

F92 Series



Resin-Molded Chip, Low Profile J-Lead



FEATURES

- Compliant to the RoHS2 directive 2011/65/EU
- SMD J-lead
- Low profile case sizes

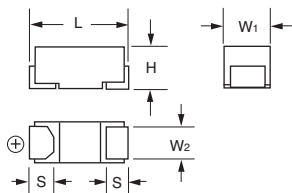
APPLICATIONS

- Handheld electronics
- USB accessories

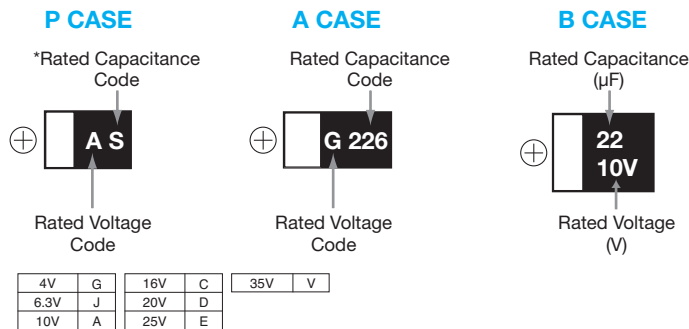


CASE DIMENSIONS: millimeters (inches)

Code	EIA Code	EIA Metric	L	W ₁	W ₂	H	S
A	1206	3216-12	3.20 ± 0.20 (0.126 ± 0.008)	1.60 ± 0.20 (0.063 ± 0.008)	1.20 ± 0.10 (0.047 ± 0.004)	1.10 ± 0.10 (0.043 ± 0.004)	0.80 ± 0.20 (0.031 ± 0.008)
B	1311	3428-12	3.40 ± 0.20 (0.134 ± 0.008)	2.80 ± 0.20 (0.110 ± 0.008)	2.30 ± 0.10 (0.091 ± 0.004)	1.10 ± 0.10 (0.043 ± 0.004)	0.80 ± 0.20 (0.031 ± 0.008)
P	0805	2012-12	2.00 ± 0.20 (0.079 ± 0.008)	1.25 ± 0.10 (0.049 ± 0.004)	0.90 ± 0.10 (0.035 ± 0.004)	1.10 ± 0.10 (0.043 ± 0.004)	0.50 ± 0.20 (0.020 ± 0.008)

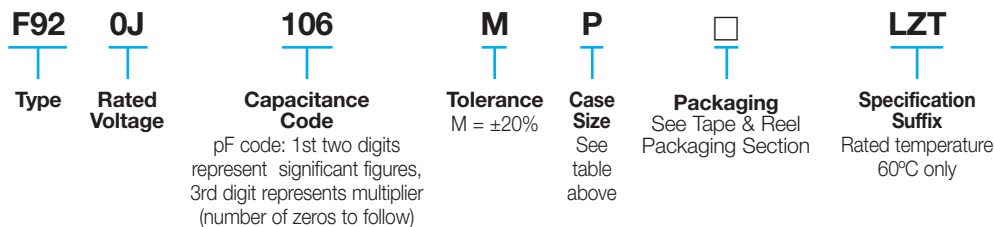


MARKING



*Capacitance code of "P" case products are as shown below.

HOW TO ORDER



TECHNICAL SPECIFICATIONS

Category Temperature Range:	-55 to +125°C								
Rated Temperature:	+85°C								
Capacitance Tolerance:	±20% at 120Hz								
Dissipation Factor:	Refer to next page								
ESR 100kHz:	Refer to next page								
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	<table border="1"> <thead> <tr> <th>P Case</th> <th>A, B Case</th> </tr> </thead> <tbody> <tr> <td>+20% Max. at +125°C</td> <td>+15% Max. at +125°C</td> </tr> <tr> <td>+15% Max. at +85°C</td> <td>+10% Max. at +85°C</td> </tr> <tr> <td>-15% Max. at -55°C</td> <td>-10% Max. at -55°C</td> </tr> </tbody> </table>	P Case	A, B Case	+20% Max. at +125°C	+15% Max. at +125°C	+15% Max. at +85°C	+10% Max. at +85°C	-15% Max. at -55°C	-10% Max. at -55°C
P Case	A, B Case								
+20% Max. at +125°C	+15% Max. at +125°C								
+15% Max. at +85°C	+10% Max. at +85°C								
-15% Max. at -55°C	-10% Max. at -55°C								

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CAPACITANCE AND RATED VOLTAGE RANGE (LETTER DENOTES CASE SIZE)

Capacitance		Rated Voltage							*Cap Code
μF	Code	4V (0G)	6.3V (0J)	10V (1A)	16V (1C)	20V (1D)	25V (1E)	35V (1V)	
0.22	224							A	J
0.33	334							A	N
0.47	474				P	A/P		A	S
0.68	684				P	A			W
1.0	105			P	P	A/P	A/P	A	A
1.5	155			P	P	A			E
2.2	225		P	P	A/P	A/P*	A/B	B	J
3.3	335	P	P	A/P	A			B	N
4.7	475	P	P	A/P	A/B/P*	A/B	A/B		S
6.8	685	P	P	A/P	B				w
10	106	A/P	A/P	A/P	A/B	B			a
15	156	P	A/P	A					e
22	226	A/P	A/P	A/B	B				J
33	336	A/P	A/B	B					n
47	476	A/B/P*	A/B	B					s
68	686	A/B							w
100	107	A/B	A**/B						A
150	157	B							E
220	227	B*							J

Available Ratings

*Codes under development – subject to change

**Rated temperature 60°C only. Please contact AVX when you need detail spec.

Please contact to your local AVX sales office when these series are being designed in your application.

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RATINGS & PART NUMBER REFERENCE

AVX Part No.	Case Size	Capacitance (µF)	Rated Voltage (V)	DCL (µA)	DF @ 120Hz (%)	ESR @ 100kHz (Ω)	*1 ΔC/C (%)
4 Volt							
F920G335MPA	P	3.3	4	0.5	8	12.0	*
F920G475MPA	P	4.7	4	0.5	8	6.0	*
F920G685MPA	P	6.8	4	0.5	10	6.0	*
F920G106MAA	A	10	4	0.5	8	4.0	*
F920G106MPA	P	10	4	0.5	10	6.0	*
F920G156MPA	P	15	4	0.6	10	5.0	*
F920G226MAA	A	22	4	0.9	12	2.8	*
F920G226MPA	P	22	4	0.9	20	5.0	*
F920G336MAA	A	33	4	1.3	12	2.8	*
F920G336MPA	P	33	4	1.3	20	4.0	*
F920G476MAA	A	47	4	1.9	18	2.8	*
F920G476MBA	B	47	4	1.9	12	1.7	*
F920G686MAA	A	68	4	2.7	25	2.8	±15
F920G686MBA	B	68	4	2.7	18	1.5	*
F920G107MAA	A	100	4	4.0	30	2.8	±15
F920G107MBA	B	100	4	4.0	18	1.3	*
F920G157MBA	B	150	4	6.0	25	1.3	±15
6.3 Volt							
F920J225MPA	P	2.2	6.3	0.5	8	12.0	*
F920J335MPA	P	3.3	6.3	0.5	8	12.0	*
F920J475MPA	P	4.7	6.3	0.5	8	6.0	*
F920J685MPA	P	6.8	6.3	0.5	10	6.0	*
F920J106MAA	A	10	6.3	0.6	8	4.0	*
F920J106MPA	P	10	6.3	0.6	10	6.0	*
F920J156MAA	A	15	6.3	0.9	8	4.0	*
F920J156MPA	P	15	6.3	0.9	10	6.0	*
F920J226MAA	A	22	6.3	1.4	12	2.8	*
F920J226MPA	P	22	6.3	1.4	20	5.0	*
F920J336MAA	A	33	6.3	2.1	12	2.8	*
F920J336MBA	B	33	6.3	2.1	12	1.7	*
F920J476MAA	A	47	6.3	3.0	18	2.8	±15
F920J476MBA	B	47	6.3	3.0	12	1.7	*
F920J107MAALZT	A	100	6.3	63.0	40	3.0	±20
F920J107MBA	B	100	6.3	6.3	20	1.3	±15
10 Volt							
F921A105MPA	P	1	10	0.5	8	12.0	*
F921A155MPA	P	1.5	10	0.5	8	12.0	*
F921A225MPA	P	2.2	10	0.5	8	12.0	*
F921A335MAA	A	3.3	10	0.5	6	7.0	*
F921A335MPA	P	3.3	10	0.5	8	12.0	*
F921A475MAA	A	4.7	10	0.5	6	4.0	*
F921A475MPA	P	4.7	10	0.5	8	6.0	*
F921A685MAA	A	6.8	10	0.7	6	4.0	*
F921A685MPA	P	6.8	10	0.7	8	6.0	*
F921A106MAA	A	10	10	1.0	8	4.0	*

AVX Part No.	Case Size	Capacitance (µF)	Rated Voltage (V)	DCL (µA)	DF @ 120Hz (%)	ESR @ 100kHz (Ω)	*1 ΔC/C (%)
F921A106MPA	P	10	10	1.0	14	6.0	*
F921A156MAA	A	15	10	1.5	8	4.0	*
F921A226MAA	A	22	10	2.2	14	4.0	±15
F921A226MBA	B	22	10	2.2	8	1.9	*
F921A336MBA	B	33	10	3.3	12	1.9	*
F921A476MBA	B	47	10	4.7	18	1.9	±15
16 Volt							
F921C474MPA	P	0.47	16	0.5	8	20.0	*
F921C684MPA	P	0.68	16	0.5	8	12.0	*
F921C105MPA	P	1	16	0.5	8	12.0	*
F921C155MPA	P	1.5	16	0.5	8	12.0	*
F921C225MAA	A	2.2	16	0.5	6	7.0	*
F921C225MPA	P	2.2	16	0.5	8	12.0	*
F921C335MAA	A	3.3	16	0.5	6	7.0	*
F921C475MAA	A	4.7	16	0.8	6	7.0	*
F921C475MBA	B	4.7	16	0.8	6	3.0	*
F921C685MBA	B	6.8	16	1.1	6	3.0	*
F921C106MAA	A	10	16	1.6	8	7.0	±15
F921C106MBA	B	10	16	1.6	6	2.0	*
F921C226MBA	B	22	16	3.5	12	2.0	±15
20 Volt							
F921D474MAA	A	0.47	20	0.5	4	10.0	*
F921D474MPA	P	0.47	20	0.5	8	20.0	*
F921D684MAA	A	0.68	20	0.5	4	10.0	*
F921D105MAA	A	1	20	0.5	4	10.0	*
F921D105MPA	P	1	20	0.5	8	20.0	*
F921D155MAA	A	1.5	20	0.5	6	7.4	*
F921D225MAA	A	2.2	20	0.5	6	7.0	*
F921D475MAA	A	4.7	20	0.9	10	7.0	±10
F921D475MBA	B	4.7	20	0.9	6	3.0	*
F921D106MBA	B	10	20	2.0	8	3.0	±10
25 Volt							
F921E105MAA	A	1	25	0.5	6	10.0	*
F921E105MPA	P	1	25	0.5	8	20.0	*
F921E225MAA	A	2.2	25	0.6	8	10.0	±15
F921E225MBA	B	2.2	25	0.6	6	4.0	*
F921E475MAA	A	4.7	25	1.2	10	7.0	±10
F921E475MBA	B	4.7	25	1.2	6	3.0	*
35 Volt							
F921V224MAA	A	0.22	35	0.5	4	10.0	*
F921V334MAA	A	0.33	35	0.5	4	10.0	*
F921V474MAA	A	0.47	35	0.5	4	10.0	*
F921V105MAA	A	1	35	0.5	6	10.0	*
F921V225MBA	B	2.2	35	0.8	6	4.0	±10
F921V335MBA	B	3.3	35	1.2	10	4.0	±10

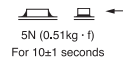
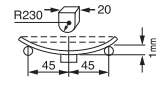
* In case of capacitance tolerance ± 10% type, "K" will be put at 9th digit of type numbering system

1: ΔC/C Marked ""

Item	P Case (%)	A, B Case (%)
Damp Heat	±20	±10
Temperature cycles	±10	±5
Resistance soldering heat	±10	±5
Surge	±10	±5
Endurance	±10	±10

We can consider the type of compliance to AEC-Q200.
Please contact to your local AVX sales office
when these series are being designed in your application.

QUALIFICATION TABLE

TEST	F92 series (Temperature range -55°C to +125°C)	
	Condition	
Damp Heat (Steady State)	P Case	A, B Case
	At 40°C, 90 to 95% R.H., 500 hours (No voltage applied)	
Temperature Cycles	Capacitance Change Refer to page 46 (*1)	Refer to page 46 (*1)
	Dissipation Factor 150% or less than the initial specified value	Initial specified value or less
Resistance to Soldering Heat	Leakage Current Initial specified value or less	Initial specified value or less
	-55°C / +125°C, 30 minutes each, 5 cycles	
Surge	Capacitance Change Refer to page 46 (*1)	Refer to page 46 (*1)
	Dissipation Factor 150% or less than the initial specified value	Initial specified value or less
Endurance	Leakage Current Initial specified value or less	Initial specified value or less
	10 seconds reflow at 260°C, 5 seconds immersion at 260°C.	
Shear Test	Capacitance Change Refer to page 46 (*1)	Refer to page 46 (*1)
	Dissipation Factor 150% or less than the initial specified value	Initial specified value or less
Terminal Strength	Leakage Current Initial specified value or less	Initial specified value or less
	After application of surge voltage in series with a 33Ω (For "P" case: 1kΩ) resistor at the rate of 30 seconds ON, 30 seconds OFF, for 1000 successive test cycles at 85°C, capacitors shall meet the characteristic requirements in the table above.	
Terminal Strength	Capacitance Change Refer to page 46 (*1)	Refer to page 46 (*1)
	Dissipation Factor 150% or less than the initial specified value	Initial specified value or less
Terminal Strength	Leakage Current Initial specified value or less	Initial specified value or less
	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 shall meet the characteristic requirements in the table above.	
Terminal Strength	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 a 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 capacitor, the pressure strength is applied with a specified jig at the center of 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 45 45 1mm</p>	