

F72 Low Profile
Conformal
coated Chip

Upgrade

F75 Maximum CV
Conformal
coated Chip

FRAMELESS™



For SMD

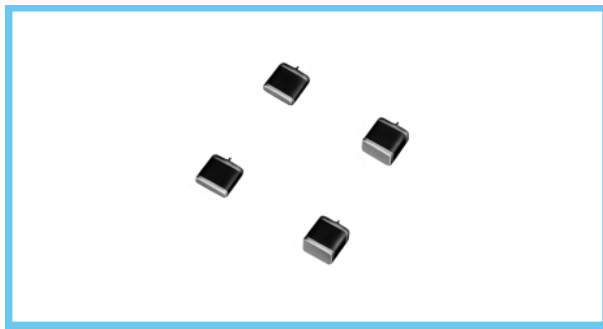


Smaller



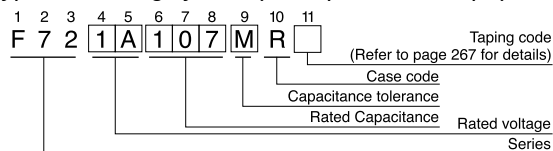
For High
Frequency

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

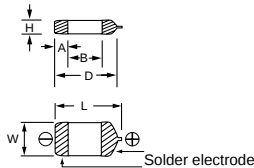


F72

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



■ Drawing



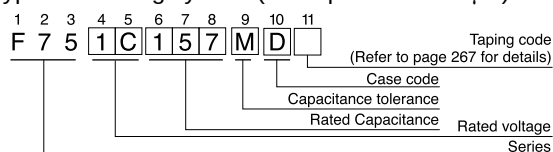
■ Dimensions

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)

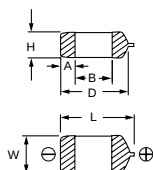
D dimension only for reference

F75

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



■ Drawing



■ Dimensions

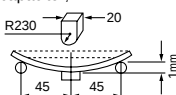
Case code	L	W	H	A	B	(D)
C	7.1 ± 0.3	3.2 ± 0.3	2.5 ± 0.3	1.3 ± 0.3	3.6 ± 0.6	(6.0)
D	7.3 ± 0.3	4.3 ± 0.3	2.8 ± 0.3	1.3 ± 0.4	3.9 ± 0.6	(6.4)
R	7.2 ± 0.3	6.0 ± 0.3	3.5 ± 0.3	1.3 ± 0.4	3.8 ± 0.6	(6.2)

D dimension only for reference

■ Standard ratings

Cap. (μF)	V	4	6.3	10	16
Code	OG	OJ	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)	

■ Specifications

Item	Performance Characteristics			
Category	-55 ~ +125°C (Rated temperature : +85°C)			
Temperature Range				
Capacitance Tolerance	±20%, ±10% (at 120Hz)			
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Dissipation Factor (120Hz)	33~68μF 100μF~ 150μF 220μF~330μF	6%Max. 8%Max. 10%Max. 12%Max.	68~330μF 470μF 680μF 1000μF 1500μF 2200μF	10%Max. 14%Max. 18%Max. 24%Max. 30%Max. 45%Max.
ESR (100kHz)	33μF 47μF 68μF 100μF~	0.90Ω 0.80Ω 0.75Ω 0.70Ω	~150μF 220μF 330μF 470~1500μF 2200μF	0.22Ω 0.20Ω 0.15Ω 0.12Ω 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 Current 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. 			
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.

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Cap. (μF)	V	4	6.3	10	16
Code	OG	OJ	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			