

# SOLID TANTALUM ELECTROLYTIC CAPACITORS



## F98

Resin-molded Chip,  
High Capacitance Series

FRAMELESS™



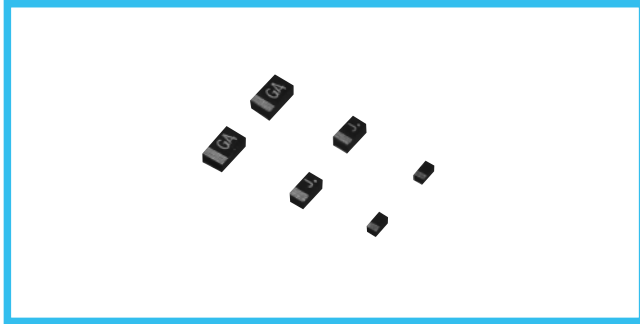
For SMD



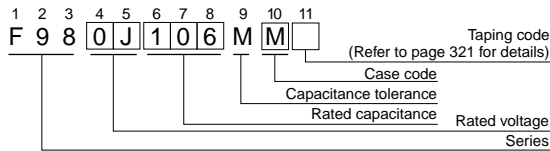
Smaller



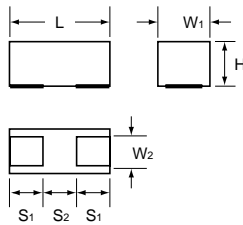
● Compliant to the RoHS directive (2002/95/EC).



### Type numbering system (Example : 6.3V 10μF)



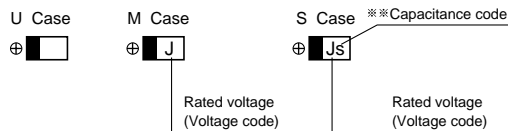
### Drawing



(mm)

Case Code	L	W <sub>1</sub>	W <sub>2</sub>	H	S <sub>1</sub>	S <sub>2</sub>
U	1.10 ± 0.05	0.60 ± 0.05	0.35 ± 0.05	0.55 ± 0.05	0.3 ± 0.05	0.5 ± 0.05
M	1.6 ± 0.1	0.85 ± 0.1	0.65 ± 0.1	0.8 ± 0.1	0.5 ± 0.1	0.6 ± 0.1
S	2.0 ± 0.1	1.25 ± 0.1	0.9 ± 0.1	0.8 ± 0.1	0.5 ± 0.1	1.0 ± 0.1

### Marking

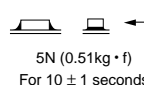
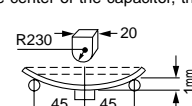


### Standard Ratings

Cap. (μF)	V	Code							Capacitance code
		4	6.3	10	16	20	25		
1	105				M	M	M	—	
2.2	225			U · M	M			—	
4.7	475	U	U · M	(U) · M	M			—	
10	106	U	U · M	M	S			a	
22	226	M	M	(M) · S				J	
33	336	M	M	S				n	
47	476	M	M · S					s	
68	686	(M) · S						w	
100	107	(M) · S	(S)					A	

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

### Specifications

Item	Performance Characteristics
Category	
Temperature Range	-55 to +125°C (Rated temperature : 85°C)
Capacitance Tolerance	±20% (at 120Hz)
Dissipation Factor	Refer to the list below
ESR	Refer to the list below
Leakage Current	Refer to next page Provided that • After 5 minute's application of rated voltage, leakage current at 85°C, 10 times or less than 20°C specified value. • After 5 minute's application of rated voltage, leakage current at 125°C, 12.5 times or less than 20°C specified value.
Damp Heat (Steady State)	At 40°C, 90 to 95% R.H., For 500hours (No voltage applied) Capacitance Change ··· Refer to the list below (* 1) Dissipation Factor ····· 150% or less of initial specified value Leakage Current ····· 200% or less of initial specified value
Temperature Cycles	At -55°C / +125°C, For 30 minutes each, 5 cycles Capacitance Change ··· Refer to the list below (* 1) Dissipation Factor ····· 150% or less than the initial specified value Leakage Current ····· Initial specified value or less
Resistance to Soldering Heat	At 260°C, For 10 seconds, Reflow, Capacitance Change ··· Refer to the list below (* 1) Leakage Current ····· Initial specified value or less Leakage Current ····· Initial specified value or less
Surge*	After application of surge in series with a 1kΩ 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 the list below (* 1) Dissipation Factor ····· 150% or less than the initial specified value Leakage Current ····· 200% or less than the initial specified value
Endurance*	After 1000 hours' application of rated voltage in series with a 3Ω resistor at 85°C, capacitors meet the characteristic requirements listed below Capacitance Change ··· Refer to the list below (* 1) Dissipation Factor ····· 150% or less than the initial specified value Leakage Current ····· 200% or less than the initial specified value
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 320 for details.

Rated Volt	Rated Capacitance (μF)	Case code	Part Number	Leakage Current (μA)	*1 Dissipation Factor (% @ 120kHz)	ESR (Ω @ 100kHz)	ΔC/C (%)
4V	4.7	U	F980G475MUA	0.5	20	20	±30
	10	U	F980G106MUA	0.8	25	20	±30
	22	M	F980G226MMA	0.9	15	7.5	±30
	33	M	F980G336MMA	1.3	30	4	±30
	47	M	F980G476MMA	1.9	40	8	±30
	68	S	F980G686MSA	2.7	30	4	±30
	100	S	F980G107MSA	4.0	35	4	±30
6.3V	4.7	U	F980J475MUA	0.6	20	20	±30
	4.7	M	F980J475MMA	0.5	20	7.5	±30
	10	U	F980J106MUA	3.2	30	30	±30
	10	M	F980J106MMA	0.6	8	6	±30
	22	M	F980J226MMA	1.4	20	6	±30
	33	M	F980J336MMA	4.2	35	8	±30
	47	M	F980J476MMA	23.7	45	10	±30
10V	47	S	F980J476MSA	3.0	25	6	±30
	2.2	U	F981A225MUA	0.5	15	15	±30
	2.2	M	F981A225MMA	0.5	6	7.5	±30
	4.7	M	F981A475MMA	0.5	6	6	±30
	10	M	F981A106MMA	1.0	20	7.5	±30
16V	22	S	F981A226MSA	2.2	20	4	±20
	33	S	F981A336MSA	3.3	30	6	±30
	1	M	F981C105MMA	0.5	6	10	±30
	2.2	M	F981C225MMA	0.5	6	10	±30
20V	4.7	M	F981C475MMA	0.8	12	12	±30
	10	S	F981C106MSA	1.6	18	4	±20
	1	M	F981D105MMA	0.5	6	10	±30
25V	1	M	F981E105MMA	0.5	8	10	±30

\*1: Leakage Current

After 5 minute's application of rated voltage, leakage current at 20°C.

CAT.8100Z