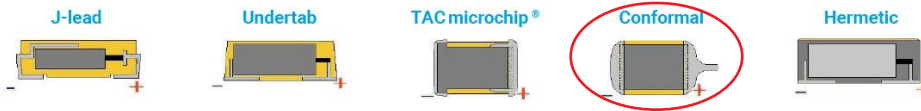
# F72/F75 Series

## Low Profile and High CV Conformal Coated Chip

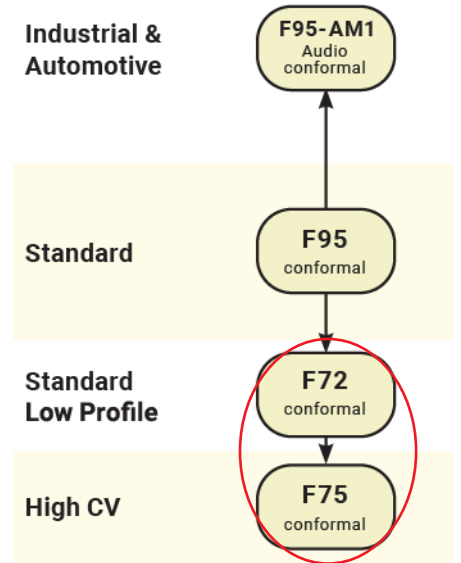
### SOLID ELECTROLYTE CAPACITOR ROADMAP



### FIVE CAPACITOR CONSTRUCTION STYLES



### SERIES LINE UP : CONFORMAL Ta MnO<sub>2</sub>



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