

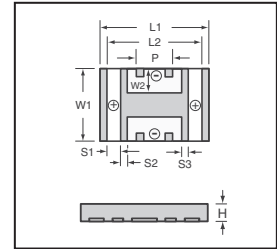
# nichicon Decoupling Capacitors for High Frequency



**Features:**

- Higher Capacitance • Low ESR, High Ripple Current
- Resin-molded chip • Designed for surface mounting on high density PC boards • Load life of 1000 hours at 105°C

Case Code	Dimensions in mm								
	L1	L2	W1	W2	H	S1	S2	S3	P
D	8.5 ±0.2	7.3 ±0.2	5.3 ±0.2	1.3 ±0.3	2.0Max.	0.9 ±0.2	0.6 ±0.2	0.5 ±0.2	3.3 ±0.2
F	16.7 ±0.2	15.6 ±0.2	12.1 ±0.2	3.3 ±0.2	2.5Max.	1.5 ±0.1	1.3 ±0.1	1.5 ±0.2	7.0 ±0.2



Rated Voltage	Cap. (µF)	Capacitance Tolerance	Case Code	Leakage Current (µA)	Dissipation Factor (% @120Hz)	E.S.R. (mΩ@100kHz)	Digi-Key Part No.	Cut Tape Price Each			Tape & Reel Pricing 100	Nichicon Part No.
								5	10	25		
2.5	220	±20%	D	55	5	20.0	493-3120-1-ND	3.88	3.20	2.97	145.97	F110E227MDL
	600	±20%	F	150	10	5.0	493-3116-1-ND	8.21	6.76	6.28	308.88	F110E607MFK
	1200	±20%	F	300	10	5.0	493-3117-1-ND	8.56	7.05	6.55	322.30	F110E128MFK
4	100	±20%	D	40	5	20.0	493-3121-1-ND	3.88	3.20	2.97	145.97	F110G107MDL
	800	±20%	F	320	10	5.0	493-3118-1-ND	8.21	6.76	6.28	308.88	F110G807MFK
	47	±20%	D	30	5	20.0	493-3122-1-ND	3.88	3.20	2.97	145.97	F110J476MDL
6.3	600	±20%	F	378	10	5.0	493-3119-1-ND	8.21	6.76	6.28	308.88	F110J607MFK

† For Tape and Reel part number, change 1-ND to 2-ND.

## Solid Tantalum Electrolytic Chip Capacitors (SMT)



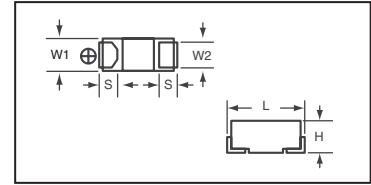
**Features:**

- F93 - Standard Series** • General purpose rectangular resin molded chip • Low ESR/impedance, excellent high frequency characteristics • Excellent humidity resistance
- F91 - Low ESR Series** • Rectangular resin molded chip • Low ESR
- F92 - Compact Series** • Low profile, rectangular resin molded chip • Excellent high frequency characteristics • Excellent humidity resistance
- F97 - High Reliability Series** • Rectangular resin molded chip • Soldering heat resistance • Superior humidity and environment resistance • High reliability

**Specification:**

- Operating Temperature Range: -55°C - 125°C

Case Code	Dimensions in mm				
	L	W1	W2	H	S
A (F93 / 97) A (F92)	3.2 ±0.2	1.6 ±0.2	1.2 ±0.1	1.6 ±0.1	0.8 ±0.2
B	3.5 ±0.2	2.8 ±0.2	2.2 ±0.1	1.9 ±0.2	0.8 ±0.2
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
P	2.0 ±0.2	1.25 ±0.1	0.9 ±0.1	1.1 ±0.1	0.5 ±0.2



Rated Voltage	Cap. (µF)	Capacitance Tolerance	Case Size	Leakage Current (µA)	Dissipation Factor (% @120Hz)	E.S.R. (Ω@100kHz)	Digi-Key Part No.	Cut Tape Pricing		Digi-Key Part No.	Tape and Reel Pricing		Nichicon Part No.
								10	100		Qty.	Pricing	
<b>F93 - Standard Series</b>													
6.3	3.3	±20%	A	0.5	6	4.5	493-2346-1-ND	1.55	13.26	493-2346-2-ND	2,000	63.00/M	F930J335MAA
	4.7	±20%	A	0.5	6	4.0	493-2347-1-ND	1.59	13.65	493-2347-2-ND	2,000	65.00/M	F930J475MAA
	6.8	±20%	A	0.5	6	3.5	493-2349-1-ND	1.64	14.04	493-2349-2-ND	2,000	67.00/M	F930J685MAA
	10	±20%	A	0.6	6	3.0	493-2340-1-ND	1.64	14.04	493-2340-2-ND	2,000	67.00/M	F930J106MAA
	15	±20%	A	0.9	6	2.9	493-2341-1-ND	1.79	15.30	493-2341-2-ND	2,000	73.00/M	F930J156MAA
	15	±20%	B	0.9	6	2.0	493-2342-1-ND	2.00	17.16	493-2342-2-ND	2,000	82.00/M	F930J156MBA
	22	±20%	A	1.4	8	2.5	493-2343-1-ND	1.87	15.99	493-2343-2-ND	2,000	75.00/M	F930J226MAA
	22	±20%	A	1.4	8	1.9	493-2344-1-ND	2.14	18.33	493-2344-2-ND	2,000	87.00/M	F930J226MBA
	47	±20%	B	3.0	8	1.0	493-2348-1-ND	2.78	23.79	493-2348-2-ND	2,000	107.00/M	F930J476MBA
	68	±20%	C	4.3	8	0.8	493-2350-1-ND	4.50	38.58	493-2350-2-ND	500	115.50	F930J686MCC
220	±20%	N	13.9	10	0.5	493-2345-1-ND	8.32	71.28	493-2345-2-ND	500	202.00	F930J227MNC	
10	2.2	±20%	A	0.5	6	5.0	493-2356-1-ND	1.55	13.26	493-2356-2-ND	2,000	63.00/M	F931A225MAA
	3.3	±20%	A	0.5	6	4.5	493-2358-1-ND	1.55	13.26	493-2358-2-ND	2,000	63.00/M	F931A335MAA
	4.7	±20%	A	0.5	6	4.0	493-2361-1-ND	1.47	12.60	493-2361-2-ND	2,000	60.00/M	F931A475MAA
	10	±20%	A	1.0	6	3.0	493-2351-1-ND	1.40	12.00	493-2351-2-ND	2,000	57.00/M	F931A106MAA
	10	±20%	B	1.0	6	2.1	493-2352-1-ND	1.47	12.60	493-2352-2-ND	2,000	82.00/M	F931A106MBA
	15	±20%	B	1.5	6	2.0	493-2354-1-ND	2.00	16.33	493-2354-2-ND	2,000	87.00/M	F931A156MBA
	22	±20%	B	2.2	8	1.9	493-2357-1-ND	2.10	18.00	493-2357-2-ND	2,000	86.00/M	F931A226MBA
	33	±20%	B	3.3	8	1.4	493-2359-1-ND	2.91	24.93	493-2359-2-ND	2,000	112.00/M	F931A336MBA
	33	±20%	C	3.3	6	1.1	493-2360-1-ND	4.23	36.24	493-2360-2-ND	500	108.50	F931A336MCC
	47	±20%	C	4.7	8	0.9	493-2362-1-ND	4.50	38.58	493-2362-2-ND	500	115.50	F931A476MCC
16	6.8	±20%	N	6.8	6	0.6	493-2363-1-ND	6.41	54.96	493-2363-2-ND	500	155.50	F931A86MNC
	100	±20%	N	10.0	10	0.6	493-2363-1-ND	7.07	60.60	493-2363-2-ND	500	171.50	F931A107MNC
	150	±20%	N	15.0	10	0.6	493-2365-1-ND	8.43	72.24	493-2365-2-ND	500	204.50	F931A157MNC
	1	±20%	A	0.5	4	7.5	493-2364-1-ND	1.55	13.26	493-2364-2-ND	2,000	63.00/M	F931C105MAA
	1.5	±20%	A	0.5	6	6.0	493-2366-1-ND	1.55	13.26	493-2366-2-ND	2,000	63.00/M	F931C155MAA
	2.2	±20%	A	0.5	6	5.0	493-2368-1-ND	1.47	12.60	493-2368-2-ND	2,000	60.00/M	F931C225MAA
	3.3	±20%	A	0.5	6	4.5	493-2370-1-ND	1.47	12.60	493-2370-2-ND	2,000	60.00/M	F931C335MAA
	4.7	±20%	A	0.8	6	4.0	493-2372-1-ND	1.47	12.60	493-2372-2-ND	2,000	60.00/M	F931C475MAA
	6.8	±20%	A	1.1	6	3.5	493-2374-1-ND	1.68	14.43	493-2374-2-ND	2,000	69.00/M	F931C685MAA
	6.8	±20%	B	1.1	6	2.5	493-2375-1-ND	2.00	17.16	493-2375-2-ND	2,000	82.00/M	F931C685MBA
20	10	±20%	B	1.6	6	2.0	493-2365-1-ND	2.09	17.94	493-2365-2-ND	2,000	85.00/M	F931C106MBA
	15	±20%	B	2.4	8	2.0	493-2367-1-ND	2.28	19.50	493-2367-2-ND	2,000	93.00/M	F931C156MBA
	22	±20%	C	3.5	6	1.1	493-2369-1-ND	4.23	36.24	493-2369-2-ND	500	108.50	F931C226MCC
	33	±20%	N	5.3	8	1.1	493-2371-1-ND	4.50	38.58	493-2371-2-ND	500	115.50	F931C336MCC
	47	±20%	N	7.5	8	0.7	493-2373-1-ND	6.09	52.23	493-2373-2-ND	500	148.00	F931C476MCC
	68	±20%	N	10.9	8	0.6	493-2376-1-ND	7.19	61.59	493-2376-2-ND	500	174.50	F931C686MNC
	1.5	±20%	A	0.5	6	6.3	493-2378-1-ND	1.55	13.26	493-2378-2-ND	2,000	63.00/M	F931D155MAA
	2.2	±20%	A	0.5	6	5.0	493-2380-1-ND	1.47	12.60	493-2380-2-ND	2,000	60.00/M	F931D225MAA
	3.3	±20%	A	0.7	6	4.5	493-2382-1-ND	1.91	16.38	493-2382-2-ND	2,000	78.00/M	F931D335MAA
	4.7	±20%	A	0.9	6	4.0	493-2384-1-ND	2.42	20.70	493-2384-2-ND	2,000	98.00/M	F931D475MAA
25	4.7	±20%	B	0.9	6	2.8	493-2385-1-ND	2.42	20.70	493-2385-2-ND	2,000	98.00/M	F931D475MBA
	6.8	±20%	B	1.4	6	2.5	493-2386-1-ND	2.55	21.84	493-2386-2-ND	2,000	98.00/M	F931D685MBA
	10	±20%	B	2.0	6	2.1	493-2377-1-ND	3.34	28.62	493-2377-2-ND	2,000	129.00/M	F931D106MBA
	15	±20%	C	3.0	6	1.2	493-2379-1-ND	4.23	36.24	493-2379-2-ND	500	108.50	F931D156MCC
	22	±20%	C	4.4	8	1.1	493-2381-1-ND	4.50	38.58	493-2381-2-ND	500	115.50	F931D226MCC
	33	±20%	N	6.6	8	0.7	493-2383-1-ND	6.41	54.96	493-2383-2-ND	500	155.50	F931D336MNC
	.68	±20%	A	0.5	4	7.6	493-2394-1-ND	1.55	13.26	493-2394-2-ND	2,000	63.00/M	F931E684MAA
	1	±20%	A	0.5	4	7.5	493-2387-1-ND	1.55	13.26	493-2387-2-ND	2,000	63.00/M	F931E105MAA
	1.5	±20%	A	0.5	6	6.7	493-2389-1-ND	1.59	13.65	493-2389-2-ND	2,000	65.00/M	F931E155MAA
	2.2	±20%	A	0.6	6	6.3	493-2390-1-ND	1.68	14.43	493-2390-2-ND	2,000	69.00/M	F931E225MAA
3.3	±20%	B	0.8	6	3.1	493-2392-1-ND	2.55	21.84	493-2392-2-ND	2,000	98.00/M	F931E335MBA	
35	4.7	±20%	B	1.2	6	2.8	493-2393-1-ND	2.77	23.92	493-2393-2-ND	2,000	103.00/M	F931E475MBA
	6.8	±20%	C	1.7	6	1.8	493-2395-1-ND	3.91	33.51	493-2395-2-ND	500	100.50	F931E685MCC
	10	±20%	C	2.5	6	1.5	493-2388-1-ND	4.23	36.24	493-2388-2-ND	500	108.50	F931E106MCC
	22	±20%	N	5.5	6	0.7	493-2391-1-ND	6.28	53.79	493-2391-2-ND	500	152.50	F931E226MNC
	.47	±20%	A	0.5	4	10.0	493-2402-1-ND	1.55	13.26	493-2402-2-ND	2,000	63.00/M	F931V474MAA
	.68	±20%	A	0.5	4	7.6	493-2404-1-ND	1.55	13.26	493-2404-2-ND	2,000	63.00/M	F931V684MAA
60	1	±20%	A	0.5	4	7.5	493-2396-1-ND	1.59	13.65	493-2396-2-ND	2,000	65.00/M	F931V105MAA
	1.5	±20%	A	0.5	6	7.5	493-2398-1-ND	1.47	12.60	493-2398-2-ND			