F92 Series

Resin-Molded Chip, Low Profile J-Lead



FEATURES

- Compliant to the RoHS3 directive 2015/863/EU
- SMD J-Lead
- Low Profile Case Sizes
- 100% Surge Current Tested

APPLICATIONS

- Handheld Electronics
- USB Accessories

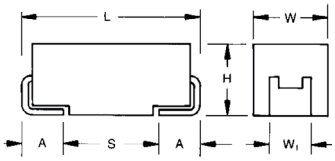
LEAD-FREE
LEAD-FREE COMPATIBLE COMPONENT

RoHS COMPLIANT

CASE DIMENSIONS: millimeters (inches)

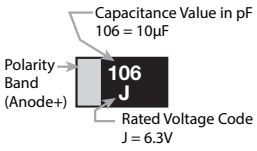
Code	EIA Code	EIA Metric	L ± 0.20 (0.008)	W+0.20 (0.008) -0.10 (0.004)	H Max.	W_1 ±0.20 (0.008)	A+0.30 (0.012) -0.20 (0.008)	S Min.
P	0805	2012-12	2.05 (0.081)	1.30 (0.051)	1.20 (0.047)	1.00 ± 0.10 (0.039 ± 0.004)	0.50 (0.020)	0.85 (0.033)
A	1206	3216-12	3.20 (0.126)	1.60 (0.063)	1.20 (0.047)	1.20 (0.047)	0.80 (0.031)	1.10 (0.043)
B	1210	3528-12	3.50 (0.138)	2.80 (0.110)	1.20 (0.047)	2.20 (0.087)	0.80 (0.031)	1.40 (0.055)

W_1 dimension applies to the termination width for a dimensional area only



MARKING

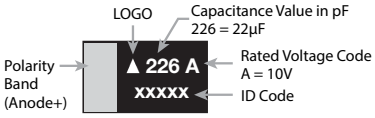
P CASE



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.

A, B CASE



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 Tape & Reel Packaging Section

TECHNICAL SPECIFICATIONS

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	**P Case**	**A, B Case**
	+20% Max. at +125ºC	+15% Max. at +125°C
	+15% Max. at +85ºC	+10% Max. at +85°C
	-15% Max. at -55ºC	-10% Max. at -55°C

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CAPACITANCE AND RATED VOLTAGE RANGE (LETTER DENOTES CASE SIZE)

Capacitance		Rated Voltage							*Cap
µF	Code	4V (0G)	6.3V (0J)	10V (1A)	16V (1C)	20V (1D)	25V (1E)	35V (1V)	Code
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	P	A	A
1.5	155			P		A			E
2.2	225		P	P	A/P	B	A/B	B	J
3.3	335	P	P	A/P	A				N
4.7	475	P	P	A/P	A/B		B		S
6.8	685	P	P	P	B				w
10	106	P	A/P	A/P(M)	B				a
15	156	P	P(M)	A					e
22	226	A	A/P(M)	B					J
33	336		B						n
47	476	B	B						s
68	686								w
100	107	A(M)/B							A

Released ratings (M tolerance only)
**Rated temperature 60°C only. Please contact KYOCERA AVX when you need detail spec.
Please contact to your local KYOCERA AVX sales office when these series are being designed in your application.

RATINGS & PART NUMBER REFERENCE

Part Number	Case Size	Capacitance (µF)	Rated Voltage (V)	DCL (µA)	DF @ 120Hz (%)	ESR @ 100kHz (Ω)	100kHz RMS Current (mA)				*1 ΔC/C (%)	MSL
							25°C	60°C	85°C	125°C		
4 Volt												
F920G335#PA	P	3.3	4	0.5	8	12.0	50	–	45	20	*	1
F920G475#PA	P	4.7	4	0.5	8	6.0	71	–	64	28	*	1
F920G685#PA	P	6.8	4	0.5	10	6.0	71	–	64	28	*	1
F920G106#PA	P	10	4	0.5	10	6.0	71	–	64	28	*	1
F920G156#PA	P	15	4	0.6	10	5.0	77	–	70	31	*	1
F920G226#AA	A	22	4	0.9	12	2.8	146	–	132	59	*	1
F920G476#BA	B	47	4	1.9	12	1.7	210	–	189	84	*	1
F920G107MAA	A	100	4	4.0	30	2.8	146	–	132	59	±15	1
F920G107#BA	B	100	4	4.0	18	1.3	240	–	216	96	*	1
6.3 Volt												
F920J225#PA	P	2.2	6.3	0.5	8	12.0	50	–	45	20	*	1
F920J335#PA	P	3.3	6.3	0.5	8	12.0	50	–	45	20	*	1
F920J475#PA	P	4.7	6.3	0.5	8	6.0	71	–	64	28	*	1
F920J685#PA	P	6.8	6.3	0.5	10	6.0	71	–	64	28	*	1
F920J106#AA	A	10	6.3	0.6	8	4.0	122	–	110	49	*	1
F920J106#PA	P	10	6.3	0.6	10	6.0	71	–	64	28	*	1
F920J156MPA	P	15	6.3	0.9	10	6.0	71	–	64	28	*	1
F920J226#AA	A	22	6.3	1.4	12	2.8	146	–	132	59	*	1
F920J226MPA	P	22	6.3	1.4	20	5.0	77	–	70	31	*	1
F920J336#BA	B	33	6.3	2.1	12	1.7	210	–	189	84	*	1
F920J476#BA	B	47	6.3	3.0	12	1.7	210	–	189	84	*	3
10 Volt												
F921A105#PA	P	1	10	0.5	8	12.0	50	–	45	20	*	1
F921A155#PA	P	1.5	10	0.5	8	12.0	50	–	45	20	*	1
F921A225#PA	P	2.2	10	0.5	8	12.0	50	–	45	20	*	1
F921A335#AA	A	3.3	10	0.5	6	7.0	93	–	83	37	*	1
F921A335#PA	P	3.3	10	0.5	8	12.0	50	–	45	20	*	1
F921A475#AA	A	4.7	10	0.5	6	4.0	122	–	110	49	*	1
F921A475#PA	P	4.7	10	0.5	8	6.0	71	–	64	28	*	1
F921A685#PA	P	6.8	10	0.7	8	6.0	71	–	64	28	*	1
F921A106#AA	A	10	10	1.0	8	4.0	122	–	110	49	*	1
F921A106MPA	P	10	10	1.0	14	6.0	71	–	64	28	*	1
F921A156#AA	A	15	10	1.5	8	4.0	122	–	110	49	*	1
F921A226#BA	B	22	10	2.2	8	1.9	199	–	179	79	*	3
16 Volt												
F921C474#PA	P	0.47	16	0.5	8	20.0	39	–	35	15	*	1

RATINGS & PART NUMBER REFERENCE

Part Number	Case Size	Capacitance (µF)	Rated Voltage (V)	DCL (µA)	DF @ 120Hz (%)	ESR @ 100kHz (Ω)	100kHz RMS Current (mA)				*1 ΔC/C (%)	MSL
							25°C	60°C	85°C	125°C		
F921C684#PA	P	0.68	16	0.5	8	12.0	50	–	45	20	*	1
F921C105#PA	P	1	16	0.5	8	12.0	50	–	45	20	*	1
F921C225#AA	A	2.2	16	0.5	6	7.0	93	–	83	37	*	1
F921C225#PA	P	2.2	16	0.5	8	12.0	50	–	45	20	*	1
F921C335#AA	A	3.3	16	0.5	6	7.0	93	–	83	37	*	1
F921C475#AA	A	4.7	16	0.8	6	7.0	93	–	83	37	*	1
F921C475#BA	B	4.7	16	0.8	6	3.0	158	–	142	63	*	1
F921C685#BA	B	6.8	16	1.1	6	3.0	158	–	142	63	*	1
F921C106#BA	B	10	16	1.6	6	2.0	194	–	174	77	*	1
20 Volt												
F921D474#AA	A	0.47	20	0.5	4	10.0	77	–	70	31	*	1
F921D474#PA	P	0.47	20	0.5	8	20.0	39	–	35	15	*	1
F921D684#AA	A	0.68	20	0.5	4	10.0	77	–	70	31	*	1
F921D105#AA	A	1	20	0.5	4	10.0	77	–	70	31	*	1
F921D105#PA	P	1	20	0.5	8	20.0	39	–	35	15	*	1
F921D155#AA	A	1.5	20	0.5	6	7.4	90	–	81	36	*	1
F921D225#BA	B	2.2	20	0.5	6	6	115	–	104	46	*	1
25 Volt												
F921E105#PA	P	1	25	0.5	8	20.0	39	–	35	15	*	1
F921E225#AA	A	2.2	25	0.6	8	10.0	77	–	70	31	±15	1
F921E225#BA	B	2.2	25	0.6	6	4.0	137	–	123	55	*	1
F921E475#BA	B	4.7	25	1.2	6	3.0	158	–	142	63	*	1
35 Volt												
F921V224#AA	A	0.22	35	0.5	4	10.0	77	–	70	31	*	1
F921V334#AA	A	0.33	35	0.5	4	10.0	77	–	70	31	*	1
F921V474#AA	A	0.47	35	0.5	4	10.0	77	–	70	31	*	1
F921V105#AA	A	1	35	0.5	6	10.0	77	–	70	31	*	1
F921V225#BA	B	2.2	35	0.8	6	4.0	137	–	123	55	±10	1

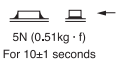
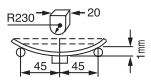
1: ΔC/C Marked ""

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

#: "M" for ±20% tolerance, "K" for ± 10% tolerance. When you need K tolerance for the part numbers which have M tolerance only, please contact to your local KYOCERA AVX sales office.

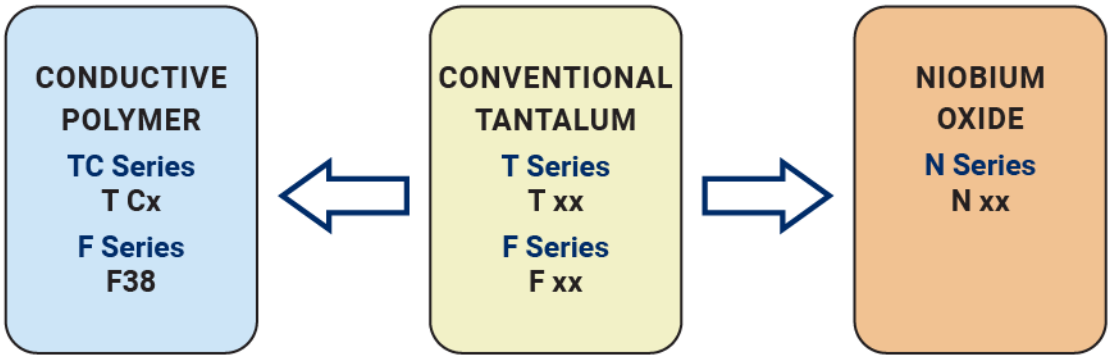
Moisture Sensitivity Level (MSL) is defined according to J-STD-020.

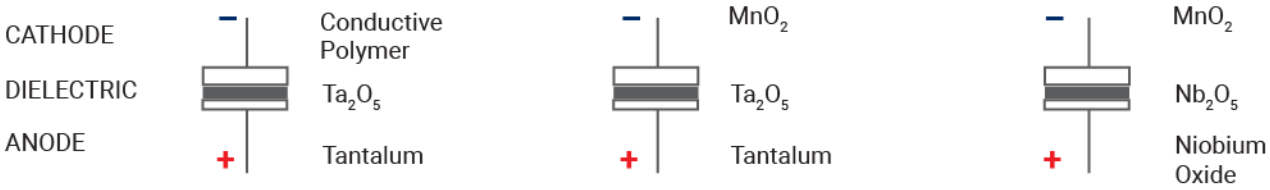
QUALIFICATION TABLE

TEST	F92 series (Temperature range -55°C to +125°C) Condition	
	P Case	**A, B Case**
Damp Heat (Steady State)	At 40°C, 90 to 95% R.H., 500 hours (No voltage applied)	
	Capacitance Change ..... Refer to the table above (*1) Dissipation Factor..... 150% or less than the initial specified value Leakage Current ..... Initial specified value or less	Refer to the table above (*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 the table above (*1) Dissipation Factor ..... 150% or less than the initial specified value Leakage Current ..... Initial specified value or less	Refer to the table above (*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 the table above (*1) Dissipation Factor ..... 150% or less than the initial specified value Leakage Current ..... Initial specified value or less	Refer to the table above (*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 in the table above.	
	Capacitance Change ..... Refer to the table above (*1) Dissipation Factor ..... 150% or less than the initial specified value Leakage Current ..... Initial specified value or less	Refer to the table above (*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 in the table above.	
	Capacitance Change ..... Refer to the table above (*1) Dissipation Factor ..... 150% or less than the initial specified value Leakage Current ..... Initial specified value or less	Refer to the table above (*1) Initial specified value or less 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. 	
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. 	

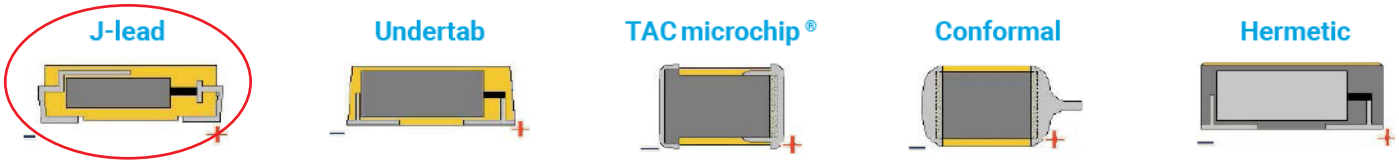
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SOLID ELECTROLYTIC CAPACITOR ROADMAP

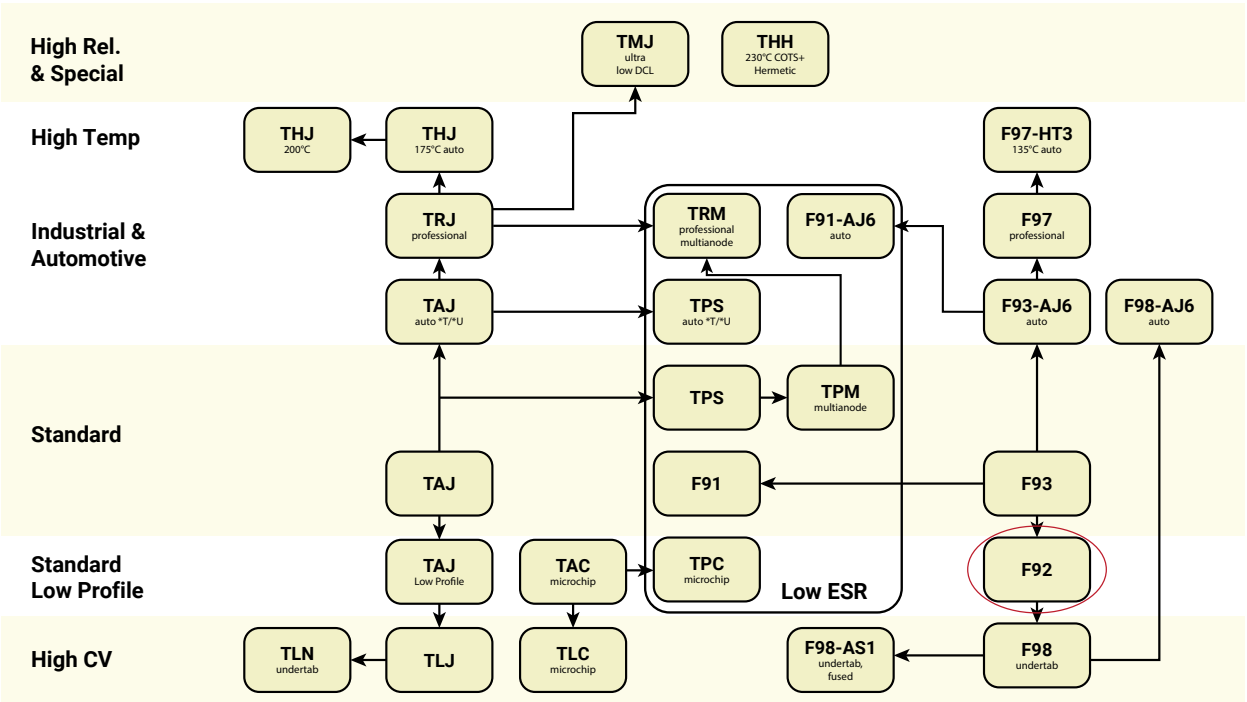




FIVE CAPACITOR CONSTRUCTION STYLES



SERIES LINE UP: CONVENTIONAL SMD MnO_2



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Global Electronic Components Distributor

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AVX:

109159002101916 04025A820FAT2A 06035A100KAT2A F931A226MBA TLJR476M006R3200
04025G103ZAT2A 06031A120JAT4A 06031A330FAT2A 06035C151KAT2A AEA1010471M025R
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