

**F72** Low Profile  
Conformal  
coated Chip

**F75** Maximum CV  
Conformal  
coated Chip

FRAMELESS™

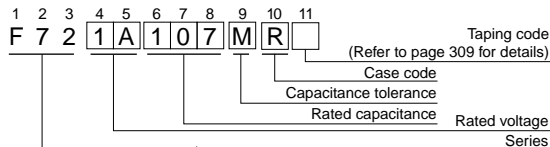


● Compliant to the RoHS directive (2002/95/EC).

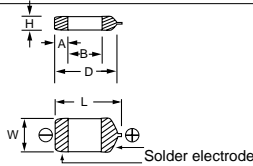


## F72

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



■ Drawing

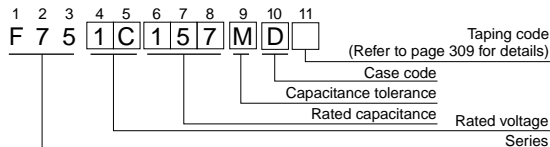


■ Dimensions

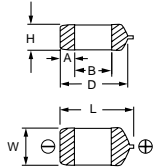
Case code	L	W	H	A	B	(D)
R	7.2 ± 0.3	6.0 ± 0.3	1.2 ± 0.3	1.3 ± 0.4	3.8 ± 0.6	(6.2)
M	7.2 ± 0.3	6.0 ± 0.3	2.0 MAX.	1.3 ± 0.4	3.8 ± 0.6	(6.2)

## 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)

■ Standard Ratings

### F72

Cap. (μF)	Code	V			
		4	6.3	10	16
33	336	0G	0J	1A	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)	
470	477			(M)	
680	687			(M)	
1000	108		M		
1500	158		(M)		

## Specifications

Item	Performance Characteristics				
Category	-55 to +125°C (Rated temperature : +85°C)				
Temperature Range	-55 to +125°C (Rated temperature : +85°C)				
Capacitance Tolerance	±20%, ±10% (at 120Hz)				
Dissipation Factor (120Hz)	F72		F75		
	33 to 68μF	6%Max.	68 to 330μF	10%Max.	
	100μF or more	8%Max.	470μF	14%Max.	
	150μF	10%Max.	680μF	18%Max.	
	220μF to 330μF	12%Max.	1000μF	24%Max.	
ESR (100kHz)	F72		F75		
	33μF	0.90Ω	Less than 150μF	0.22Ω	
	47μF	0.80Ω	220μF	0.20Ω	
	68μF	0.75Ω	330μF	0.15Ω	
	100 to 330μF	0.70Ω	470 to 1500μF	0.12Ω	
1000μF	0.14Ω	2200μF	0.07Ω		
Leakage Current	<ul style="list-style-type: none"> <li>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.</li> <li>After 1 minute's application of rated voltage, leakage current at 85°C is not more than 0.1CV or 5μA, whichever is greater.</li> <li>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.</li> </ul>				
	Capacitance Change by Temperature	+15% Max. (at +125°C)			
		+10% Max. (at +85°C)			
		-10% Max. (at -55°C)			
Damp Heat (Steady State)	At 40°C, 90 to 95% R.H., For 500 hours (No voltage applied)				
	Capacitance Change ..... Refer to * 1				
	Dissipation Factor ..... Initial specified value or less				
Temperature Cycles	At -55°C / +125°C, 30 minutes each, For 5 cycles,				
	Capacitance Change ..... Refer to * 1				
	Dissipation Factor ..... 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 ..... Refer to * 1				
	Dissipation Factor ..... 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 ..... Refer to * 1				
	Dissipation Factor ..... 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 ..... Refer to * 1				
	Dissipation Factor ..... 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.			<p>5N (0.51kg · f) For 10 ± 1 seconds</p>	
	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.			<p>R230 20 45 45 1mm</p>

\* As for the surge and derated voltage at 125°C, refer to page 308 for details.

\*1 : ΔC/C

Item	F72 M	Other
Damp Heat	±15	±10
Temperature cycles	±15	±5
Resistance soldering heat	±15	±5
Surge	±15	±5
Endurance	±15	±10

### F75

Cap. (μF)	Code	V			
		4	6.3	10	16
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			

( ) The series in parentheses are being developed. Please contact to your local Nichicon sales office when these series are being designed in your application.