F92 Series

Resin-Molded Chip, Low Profile J-Lead

LEAD-FREE

LEAD-FREE COMPATIBLE COMPONENT

RoHS COMPLIANT

FEATURES

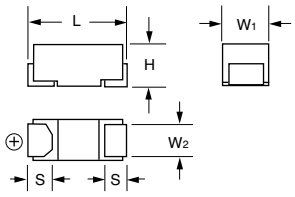
- Compliant to the RoHS directive (2002/95/EC)
- SMD J-lead
- Low profile case sizes

APPLICATIONS

- Handheld electronics
- USB accessories

CASE DIMENSIONS: millimeters (inches)

Code	L	W_1	W_2	H	S
A	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	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	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

P CASE

*Rated Capacitance Code

Rated Voltage Code

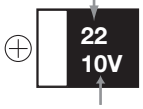
A CASE

Rated Capacitance Code

Rated Voltage Code

B CASE

Rated Capacitance (µF)



Rated Voltage (V)

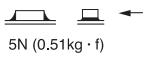
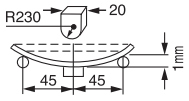
4V	G	16V	C	35V	V
6.3V	J	20V	D		
10V	A	25V	E		

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

HOW TO ORDER

F92	0J	106	M	P	□
Type	**Rated Voltage**	**Capacitance Code** pF code: 1st two digits represent significant figures, 3rd digit represents multiplier (number of zeros to follow)	**Tolerance** K = ±10% M = ±20%	**Case Size** See table above	**Packaging** See page 163 for details

TECHNICAL SPECIFICATIONS

Item	Performance Characteristics	
	P Case	A, B Case
Category Temperature Range	-55 to +125°C (Rated temperature: +85°C)	
Capacitance Tolerance	±20%, ±10% (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	+20% Max. (at +125°C) +15% Max. (at +85°C) -15% Max. (at -55°C)	+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., 500 hours (No voltage applied)	
	Capacitance Change... Refer to next page (*1) Dissipation Factor... 150% or less than the initial specified value Leakage Current... Initial specified value or less	Refer to next page (*1) Initial specified value or less Initial specified value or less
Temperature Cycles	-55°C / +125°C 30 minutes each 5 cycles	
	Capacitance Change... Refer to next page (*1) Dissipation Factor... 150% or less than the initial specified value Leakage Current... Initial specified value or less	Refer to next page (*1) Initial specified value or less Initial specified value or less
Resistance to Soldering Heat	10 seconds reflow at 260°C, 5 seconds immersion at 260°C	
	Capacitance Change... Refer to next page (*1) Dissipation Factor... 150% or less than the initial specified value Leakage Current... Initial specified value or less	Refer to next page (*1) Initial specified value or less Initial specified value or less
Surge	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 table below.	
	Capacitance Change... Refer to next page (*1) Dissipation Factor... 150% or less than the initial specified value Leakage Current... Initial specified value or less	Refer to next page (*1) Initial specified value or less 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 shall meet the characteristic requirements table below.	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 table below.
	Capacitance Change... Refer to next page (*1) Dissipation Factor...150% or less than the initial specified value Leakage Current... Initial specified value or less	Capacitance Change... Refer to next page (*1) 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 a substrate, there shall be found neither exfoliation nor its sign at the terminal electrode.	 5N (0.51kg · f) For 10 ± 1 seconds
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.	 R230 20 45 45 1mm

F92 Series

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CAPACITANCE AND RATED VOLTAGE, V_R (VOLTAGE CODE) 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	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							
100	107	A/B	A*/B						
150	157	B							
220	227	B*							

Available Ratings

*Codes under development – subject to change

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 Number	Case Size	Cap (µF)	Rated Voltage (V)	Leakage Current (µA)	Disspation Factor (%@120Hz)	ESR (Ω@100kHz)	*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	*
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	*
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

*1: ΔC/C Marked "∗"

Item	P Case (%)	A, B Case (%)
Damp Heat	±20	±10
Tempereature 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.

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