

# F91

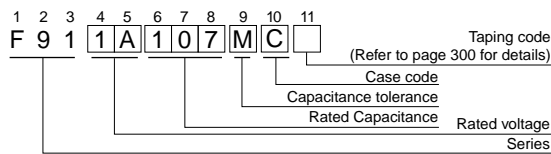
LOW ESR  
Resin-molded Chip,



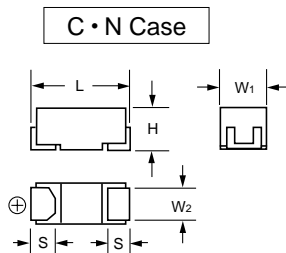
● Adapted to the RoHS directive (2002/95/EC).



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



## ■ Drawing

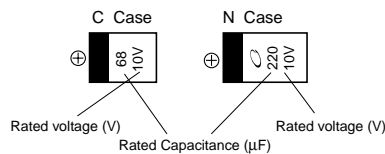


## ■ Dimensions

Case Code	L	W <sub>1</sub>	W <sub>2</sub>	H	S
C	6.0 ± 0.2	3.2 ± 0.2	2.2 ± 0.1	2.5 ± 0.2	1.3 ± 0.2
N	7.3 ± 0.2	4.3 ± 0.2	2.4 ± 0.1	2.8 ± 0.2	1.3 ± 0.2

(mm)

## ■ Marking



## ■ Standard ratings

Cap. (μF)	Code	V			
		2.5	4	6.3	10
68	686	0E	0G	0J	1A
100	107			C	C
150	157		C	C	N
220	227	C	C	C · N	N
330	337		N	N	N
470	477	N	N	N	
680	687		N		

## ■ Specifications

Item	Performance Characteristics
Category	
Temperature Range	-55 to +125°C (Rated temperature : 85°C)
Capacitance Tolerance	±20%, ±10% (at 120Hz)
Dissipation Factor (120Hz)	Refer to the list below.
ESR (100kHz)	Refer to the list below.
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 (No voltage applied)	At 40°C 90 to 95% R.H. 500 hours Capacitance Change Within ±10% of initial value Dissipation Factor.....Initial specified value or less Leakage Current.....Initial specified value or less
Temperature Cycles	-55°C / +125°C 30 minutes each 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	Test condition: 10 seconds reflow at 260°C Capacitance Change Within ±3% 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 characteristic 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 in series with a 3Ω resistor at 85°C, or derated voltage in series with a 3Ω resistor at 125°C, capacitors meet the characteristics 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, neither exfoliation nor its sign shall be found 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 load 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 299 for details.

Rated Volt	Rated Capacitance (μF)	Case code	Part Number	Leakage Current (μA)	Dissipation Factor (% @ 120Hz)	ESR (mΩ @ 100kHz)
2.5V	220	C	F910E227MCC	5.5	12	250
	470	N	F910E477MNC	11.8	12	100
4V	150	C	F910G157MCC	6.0	12	250
	220	C	F910G227MCC	8.8	12	250
	330	N	F910G337MNC	13.2	10	100
	470	N	F910G477MNC	18.8	16	100
	680	N	F910G687MNC	27.2	18	100
6.3V	100	C	F910J107MCC	6.3	10	250
	150	C	F910J157MCC	9.5	12	250
	220	C	F910J227MCC	13.9	14	250
	220	N	F910J227MNC	13.9	10	100
	330	N	F910J337MNC	20.8	14	100
10V	470	N	F910J477MNC	29.6	16	100
	68	C	F911A686MCC	6.8	8	300
	100	C	F911A107MCC	10.0	10	250
	150	N	F911A157MNC	15.0	10	100
	220	N	F911A227MNC	22.0	12	100
	330	N	F911A337MNC	33.0	18	100

※ In case of capacitance tolerance ± 10% type, [K] will be put at 9th digit of type numbering system.