SOLID TANTALUM ELECTROLYTIC CAPACITORS

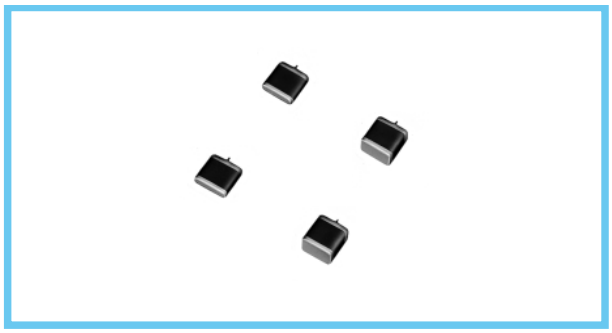
nichicon

F72 Low Profile Conformal coated Chip — Upgrade — **F75** Maximum CV Conformal coated Chip

FRAMELESS™

For SMD | Smaller | For High Frequency

● Adapted to the RoHS directive (2002/95/EC).



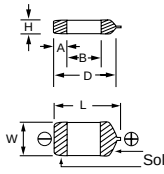
F72

■ Type numbering system (Example : 10V 100µF)

1	2	3	4	5	6	7	8	9	10	11
F	7	2	1	A	1	0	7	M	R	

Taping code (Refer to page 267 for details)
Case code
Capacitance tolerance
Rated Capacitance
Rated voltage
Series

■ Drawing



■ Dimensions

(mm)

Case code	L	W	H	A	B	(D)
R	7.2±0.3	6.0±0.3	1.2±0.3	1.3±0.4	3.8±0.6	(6.2)

D dimension only for reference

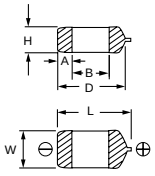
F75

■ Type numbering system (Example : 16V 150µF)

1	2	3	4	5	6	7	8	9	10	11
F	7	5	1	C	1	5	7	M	D	

Taping code (Refer to page 267 for details)
Case code
Capacitance tolerance
Rated Capacitance
Rated voltage
Series

■ Drawing



■ Dimensions

(mm)

Case code	L	W	H	A	B	(D)
C	7.1 ± 0.3	3.2 ± 0.3	2.5 ± 0.3	1.3 ± 0.3	3.6 ± 0.6	(6.0)
D	7.3 ± 0.3	4.3 ± 0.3	2.8 ± 0.3	1.3 ± 0.4	3.9 ± 0.6	(6.4)
R	7.2 ± 0.3	6.0 ± 0.3	3.5 ± 0.3	1.3 ± 0.4	3.8 ± 0.6	(6.2)

D dimension only for reference

■ Standard ratings

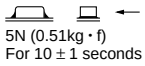
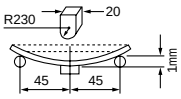
F72

Cap.(µF) \ V	Code	4	6.3	10	16
		0G	0J	1A	1C
33	336				R
47	476			R	R
68	686		R	R	R
100	107	R	R	R	
150	157	R	R	R	
220	227	R	R	R	
330	337	R	R	(R)	

F75

Cap. (µF) \ V	Code	4	6.3	10	16
		0G	0J	1A	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	R	
680	687	D	D・R		
1000	108	D・R	R		
1500	158	R			
2200	228	R			

■ Specifications

Item	Performance Characteristics	
Category Temperature Range	−55 ~ +125˚C (Rated temperature : +85˚C)	
Capacitance Tolerance	±20%, ±10% (at 120Hz)	
Dissipation Factor (120Hz)	F72	F75
	33~68µF 6%Max. 100µF~ 8%Max. 150µF 10%Max. 220µF~330µF 12%Max.	68~330µF 10%Max. 470µF 14%Max. 680µF 18%Max. 1000µF 24%Max. 1500µF 30%Max. 2200µF 45%Max.
ESR (100kHz)	33µF 0.90Ω 47µF 0.80Ω 68µF 0.75Ω 100µF~ 0.70Ω	~150µF 0.22Ω 220µF 0.20Ω 330µF 0.15Ω 470~1500µF 0.12Ω 2200µF 0.07Ω
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)	
Damp Heat	At 40˚C, 90~95% R.H., For 500 hours (No voltage applied) Capacitance Change ..... Within ±10% of initial value Dissipation Factor ..... Initial specified value or less Leakage Current ..... Initial specified value or less	
Temperature Cycles	At −55˚C / +125˚C, 30 minutes each, For 5 cycles, Capacitance Change ..... Within ±5% of initial value Dissipation Factor ..... Initial specified value or less Leakage Currentv ..... Initial specified value or less	
Resistance to Soldering Heat	Reflow at 260˚C for 10 seconds, Dipping Flow at 260˚C for 10 seconds Capacitance Change ..... Within ±5% of initial value Dissipation Factor ..... Initial specified value or less Leakage Current ..... Initial specified value or less	
Surge*	After application of surge 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 meet the characteristics requirements listed below. Capacitance Change ..... Within ±5% of initial value Dissipation Factor ..... Initial specified value or less Leakage Current ..... Initial specified value or less	
Endurance*	After 2000 hours' application of rated voltage at 85˚C, or derated voltage at 125˚C, capacitors meet the characteristic requirements listed below. Capacitance Change ..... Within ±10% of initial value Dissipation Factor ..... Initial specified value or less Leakage Current ..... Initial specified value or less	
Shear Test	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 an aluminum substrate, there shall be found neither exfoliation nor its sign at the terminal electrode.	 5N (0.51kg・f) For 10 ± 1 seconds
Terminal Strength	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 the capacitor, the pressure strength is applied with a specified jig at the center of the substrate so that the substrate may bend by 1mm as illustrated. Then, there shall be found no remarkable abnormality on the capacitor terminals.	

* As for the surge and derated voltage at 125˚C, refer to page 266 for details.