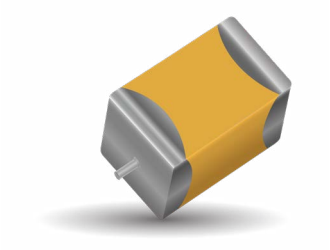
THE DATASHEET OF

F950J227MBAAQ2

F95 Series

Standard Conformal Coated Chip



FEATURES

- Compliant to the RoHS3 directive 2015/863/EU
- For High Frequency
- SMD Conformal
- Small and High CV
- 100% Surge Current Tested

APPLICATIONS

- Smartphone
- Tablet PC
- Wireless Module
- E-book

LEAD-FREE

LEAD-FREE COMPATIBLE COMPONENT

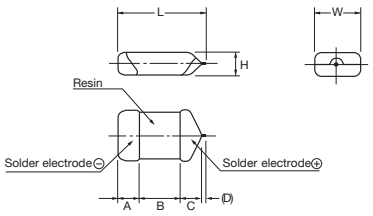
RoHS COMPLIANT

CASE DIMENSIONS:

millimeters (inches)

Code	EIA Code	EIA Metric	L	W	H	A	B	C	D*
A	1207	32 17-16	3.20±0.30 (0.126±0.012)	1.70±0.30 (0.067±0.012)	1.40±0.20 (0.055±0.008)	0.80±0.30 (0.031±0.012)	1.20±0.30 (0.047±0.012)	0.80±0.30 (0.031±0.012)	0.20 (0.008)
B	1411	3528-20	3.50±0.20 (0.138±0.008)	2.80±0.20 (0.110±0.008)	1.80±0.20 (0.071±0.008)	0.80±0.30 (0.031±0.012)	1.20±0.30 (0.047±0.012)	1.10±0.30 (0.043±0.012)	0.20 (0.008)
P	0905	2212-12	2.20±0.30 (0.087±0.012)	1.25±0.30 (0.049±0.012)	1.00±0.20 (0.039±0.008)	0.60±0.30 (0.024±0.012)	0.80±0.30 (0.031±0.012)	0.80±0.30 (0.031±0.012)	0.20 (0.008)
Q	1306	3216-10	3.20±0.20 (0.126±0.008)	1.60±0.20 (0.063±0.008)	0.80±0.20 (0.031±0.008)	0.80±0.20 (0.031±0.008)	1.20±0.20 (0.047±0.008)	0.80±0.20 (0.031±0.008)	0.20 (0.008)
R	0905	2212-065	2.20±0.30 (0.087±0.012)	1.25±0.30 (0.049±0.012)	0.65 max. (0.026 max.)	0.60±0.30 (0.024±0.012)	0.80±0.30 (0.031±0.012)	0.50 min. (0.020 min.)	0.20 (0.008)
S	1306	3216-12	3.20±0.30 (0.126±0.012)	1.60±0.30 (0.063±0.012)	1.00±0.20 (0.039±0.008)	0.80±0.30 (0.031±0.012)	1.20±0.30 (0.047±0.012)	0.80±0.30 (0.031±0.012)	0.20 (0.008)
T	1411	3527-12	3.50±0.20 (0.138±0.008)	2.70±0.20 (0.106±0.008)	1.00±0.20 (0.039±0.008)	0.80±0.20 (0.031±0.008)	1.20±0.20 (0.047±0.008)	1.10±0.20 (0.043±0.012)	0.20 (0.008)

*D dimension only for reference



Single-side electrodes (Both electrodes at bottom side only)

HOW TO ORDER

F95	0G	337	M	A	□	□□□	AQ2 or Q2
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	**Specification Suffix** LZT = Rated temperature 60°C only	**Single Face Electrode**

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:	Refer to next page Provided that: After 1 minute's application of rated voltage, leakage current at 85°C 10 times or less than 20°C specified value.
	After 1 minute's application of rated voltage, leakage current at 125°C 12.5 times or less than 20°C specified value.
Capacitance Change By Temperature	+15% Max. at +125°C
	+10% Max. at +85°C
	-10% Max. at -55°C

F95 Series

Standard Conformal Coated Chip

CAPACITANCE AND RATED VOLTAGE RANGE (LETTER DENOTES CASE SIZE)

Capacitance		Rated Voltage							
µF	Code	4V (0G)	6.3V (0J)	10V (1A)	16V (1C)	20V (1D)	25V (1E)	35V (1V)	50V (1H)
1.0	105						R	P/S	P(M)*
1.5	155								
2.2	225					P	P/R	A	
3.3	335								
4.7	475				P/R	A/S	A/P/Q/S	B	
6.8	685								
10	106			P/R(M)	A/P/Q/S	A/B/S	A/B		
15	156			P	A/S				
22	226		R(M)	A/P(M)/Q/S	A/B/Q/S/T	B			
33	336		P(M)	A/P(M)/Q/S	B/T	B			
47	476		P(M)	A/B/P(M)/S/T	B				
68	686		P(M)	B					
100	107	A/P/S	A/B/P(M)/Q/S/T	A/B/T					
150	157	B/P(M)	B						
220	227	A/B/Q/S/T	B						
330	337	A/B/T	B						
470	477	B	B						
680	687								

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												
F950G107#AAAQ2	A	100	4	4.0	12	0.5	387	–	349	155	*	3
F950G107#PAAQ2	P	100	4	4.0	30	1.2	158	–	142	63	±15	3
F950G107#SAAQ2	S	100	4	4.0	14	0.8	274	–	246	110	*	3
F950G157#BAAQ2	B	150	4	6.0	14	0.4	461	–	415	184	*	3
F950G157MPAAQ2	P	150	4	12.0	31	1.1	165	–	149	66	±20	3
F950G227#AAAQ2	A	220	4	8.8	25	0.8	306	–	276	122	±15	3
F950G227#BAAQ2	B	220	4	8.8	16	0.4	461	–	415	184	*	3
F950G227#QAAQ2	Q	220	4	8.8	30	1.5	173	–	156	69	±20	3
F950G227#SAAQ2	S	220	4	8.8	30	0.8	274	–	246	110	±15	3
F950G227#TAAQ2	T	220	4	8.8	25	0.6	365	–	329	146	*	3
F950G337#AAAQ2	A	330	4	13.2	40	0.8	306	–	276	122	±20	3
F950G337#BAAQ2	B	330	4	13.2	30	0.6	376	–	339	151	±15	3
F950G337#TAAQ2	T	330	4	13.2	40	0.8	316	–	285	126	±20	3
F950G477#BAAQ2	B	470	4	18.8	40	0.4	461	–	415	184	±20	3
6.3 Volt												
F950J336MPAAQ2	P	33	6.3	2.1	14	1.1	165	–	149	66	*	3
F950J226MRAAQ2	R	22	6.3	1.4	20	2.0	112	–	101	45	±20	3
F950J476MPAAQ2	P	47	6.3	3.0	20	1.1	165	–	149	66	±15	3
F950J686MPAAQ2	P	68	6.3	4.3	25	1.2	158	–	142	63	±15	3
F950J107#AAAQ2	A	100	6.3	6.3	14	0.5	387	–	349	155	*	3
F950J107#BAAQ2	B	100	6.3	6.3	14	0.4	461	–	415	184	*	3
F950J107MPAAQ2	P	100	6.3	12.6	35	1.2	158	–	142	63	±20	3
F950J107#QAAQ2	Q	100	6.3	6.3	30	1.1	202	–	182	81	±20	3
F950J107#SAAQ2	S	100	6.3	6.3	20	0.9	258	–	232	103	±15	3
F950J107#TAAQ2	T	100	6.3	6.3	14	0.6	365	–	329	146	*	3
F950J157#BAAQ2	B	150	6.3	9.5	18	0.4	461	–	415	184	*	3
F950J227#BAAQ2	B	220	6.3	13.9	30	0.4	461	–	415	184	*	3
F950J337#BAAQ2	B	330	6.3	20.8	35	0.6	376	–	339	151	±20	3
F950J477#BAAQ2	B	470	6.3	59.2	40	0.5	412	–	371	165	±20	3
10 Volt												
F951A106#PAAQ2	P	10	10	1.0	8	3.0	100	–	90	40	*	3
F951A106MRAAQ2	R	10	10	1.0	18	3.0	91	–	82	37	±20	3
F951A156#PAAQ2	P	15	10	1.5	10	3.0	100	–	90	40	*	3
F951A226#AAAQ2	A	22	10	2.2	6	0.9	289	–	260	115	*	3
F951A226MPAAQ2	P	22	10	2.2	14	3.0	100	–	90	40	*	3
F951A226#QAAQ2	Q	22	10	2.2	10	2.0	150	–	135	60	*	3
F951A226#SAAQ2	S	22	10	2.2	10	1.1	234	–	210	93	*	3
F951A336#AAAQ2	A	33	10	3.3	10	0.8	306	–	276	122	*	3
F951A336MPAAQ2	P	33	10	3.3	20	3.0	100	–	90	40	±15	3
F951A336#QAAQ2	Q	33	10	3.3	18	3.0	122	–	110	49	±15	3
F951A336#SAAQ2	S	33	10	3.3	10	1.1	234	–	210	93	*	3
F951A476#AAAQ2	A	47	10	4.7	10	0.8	306	–	276	122	*	3

F95 Series

Standard Conformal Coated Chip

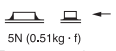
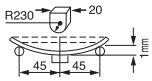
RATINGS & PART NUMBER REFERENCE

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		
F951A476#BAAQ2	B	47	10	4.7	8	0.4	461	–	415	184	*	3
F951A476MPAAQ2	P	47	10	4.7	30	3.0	100	–	90	40	±20	3
F951A476#SAAQ2	S	47	10	4.7	14	1.1	234	–	210	93	±15	3
F951A476#TAAQ2	T	47	10	4.7	12	0.8	316	–	285	126	*	3
F951A686#BAAQ2	B	68	10	6.8	12	0.4	461	–	415	184	*	3
F951A107#AAAQ2	A	100	10	10.0	35	1.0	274	–	246	110	±15	3
F951A107#BAAQ2	B	100	10	10.0	14	0.4	461	–	415	184	*	3
F951A107#TAAQ2	T	100	10	10.0	20	0.6	365	–	329	146	±15	3
16 Volt												
F951C475#PAAQ2	P	4.7	16	0.8	10	4.0	87	–	78	35	*	3
F951C475#RAAQ2	R	4.7	16	0.8	12	6.0	65	–	58	26	±20	3
F951C106#AAAQ2	A	10	16	1.6	6	1.4	231	–	208	93	*	3
F951C106#PAAQ2	P	10	16	1.6	10	4.0	87	–	78	35	*	3
F951C106#QAAQ2	Q	10	16	1.6	8	3.0	122	–	110	49	*	3
F951C106#SAAQ2	S	10	16	1.6	8	2.0	173	–	156	69	*	3
F951C156#AAAQ2	A	15	16	2.4	8	1.4	231	–	208	93	*	3
F951C156#SAAQ2	S	15	16	2.4	8	2.0	173	–	156	69	*	3
F951C226#AAAQ2	A	22	16	3.5	8	1.4	231	–	208	93	*	3
F951C226#BAAQ2	B	22	16	3.5	6	0.5	412	–	371	165	*	3
F951C226#QAAQ2	Q	22	16	3.5	12	3.0	122	–	110	49	*	3
F951C226#SAAQ2	S	22	16	3.5	10	2.0	173	–	156	69	±15	3
F951C226#TAAQ2	T	22	16	3.5	8	1.4	239	–	215	96	*	3
F951C336#BAAQ2	B	33	16	5.3	8	0.5	412	–	371	165	*	3
F951C336#TAAQ2	T	33	16	5.3	11	1.5	231	–	208	92	±10	3
F951C476#BAAQ2	B	47	16	7.5	10	0.6	376	–	339	151	*	3
20 Volt												
F951D225#PAAQ2	P	2.2	20	0.5	6	6.0	71	–	64	28	*	3
F951D475#AAAQ2	A	4.7	20	0.9	6	1.5	224	–	201	89	*	3
F951D475#SAAQ2	S	4.7	20	0.9	8	4.0	122	–	110	49	*	3
F951D106#AAAQ2	A	10	20	2.0	8	1.5	224	–	201	89	*	3
F951D106#BAAQ2	B	10	20	2.0	6	0.8	326	–	293	130	*	3
F951D106#SAAQ2	S	10	20	2.0	10	4.0	122	–	110	49	±10	3
F951D226#BAAQ2	B	22	20	4.4	8	0.8	326	–	293	130	*	3
F951D336#BAAQ2	B	33	20	6.6	15	1.0	292	–	262	117	*	3
25 Volt												
F951E105#RAAQ2	R	1	25	0.5	10	10.0	50	–	45	20	±10	3
F951E225#PAAQ2	P	2.2	25	0.6	8	6.0	71	–	64	28	±15	3
F951E225#RAAQ2	R	2.2	25	0.6	15	15.0	41	–	37	16	±20	3
F951E475#AAAQ2	A	4.7	25	1.2	8	2.0	194	–	174	77	*	3
F951E475#PAAQ2	P	4.7	25	1.2	10	8.0	61	–	55	24	±15	3
F951E475#QAAQ2	Q	4.7	25	1.2	10	4.0	106	–	95	42	±15	3
F951E475#SAAQ2	S	4.7	25	1.2	8	4.0	122	–	110	49	*	3
F951E106#AAAQ2	A	10	25	2.5	12	2.0	194	–	174	77	±15	3
F951E106#BAAQ2	B	10	25	2.5	6	0.9	307	–	227	123	*	3
35 Volt												
F951V105#PAAQ2	P	1	35	0.5	8	10.0	55	–	49	22	±10	3
F951V105#SAAQ2	S	1	35	0.5	6	8.0	87	–	78	35	*	3
F951V225#AAAQ2	A	2.2	35	0.8	6	4.4	131	–	118	52	*	3
F951V475#BAAQ2	B	4.7	35	1.7	6	1.6	230	–	207	92	*	3
50 Volt												
F951H105MPALZTQ2	P	1	50	1.0	8	7.0	65	59	–	26	±20	3

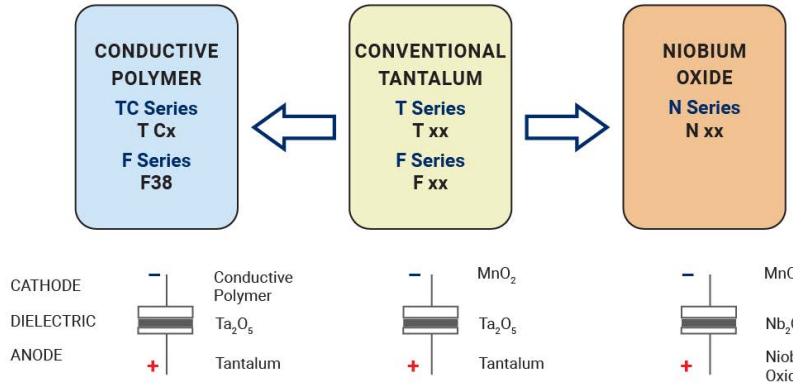
1: ΔC/C Marked ""
#: "M" for ±20% tolerance, "K" for ± 10% tolerance. When you need K tolerance for the part numbers which have M tolerance only, please contact to your local KYOCERA AVX sales office.
Moisture Sensitivity Level (MSL) is defined according to J-STD-020.

Item	All Case (%)
Damp Heat	±10
Temperature cycles	±5
Resistance soldering heat	±5
Surge	±5
Endurance	±10

QUALIFICATION TABLE

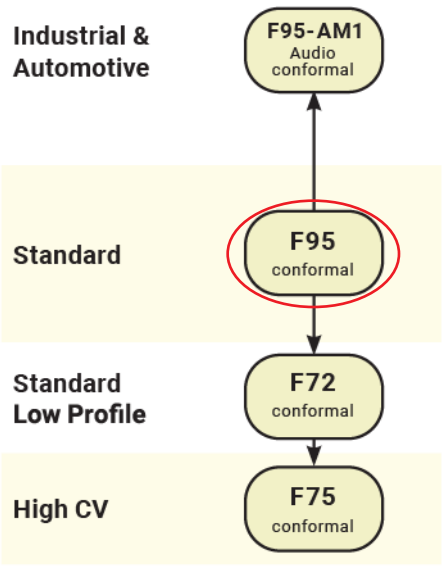
TEST	F95 series (Temperature range -55°C to +125°C)
	Condition
Damp Heat (Steady State)	At 40°C, 90 to 95% R.H., 500 hours (No voltage applied) Capacitance Change ..... Refer to the table above (*1) Dissipation Factor ..... Initial specified value or less Leakage Current ..... Initial specified value or less
Temperature Cycles	At -55°C / +125°C, 30 minutes each, 5 cycles Capacitance Change ..... Refer to the table above(*1) Dissipation Factor ..... Initial specified value or less Leakage Current ..... Initial specified value or less
Resistance to Soldering Heat	10 seconds reflow at 260°C, 10 seconds immersion at 260°C. Capacitance Change ..... Refer to the table above (*1) Dissipation Factor ..... Initial specified value or less Leakage Current ..... Initial specified value or less
Surge	After application of surge voltage in series with a 33Ω resistor at the rate of 30 seconds ON, 30 seconds OFF, for 1000 successive test cycles at 85ºC, capacitors shall meet the characteristic requirements in the table above. Capacitance Change ..... Refer to the table above (*1) Dissipation Factor ..... Initial specified value or less Leakage Current ..... Initial specified value or less
Endurance	After 2000 hours' application of rated voltage at 85°C, capacitors shall meet the characteristic requirements in the table above. Capacitance Change ..... Refer to the table above (*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. 
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. 

SOLID ELECTROLYTIC CAPACITOR ROADMAP

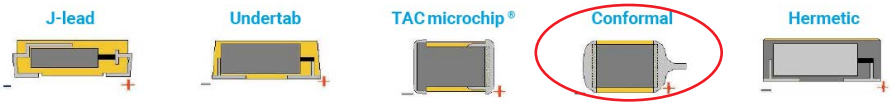


SERIES LINE UP :

CONVENTIONAL SMD MnO_2



FIVE CAPACITOR CONSTRUCTION STYLES



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- Shortage Management
- Alternative Solution
- Excess Inventory Management