

Double Metallized Polypropylene Film Pulse Capacitors

FSQ Series - 630 ~ 2000VDC (Automotive Grade)



Overview

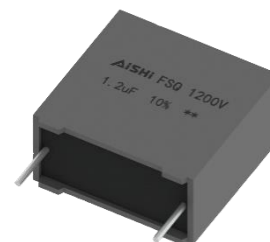
The FSQ capacitor is constructed of metallized polypropylene film with double-sided metallized film encapsulated with epoxy resin in a plastic box, with 2 or 4 tinned copper wires. The FSQ series is suitable for harsh environmental conditions and qualify in accordance to AEC-Q200D requirement.

Applications

Widely used in high voltage, high frequency circuit, snubber and SCR commutating circuits. Specially design for OBC and automotive applications.

Features

- High ripple current
- Self-healing property
- Low losses
- Small inherent temperature rise
- High contact reliability
- Operating temperature range: -55°C to +105°C
- Suitable for harsh environmental conditions
- THB Grade IIIB (85°C, 85% RH, 1000h at U_{NDC})
- Automotive Grade (AEC-Q200D)

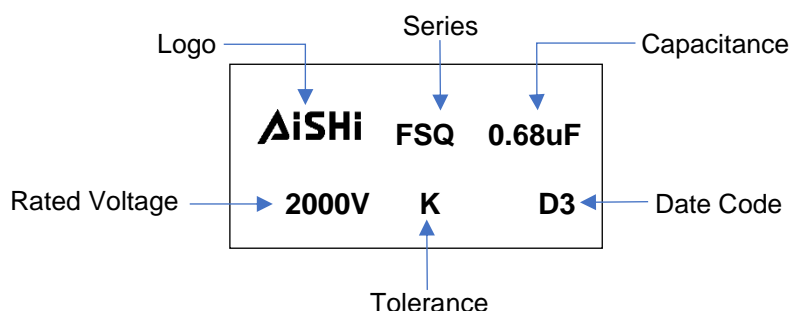


Qualification

Reference Standard	IEC 61071, EN 61071, AEC-Q200D
Climate Category	40/105/56 IEC 60068-1



Marking



Manufacturing Date Code

Year	Code	Month	Code
2018	A	Jan	1
2019	B	Feb	2
2020	C	Mar	3
2021	D	Apr	4
2022	E	May	5
2023	F	Jun	6

Year	Code	Month	Code
2024	G	Jul	7
2025	H	Aug	8
2026	J	Sep	9
2027	K	Oct	A
2028	L	Nov	N
2029	M	Dec	D

Part Number System

F	SQ	3D	K	684	K42	2KL	5
Capacitor Type	Series	Voltage (VDC)	Tolerance	Capacitance (pF)	Size Code	Terminal Code	Lead Length Code
F = Film	Snubber, pulse Capacitor, AEC-Q200, Double-sided Metallized PP Film	630=2L 1000=3K 1200=3B 1600=3W 2000=3D	J = ±5% K = ±10%	First two digits = significant figures. Third digit = Number of zeros.	Refer to Size Code Table	Refer to Terminal Code Table	Refer to Lead Length Code Table

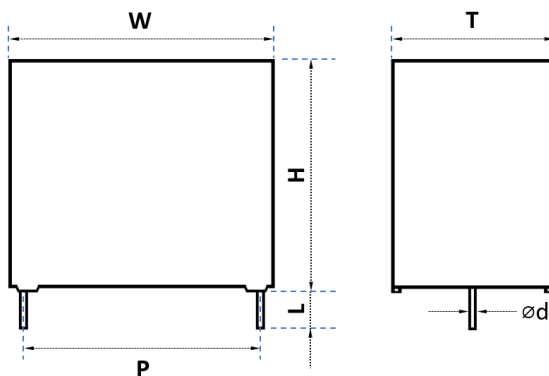
Terminal Code

Digit One (Lead/Terminal Type)	Digit Two (Lead Space)	Digit Three (Lead Ipsilateral)
2 leads for long	L	15.0mm E
2 leads for straight cut	2	22.5mm F
2 leads for forming cut	E	27.5mm G
4 leads for straight cut	4	37.5mm K
		N/A L

Lead Length Code

Lead Length	Code
3.0mm	3
4.0mm	4
5.0mm	5
7.0mm	7
20.0mm min	L

Dimension (mm)



2 pins

Size Code Table (mm)

Size Code	Dimension						Pitch		Lead Wire	
	W	Tolerance	H	Tolerance	T	Tolerance	P	Tolerance	Ød	Tolerance
C13	13	0.5	11	0.5	5	0.5	10	0.5	0.6	0.05
C16	13	0.5	12	0.5	6	0.5	10	0.5	0.6	0.05
C24	13	0.5	13	0.5	7	0.5	10	0.5	0.6	0.05
E14	18	0.5	11	0.5	5	0.5	15	0.5	0.8	0.05
E17	18	0.5	12	0.5	6	0.5	15	0.5	0.8	0.05
E29	18	0.5	13.5	0.5	7.5	0.5	15	0.5	0.8	0.05
E34	18	0.5	14.5	0.5	8.5	0.5	15	0.5	0.8	0.05
E43	18	0.5	16	0.5	10	0.5	15	0.5	0.8	0.05
E47	18	0.5	19	0.5	11	0.5	15	0.5	0.8	0.05
F14	26	0.5	15.5	0.5	6	0.5	22.5	0.5	0.8	0.05
F17	26	0.5	16.5	0.5	7	0.5	22.5	0.5	0.8	0.05
F20	26	0.5	17	0.5	8.5	0.5	22.5	0.5	0.8	0.05
F24	26	0.5	19	0.5	10	0.5	22.5	0.5	0.8	0.05
F26	26	0.5	20	0.5	11	0.5	22.5	0.5	0.8	0.05
F27	26	0.5	22	0.5	12	0.5	22.5	0.5	0.8	0.05
G14	32	0.8	17	0.8	8	0.8	27.5	0.5	0.8	0.05
G15	32	0.8	18	0.8	9	0.8	27.5	0.5	0.8	0.05
G18	32	0.8	20	0.8	11	0.8	27.5	0.5	0.8	0.05
G21	32	0.8	22	0.8	13	0.8	27.5	0.5	0.8	0.05
G22	32	0.8	24.5	0.8	13	0.8	27.5	0.5	0.8	0.05
G26	32	0.8	28	0.8	14	0.8	27.5	0.5	0.8	0.05
G34	32	0.8	33	0.8	18	0.8	27.5	0.5	0.8	0.05
G40	32	0.8	37	0.8	22	0.8	27.5	0.5	0.8	0.05
K11	42	0.8	24	0.8	13	0.8	37.5	0.5	1.0	0.05
K17	42	0.8	28	0.8	17	0.8	37.5	0.5	1.0	0.05
K21	42	0.8	32	0.8	19	0.8	37.5	0.5	1.0	0.05
K24	42	0.8	40	0.8	20	0.8	37.5	0.5	1.0	0.05
K32	42	0.8	44	0.8	24	0.8	37.5	0.5	1.0	0.05
K42	42	0.8	45	0.8	30	0.8	37.5	0.5	1.0	0.05
K47	42	0.8	50	0.8	35	0.8	37.5	0.5	1.0	0.05
K85	42	0.8	22	0.8	11	0.8	37.5	0.5	1.0	0.05
K86	42	0.8	28.5	0.8	16	0.8	37.5	0.5	1.0	0.05

Double Metallized Polypropylene Film Pulse Capacitors

FSQ Series - 630 ~ 2000VDC (Automotive Grade)



Rating and Part Number

Vdc	Vac	Cap Value μF	Dimensions				Irms 100KHz 70°C	Peak Current A	ESR _{Typical} 100KHz mΩ	ESL nH	dv/dt V/us	Lead Wire mm	Part Number
			W mm	H mm	T mm	P mm							
630	400	0.01	18	11	5	15	1.8	30.0	62.0	12.0	3000	0.8	FSQ2LK103E142EL5
630	400	0.012	18	11	5	15	2.2	36.0	52.0	12.0	3000	0.8	FSQ2LK123E142EL5
630	400	0.015	18	11	5	15	2.5	45.0	42.0	12.0	3000	0.8	FSQ2LK153E142EL5
630	400	0.018	18	11	5	15	2.7	54.0	35.0	12.0	3000	0.8	FSQ2LK183E142EL5
630	400	0.02	18	11	5	15	2.8	60.0	32.0	12.0	3000	0.8	FSQ2LK203E142EL5
630	400	0.022	18	11	5	15	2.9	66.0	30.0	12.0	3000	0.8	FSQ2LK223E142EL5
630	400	0.027	18	12	6	15	3.2	81.0	25.0	12.0	3000	0.8	FSQ2LK273E172EL5
630	400	0.033	18	12	6	15	3.7	99.0	20.0	12.0	3000	0.8	FSQ2LK333E172EL5
630	400	0.039	18	12	6	15	3.9	117.0	16.0	12.0	3000	0.8	FSQ2LK393E172EL5
630	400	0.047	18	13.5	7.5	15	4.5	141.0	15.0	12.0	3000	0.8	FSQ2LK473E292EL5
630	400	0.056	18	13.5	7.5	15	4.6	168.0	14.0	12.0	3000	0.8	FSQ2LK563E292EL5
630	400	0.068	18	14.5	8.5	15	4.7	204.0	13.5	12.0	3000	0.8	FSQ2LK683E342EL5
630	400	0.082	18	16	10	15	4.8	246.0	13.2	12.0	3000	0.8	FSQ2LK823E432EL5
630	400	0.1	18	16	10	15	5.0	300.0	13.0	12.0	3000	0.8	FSQ2LK104E432EL5
630	400	0.12	18	19	11	15	5.4	360.0	12.5	12.0	3000	0.8	FSQ2LK124E472EL5
630	400	0.047	26	15.5	6	22.5	3.8	70.5	20.0	15.0	1500	0.8	FSQ2LK473F142FL5
630	400	0.056	26	15.5	6	22.5	4.0	84.0	19.5	15.0	1500	0.8	FSQ2LK563F142FL5
630	400	0.068	26	15.5	6	22.5	4.2	102.0	19.0	15.0	1500	0.8	FSQ2LK683F142FL5
630	400	0.082	26	15.5	6	22.5	4.5	123.0	18.0	15.0	1500	0.8	FSQ2LK823F142FL5
630	400	0.1	26	15.5	6	22.5	5.0	150.0	16.0	15.0	1500	0.8	FSQ2LK104F142FL5
630	400	0.12	26	16.5	7	22.5	5.3	180.0	14.0	15.0	1500	0.8	FSQ2LK124F172FL5
630	400	0.15	26	17	8.5	22.5	6.0	225.0	11.0	15.0	1500	0.8	FSQ2LK154F202FL5
630	400	0.18	26	17	8.5	22.5	6.5	270.0	10.0	15.0	1500	0.8	FSQ2LK184F202FL5
630	400	0.22	26	19	10	22.5	7.5	330.0	8.5	15.0	1500	0.8	FSQ2LK224F242FL5
630	400	0.27	26	20	11	22.5	8.5	405.0	6.5	15.0	1500	0.8	FSQ2LK274F262FL5
630	400	0.33	26	20	11	22.5	9.0	495.0	6.0	15.0	1500	0.8	FSQ2LK334F262FL5
630	400	0.39	26	22	12	22.5	10.0	585.0	5.0	15.0	1500	0.8	FSQ2LK394F272FL5
630	400	0.15	32	17	8	27.5	4.6	135.0	25.0	20.0	900	0.8	FSQ2LK154G142GL5
630	400	0.18	32	17	8	27.5	4.8	162.0	22.0	20.0	900	0.8	FSQ2LK184G142GL5
630	400	0.22	32	18	9	27.5	5.0	198.0	20.0	20.0	900	0.8	FSQ2LK224G152GL5
630	400	0.27	32	20	11	27.5	5.5	243.0	17.5	20.0	900	0.8	FSQ2LK274G182GL5
630	400	0.33	32	20	11	27.5	5.8	297.0	16.5	20.0	900	0.8	FSQ2LK334G182GL5
630	400	0.39	32	20	11	27.5	6.0	351.0	16.0	20.0	900	0.8	FSQ2LK394G182GL5
630	400	0.47	32	22	13	27.5	6.5	423.0	14.0	20.0	900	0.8	FSQ2LK474G212GL5
630	400	0.56	32	22	13	27.5	7.0	504.0	12.0	20.0	900	0.8	FSQ2LK564G212GL5
630	400	0.68	32	24.5	13	27.5	7.5	612.0	10.5	20.0	900	0.8	FSQ2LK684G222GL5
630	400	0.82	32	28	14	27.5	8.5	738.0	9.0	20.0	900	0.8	FSQ2LK824G262GL5
630	400	1	32	33	18	27.5	10.0	900.0	7.0	20.0	900	0.8	FSQ2LK105G342GL5
630	400	1.2	32	33	18	27.5	13.0	1080.0	6.0	20.0	900	0.8	FSQ2LK125G342GL5
630	400	1.5	32	37	22	27.5	15.0	1350.0	5.0	20.0	900	0.8	FSQ2LK155G402GL5
630	400	1.8	32	37	22	27.5	16.0	1620.0	4.0	20.0	900	0.8	FSQ2LK185G402GL5
630	400	0.33	42	22	11	37.5	6.8	165.0	13.0	25.0	500	1.0	FSQ2LK334K852KL5
630	400	0.47	42	22	11	37.5	7.0	235.0	12.5	25.0	500	1.0	FSQ2LK474K852KL5
630	400	0.56	42	22	11	37.5	7.5	280.0	11.0	25.0	500	1.0	FSQ2LK564K852KL5
630	400	0.68	42	22	11	37.5	8.0	340.0	10.5	25.0	500	1.0	FSQ2LK684K852KL5
630	400	0.82	42	28.5	16	37.5	8.0	410.0	10.5	25.0	500	1.0	FSQ2LK824K862KL5
630	400	1.0	42	28.5	16	37.5	8.5	500.0	10.0	25.0	500	1.0	FSQ2LK105K862KL5
630	400	1.5	42	28.5	16	37.5	9.5	750.0	9.0	25.0	500	1.0	FSQ2LK155K862KL5
630	400	1.8	42	32	19	37.5	10.5	900.0	8.5	25.0	500	1.0	FSQ2LK185K212KL5
630	400	2.2	42	40	20	37.5	11.5	1100.0	8.0	25.0	500	1.0	FSQ2LK225K242KL5
630	400	2.7	42	40	20	37.5	13.0	1350.0	7.0	25.0	500	1.0	FSQ2LK275K242KL5
630	400	3.3	42	44	24	37.5	14.0	1650.0	6.0	25.0	500	1.0	FSQ2LK335K322KL5
630	400	3.9	42	45	30	37.5	15.0	1950.0	5.0	25.0	500	1.0	FSQ2LK395K422KL5
630	400	4.7	42	50	35	37.5	16.0	2350.0	4.0	25.0	500	1.0	FSQ2LK475K472KL5
1000	600	0.0082	18	11	5	15	1.5	28.7	80.0	10.0	3500	0.8	FSQ3KK822E142EL5
1000	600	0.01	18	11	5	15	1.8	35.0	62.0	12.0	3500	0.8	FSQ3KK103E142EL5

Rating and Part Number

Vdc	Vac	Cap Value μF	Dimensions				Irms 100KHz 70°C/CA	Peak Current A	ESR _{Typical} 100KHZ mΩ	ESL nH	dv/dt V/us	Lead Wire mm	Part Number
			W mm	H mm	T mm	P mm							
1000	600	0.012	18	11	5	15	2.2	42.0	52.0	12.0	3500	0.8	FSQ3KK123E142EL5
1000	600	0.015	18	11	5	15	2.5	52.5	42.0	12.0	3500	0.8	FSQ3KK153E142EL5
1000	600	0.018	18	11	5	15	2.7	63.0	35.0	12.0	3500	0.8	FSQ3KK183E142EL5
1000	600	0.02	18	12	6	15	2.8	70.0	32.0	10.0	3500	0.8	FSQ3KK203E172EL5
1000	600	0.022	18	12	6	15	3.0	77.0	29.0	10.0	3500	0.8	FSQ3KK223E172EL5
1000	600	0.027	18	13.5	7.5	15	3.5	94.5	24.0	12.0	3500	0.8	FSQ3KK273E292EL5
1000	600	0.033	18	13.5	7.5	15	4.0	115.5	19.0	12.0	3500	0.8	FSQ3KK333E292EL5
1000	600	0.039	18	14.5	8.5	15	4.5	136.5	16.0	12.0	3500	0.8	FSQ3KK393E342EL5
1000	600	0.047	18	14.5	8.5	15	4.9	164.5	14.0	12.0	3500	0.8	FSQ3KK473E342EL5
1000	600	0.027	26	15.5	6	22.5	3.8	56.7	24.0	15.0	2100	0.8	FSQ3KK273F142FL5
1000	600	0.033	26	15.5	6	22.5	4.3	69.3	19.0	15.0	2100	0.8	FSQ3KK333F142FL5
1000	600	0.039	26	15.5	6	22.5	4.8	81.9	16.0	15.0	2100	0.8	FSQ3KK393F142FL5
1000	600	0.047	26	16.5	7	22.5	5.0	98.7	15.0	15.0	2100	0.8	FSQ3KK473F172FL5
1000	600	0.056	26	16.5	7	22.5	5.4	117.6	14.5	15.0	2100	0.8	FSQ3KK563F172FL5
1000	600	0.068	26	17	8.5	22.5	5.6	142.8	14.0	15.0	2100	0.8	FSQ3KK683F202FL5
1000	600	0.082	26	19	10	22.5	5.8	172.2	13.5	15.0	2100	0.8	FSQ3KK823F242FL5
1000	600	0.1	26	19	10	22.5	6.0	210.0	13.0	15.0	2100	0.8	FSQ3KK104F242FL5
1000	600	0.12	26	20	11	22.5	6.5	180.0	12.5	15.0	1500	0.8	FSQ3KK124F262FL5
1000	600	0.15	26	22	12	22.5	7.0	225.0	11.0	15.0	1500	0.8	FSQ3KK154F272FL5
1000	600	0.1	32	17	8	27.5	4.5	90.0	25.0	20.0	900	0.8	FSQ3KK104G142GL5
1000	600	0.12	32	18	9	27.5	4.8	108.0	22.0	20.0	900	0.8	FSQ3KK124G152GL5
1000	600	0.15	32	20	11	27.5	5.0	135.0	21.0	20.0	900	0.8	FSQ3KK154G182GL5
1000	600	0.18	32	22	13	27.5	5.5	162.0	18.0	20.0	900	0.8	FSQ3KK184G212GL5
1000	600	0.22	32	22	13	27.5	6.0	198.0	14.0	20.0	900	0.8	FSQ3KK224G212GL5
1000	600	0.27	32	24.5	13	27.5	6.5	243.0	13.5	20.0	900	0.8	FSQ3KK274G222GL5
1000	600	0.33	32	28	14	27.5	7.0	297.0	12.0	20.0	900	0.8	FSQ3KK334G262GL5
1000	600	0.39	32	33	18	27.5	7.5	351.0	11.0	20.0	900	0.8	FSQ3KK394G342GL5
1000	600	0.47	32	33	18	27.5	8.0	423.0	10.0	20.0	900	0.8	FSQ3KK474G342GL5
1000	600	0.56	32	37	22	27.5	8.5	504.0	9.0	20.0	900	0.8	FSQ3KK564G402GL5
1000	600	0.68	32	37	22	27.5	9.5	612.0	8.0	20.0	900	0.8	FSQ3KK684G402GL5
1000	600	0.18	42	22	11	37.5	6.0	90.0	18.0	25.0	500	1.0	FSQ3KK184K852KL5
1000	600	0.22	42	22	11	37.5	6.5	110.0	14.0	25.0	500	1.0	FSQ3KK224K852KL5
1000	600	0.27	42	24	13	37.5	6.8	135.0	13.0	25.0	500	1.0	FSQ3KK274K112KL5
1000	600	0.33	42	24	13	37.5	7.2	165.0	12.0	25.0	500	1.0	FSQ3KK334K112KL5
1000	600	0.39	42	28	17	37.5	7.4	195.0	11.5	25.0	500	1.0	FSQ3KK394K172KL5
1000	600	0.47	42	28	17	37.5	7.6	235.0	11.0	25.0	500	1.0	FSQ3KK474K172KL5
1000	600	0.56	42	28	17	37.5	8.0	280.0	10.5	25.0	500	1.0	FSQ3KK564K172KL5
1000	600	0.68	42	32	19	37.5	8.5	340.0	10.0	25.0	500	1.0	FSQ3KK684K212KL5
1000	600	0.82	42	40	20	37.5	10.0	410.0	9.0	25.0	500	1.0	FSQ3KK824K242KL5
1000	600	1.0	42	40	20	37.5	11.0	500.0	7.0	25.0	500	1.0	FSQ3KK105K242KL5
1000	600	1.2	42	44	24	37.5	12.0	600.0	6.5	25.0	500	1.0	FSQ3KK125K322KL5
1000	600	1.5	42	44	24	37.5	13.0	750.0	6.0	25.0	500	1.0	FSQ3KK155K322KL5
1000	600	1.8	42	45	30	37.5	15.0	900.0	5.0	25.0	500	1.0	FSQ3KK185K422KL5
1000	600	2.2	42	45	30	37.5	16.0	1100.0	4.0	25.0	500	1.0	FSQ3KK225K422KL5
1600	650	0.0033	18	11	5	15	1.1	19.8	190.0	12.0	6000	0.8	FSQ3WK332E142EL5
1600	650	0.0047	18	11	5	15	1.3	28.2	165.0	12.0	6000	0.8	FSQ3WK472E142EL5
1600	650	0.0056	18	11	5	15	1.4	33.6	120.0	12.0	6000	0.8	FSQ3WK562E142EL5
1600	650	0.0068	18	11	5	15	1.6	40.8	100.0	12.0	6000	0.8	FSQ3WK682E142EL5
1600	650	0.0082	18	11	5	15	1.8	49.2	95.0	12.0	6000	0.8	FSQ3WK822E142EL5
1600	650	0.01	18	11	5	15	2.0	60.0	65.0	12.0	6000	0.8	FSQ3WK103E142EL5
1600	650	0.012	18	12	6	15	2.3	72.0	50.0	12.0	6000	0.8	FSQ3WK123E172EL5
1600	650	0.015	18	12	6	15	2.5	90.0	45.0	12.0	6000	0.8	FSQ3WK153E172EL5
1600	650	0.018	18	13.5	7.5	15	3.0	108.0	35.0	12.0	6000	0.8	FSQ3WK183E292EL5
1600	650	0.022	18	13.5	7.5	15	3.2	132.0	30.0	12.0	6000	0.8	FSQ3WK223E292EL5
1600	650	0.027	18	14.5	8.5	15	3.8	162.0	25.0	12.0	6000	0.8	FSQ3WK273E342EL5
1600	650	0.033	18	14.5	8.5	15	4.0	198.0	20.0	12.0	6000	0.8	FSQ3WK333E342EL5

Double Metallized Polypropylene Film Pulse Capacitors

FSQ Series - 630 ~ 2000VDC (Automotive Grade)



Rating and Part Number

Vdc	Vac	Cap Value μF	Dimensions				Irms 100KHz 70°C/A	Peak Current A	ESR _{Typical} 100KHz mΩ	ESL nH	dv/dt V/us	Lead Wire mm	Part Number
			W mm	H mm	T mm	P mm							
1600	650	0.015	26	15.5	6	22.5	2.8	45.0	40.0	15.0	3000	0.8	FSQ3WK153F142FL5
1600	650	0.022	26	15.5	6	22.5	3.5	66.0	30.0	15.0	3000	0.8	FSQ3WK223F142FL5
1600	650	0.033	26	15.5	6	22.5	4.0	99.0	20.0	15.0	3000	0.8	FSQ3WK333F142FL5
1600	650	0.039	26	16.5	7	22.5	4.8	117.0	16.0	15.0	3000	0.8	FSQ3WK393F172FL5
1600	650	0.047	26	16.5	7	22.5	5.2	141.0	15.0	15.0	3000	0.8	FSQ3WK473F172FL5
1600	650	0.056	26	17	8.5	22.5	5.4	168.0	14.0	15.0	3000	0.8	FSQ3WK563F202FL5
1600	650	0.068	26	19	10	22.5	5.8	204.0	13.0	15.0	3000	0.8	FSQ3WK683F242FL5
1600	650	0.082	26	19	10	22.5	6.0	246.0	12.0	15.0	3000	0.8	FSQ3WK823F242FL5
1600	650	0.1	26	20	11	22.5	6.5	300.0	11.0	15.0	3000	0.8	FSQ3WK104F262FL5
1600	650	0.039	32	17	8	27.5	3.8	78.0	30.0	20.0	2000	0.8	FSQ3WK393G142GL5
1600	650	0.047	32	17	8	27.5	4.0	94.0	29.0	20.0	2000	0.8	FSQ3WK473G142GL5
1600	650	0.056	32	17	8	27.5	4.5	112.0	28.0	20.0	2000	0.8	FSQ3WK563G142GL5
1600	650	0.068	32	18	9	27.5	5.0	136.0	24.0	20.0	2000	0.8	FSQ3WK683G152GL5
1600	650	0.082	32	20	11	27.5	5.5	164.0	20.0	20.0	2000	0.8	FSQ3WK823G182GL5
1600	650	0.1	32	22	13	27.5	6.0	200.0	18.0	20.0	2000	0.8	FSQ3WK104G212GL5
1600	650	0.12	32	22	13	27.5	6.5	240.0	16.0	20.0	2000	0.8	FSQ3WK124G212GL5
1600	650	0.15	32	24.5	13	27.5	7.0	300.0	14.0	20.0	2000	0.8	FSQ3WK154G222GL5
1600	650	0.18	32	28	14	27.5	7.5	360.0	12.0	20.0	2000	0.8	FSQ3WK184G262GL5
1600	650	0.22	32	33	18	27.5	8.5	440.0	10.0	20.0	2000	0.8	FSQ3WK224G342GL5
1600	650	0.27	32	33	18	27.5	9.0	540.0	9.5	20.0	2000	0.8	FSQ3WK274G342GL5
1600	650	0.33	32	33	18	27.5	10.0	660.0	8.0	20.0	2000	0.8	FSQ3WK334G342GL5
1600	650	0.39	32	37	22	27.5	11.0	780.0	7.0	20.0	2000	0.8	FSQ3WK394G402GL5
1600	650	0.47	32	37	22	27.5	12.0	940.0	6.0	20.0	2000	0.8	FSQ3WK474G402GL5
1600	650	0.082	42	22	11	37.5	4.8	98.4	28.0	25.0	1200	1.0	FSQ3WK823K852KL5
1600	650	0.1	42	22	11	37.5	5.0	120.0	24.0	25.0	1200	1.0	FSQ3WK104K852KL5
1600	650	0.12	42	22	11	37.5	5.5	144.0	22.0	25.0	1200	1.0	FSQ3WK124K852KL5
1600	650	0.15	42	22	11	37.5	5.8	180.0	20.0	25.0	1200	1.0	FSQ3WK154K852KL5
1600	650	0.18	42	24	13	37.5	6.0	216.0	18.0	25.0	1200	1.0	FSQ3WK184K112KL5
1600	650	0.22	42	24	13	37.5	6.2	264.0	17.0	25.0	1200	1.0	FSQ3WK224K112KL5
1600	650	0.27	42	24	13	37.5	6.5	324.0	15.0	25.0	1200	1.0	FSQ3WK274K112KL5
1600	650	0.33	42	28.5	16	37.5	6.8	396.0	14.0	25.0	1200	1.0	FSQ3WK334K862KL5
1600	650	0.39	42	28.5	16	37.5	7.5	468.0	12.5	25.0	1200	1.0	FSQ3WK394K862KL5
1600	650	0.47	42	32	19	37.5	8.0	564.0	12.0	25.0	1200	1.0	FSQ3WK474K212KL5
1600	650	0.56	42	40	20	37.5	9.0	672.0	11.0	25.0	1200	1.0	FSQ3WK564K242KL5
1600	650	0.68	42	40	20	37.5	9.5	816.0	10.5	25.0	1200	1.0	FSQ3WK684K242KL5
1600	650	0.82	42	44	24	37.5	10.5	984.0	9.0	25.0	1200	1.0	FSQ3WK824K322KL5
1600	650	1	42	44	24	37.5	12.0	1200.0	7.5	25.0	1200	1.0	FSQ3WK105K322KL5
1600	650	1.2	42	45	30	37.5	14.0	1440.0	6.0	25.0	1200	1.0	FSQ3WK125K422KL5
2000	700	0.001	18	11	5	15	0.5	9.5	630.0	12.0	9500	0.8	FSQ3DK102E142EL5
2000	700	0.0012	18	11	5	15	0.6	11.4	500.0	12.0	9500	0.8	FSQ3DK122E142EL5
2000	700	0.0015	18	11	5	15	0.7	14.3	420.0	12.0	9500	0.8	FSQ3DK152E142EL5
2000	700	0.0018	18	11	5	15	0.8	17.1	350.0	12.0	9500	0.8	FSQ3DK182E142EL5
2000	700	0.0022	18	11	5	15	0.9	20.9	300.0	12.0	9500	0.8	FSQ3DK222E142EL5
2000	700	0.0027	18	11	5	15	1.0	25.7	240.0	12.0	9500	0.8	FSQ3DK272E142EL5
2000	700	0.0033	18	11	5	15	1.2	31.4	190.0	12.0	9500	0.8	FSQ3DK332E142EL5
2000	700	0.0039	18	11	5	15	1.3	37.1	165.0	12.0	9500	0.8	FSQ3DK392E142EL5
2000	700	0.0047	18	11	5	15	1.4	44.7	135.0	12.0	9500	0.8	FSQ3DK472E142EL5
2000	700	0.0056	18	12	6	15	1.6	53.2	110.0	12.0	9500	0.8	FSQ3DK562E172EL5
2000	700	0.0068	18	12	6	15	1.8	64.6	95.0	12.0	9500	0.8	FSQ3DK682E172EL5
2000	700	0.0082	18	12	6	15	2.0	77.9	80.0	12.0	9500	0.8	FSQ3DK822E172EL5
2000	700	0.01	18	13.5	7.5	15	2.5	95.0	65.0	12.0	9500	0.8	FSQ3DK103E292EL5
2000	700	0.012	18	14.5	8.5	15	2.8	114.0	50.0	12.0	9500	0.8	FSQ3DK123E342EL5
2000	700	0.015	18	14.5	8.5	15	3.0	142.5	45.0	12.0	9500	0.8	FSQ3DK153E342EL5
2000	700	0.018	18	16	10	15	3.8	171.0	35.0	12.0	9500	0.8	FSQ3DK183E432EL5
2000	700	0.001	26	15.5	6	22.5	0.6	4.5	550.0	15.0	4500	0.8	FSQ3DK102F142FL5
2000	700	0.0012	26	15.5	6	22.5	0.7	5.4	450.0	15.0	4500	0.8	FSQ3DK122F142FL5

Double Metallized Polypropylene Film Pulse Capacitors

FSQ Series - 630 ~ 2000VDC (Automotive Grade)




Rating and Part Number

Vdc	Vac	Cap Value μF	Dimensions				Irms 100KHz 70°C/A	Peak Current A	ESR _{Typical} 100KHZ mΩ	ESL nH	dv/dt V/us	Lead Wire mm	Part Number
			W mm	H mm	T mm	P mm							
2000	700	0.0015	26	15.5	6	22.5	0.8	6.8	360.0	15.0	4500	0.8	FSQ3DK152F142FL5
2000	700	0.0018	26	15.5	6	22.5	0.9	8.1	300.0	15.0	4500	0.8	FSQ3DK182F142FL5
2000	700	0.0022	26	15.5	6	22.5	1.0	9.9	250.0	15.0	4500	0.8	FSQ3DK222F142FL5
2000	700	0.0027	26	15.5	6	22.5	1.2	12.2	230.0	15.0	4500	0.8	FSQ3DK272F142FL5
2000	700	0.0033	26	15.5	6	22.5	1.2	14.9	200.0	15.0	4500	0.8	FSQ3DK332F142FL5
2000	700	0.0039	26	15.5	6	22.5	1.4	17.6	180.0	15.0	4500	0.8	FSQ3DK392F142FL5
2000	700	0.0047	26	15.5	6	22.5	1.6	21.2	140.0	15.0	4500	0.8	FSQ3DK472F142FL5
2000	700	0.0056	26	15.5	6	22.5	1.8	25.2	120.0	15.0	4500	0.8	FSQ3DK562F142FL5
2000	700	0.0068	26	15.5	6	22.5	2.0	30.6	95.0	15.0	4500	0.8	FSQ3DK682F142FL5
2000	700	0.0082	26	15.5	6	22.5	2.2	36.9	75.0	15.0	4500	0.8	FSQ3DK822F142FL5
2000	700	0.01	26	15.5	6	22.5	2.3	45.0	65.0	15.0	4500	0.8	FSQ3DK103F142FL5
2000	700	0.012	26	15.5	6	22.5	2.5	54.0	60.0	15.0	4500	0.8	FSQ3DK123F142FL5
2000	700	0.015	26	15.5	6	22.5	2.8	67.5	45.0	15.0	4500	0.8	FSQ3DK153F142FL5
2000	700	0.018	26	15.5	6	22.5	3.2	81.0	35.0	15.0	4500	0.8	FSQ3DK183F142FL5
2000	700	0.022	26	16.5	7	22.5	4.0	99.0	26.0	15.0	4500	0.8	FSQ3DK223F172FL5
2000	700	0.027	26	16.5	7	22.5	4.5	121.5	20.0	15.0	4500	0.8	FSQ3DK273F172FL5
2000	700	0.033	26	17	8.5	22.5	5.2	148.5	18.0	15.0	4500	0.8	FSQ3DK333F202FL5
2000	700	0.039	26	19	10	22.5	5.8	175.5	15.0	15.0	4500	0.8	FSQ3DK393F242FL5
2000	700	0.047	26	19	10	22.5	6.0	211.5	13.0	15.0	4500	0.8	FSQ3DK473F242FL5
2000	700	0.056	26	20	11	22.5	6.5	252.0	12.0	15.0	4500	0.8	FSQ3DK563F262FL5
2000	700	0.022	32	17	8	27.5	3.0	55.0	45.0	20.0	2500	0.8	FSQ3DK223G142GL5
2000	700	0.027	32	17	8	27.5	3.5	67.5	40.0	20.0	2500	0.8	FSQ3DK273G142GL5
2000	700	0.033	32	18	9	27.5	4.0	82.5	35.0	20.0	2500	0.8	FSQ3DK333G152GL5
2000	700	0.039	32	20	11	27.5	4.5	97.5	28.0	20.0	2500	0.8	FSQ3DK393G182GL5
2000	700	0.047	32	20	11	27.5	4.8	117.5	25.0	20.0	2500	0.8	FSQ3DK473G182GL5
2000	700	0.056	32	22	13	27.5	5.0	140.0	24.0	20.0	2500	0.8	FSQ3DK563G212GL5
2000	700	0.068	32	22	13	27.5	5.5	170.0	22.0	20.0	2500	0.8	FSQ3DK683G212GL5
2000	700	0.082	32	24.5	13	27.5	6.0	205.0	20.0	20.0	2500	0.8	FSQ3DK823G222GL5
2000	700	0.1	32	28	14	27.5	6.5	250.0	18.0	20.0	2500	0.8	FSQ3DK104G262GL5
2000	700	0.12	32	33	18	27.5	7.0	300.0	16.0	20.0	2500	0.8	FSQ3DK124G342GL5
2000	700	0.15	32	33	18	27.5	7.5	375.0	14.0	20.0	2500	0.8	FSQ3DK154G342GL5
2000	700	0.18	32	37	22	27.5	8.0	450.0	12.0	20.0	2500	0.8	FSQ3DK184G402GL5
2000	700	0.22	32	37	22	27.5	8.5	550.0	10.0	20.0	2500	0.8	FSQ3DK224G402GL5
2000	700	0.033	42	22	11	37.5	4.0	49.5	35.0	25.0	1500	1.0	FSQ3DK333K852KL5
2000	700	0.039	42	22	11	37.5	4.5	58.5	28.0	25.0	1500	1.0	FSQ3DK393K852KL5
2000	700	0.047	42	22	11	37.5	4.8	70.5	26.0	25.0	1500	1.0	FSQ3DK473K852KL5
2000	700	0.056	42	22	11	37.5	5.0	84.0	24.0	25.0	1500	1.0	FSQ3DK563K852KL5
2000	700	0.068	42	22	11	37.5	5.4	102.0	23.0	25.0	1500	1.0	FSQ3DK683K852KL5
2000	700	0.082	42	22	11	37.5	5.8	123.0	22.0	25.0	1500	1.0	FSQ3DK823K852KL5
2000	700	0.1	42	24	13	37.5	6.5	150.0	18.0	25.0	1500	1.0	FSQ3DK104K112KL5
2000	700	0.12	42	24	13	37.5	7.0	180.0	16.0	25.0	1500	1.0	FSQ3DK124K112KL5
2000	700	0.15	42	28.5	16	37.5	7.5	225.0	15.0	25.0	1500	1.0	FSQ3DK154K862KL5
2000	700	0.18	42	28.5	16	37.5	8.0	270.0	14.0	25.0	1500	1.0	FSQ3DK184K862KL5
2000	700	0.22	42	32	19	37.5	8.5	330.0	12.0	25.0	1500	1.0	FSQ3DK224K212KL5
2000	700	0.27	42	40	20	37.5	9.0	405.0	11.0	25.0	1500	1.0	FSQ3DK274K242KL5
2000	700	0.33	42	40	20	37.5	9.5	495.0	10.5	25.0	1500	1.0	FSQ3DK334K242KL5
2000	700	0.39	42	44	24	37.5	10.0	585.0	9.5	25.0	1500	1.0	FSQ3DK394K322KL5
2000	700	0.47	42	44	24	37.5	10.5	705.0	9.0	25.0	1500	1.0	FSQ3DK474K322KL5
2000	700	0.56	42	45	30	37.5	12.0	840.0	7.5	25.0	1500	1.0	FSQ3DK564K422KL5
2000	700	0.68	42	45	30	37.5	14.0	1020.0	6.0	25.0	1500	1.0	FSQ3DK684K422KL5

General Technical Data

Applications	High voltage, high frequency and pulse circuit / IGBT Modules Protection
Dielectric	Double Metallized Polypropylene Film
Reference Standard	IEC 61071, EN 61071, AEC-Q200D
Climatic Category	55/105/56 IEC 60068-1
Operating Temperature Range	-55°C ~ +105°C (85°C ~105°C, decreasing factor 1.25% per °C for Rated Voltage)
Protection	Solvent resistant plastic case UL94 V-0 Thermosetting resin sealing UL 94 V-0 compliant
Installation	Any position
Packaging	Packed in cardboard boxes with protection for the terminals
Storage Conditions	Storage time: ≤24months from the date marked on the label package Average relative humidity per year ≤70% RH≤85% for 30 days randomly distributed throughout the year Dew is absent Temperature: -40°C ~ +85°C
Storage Life	Product that passed less than 2 years from production, No need reconfirmation
RoHS Compliance	Compliant with the restricted substance requirement of Directive 2011/65/EU
Application note and limiting conditions	These capacitors are designed only for DC voltage so should not be used for AC line. The continuous peak voltage shall not exceed the rated DC voltage rating

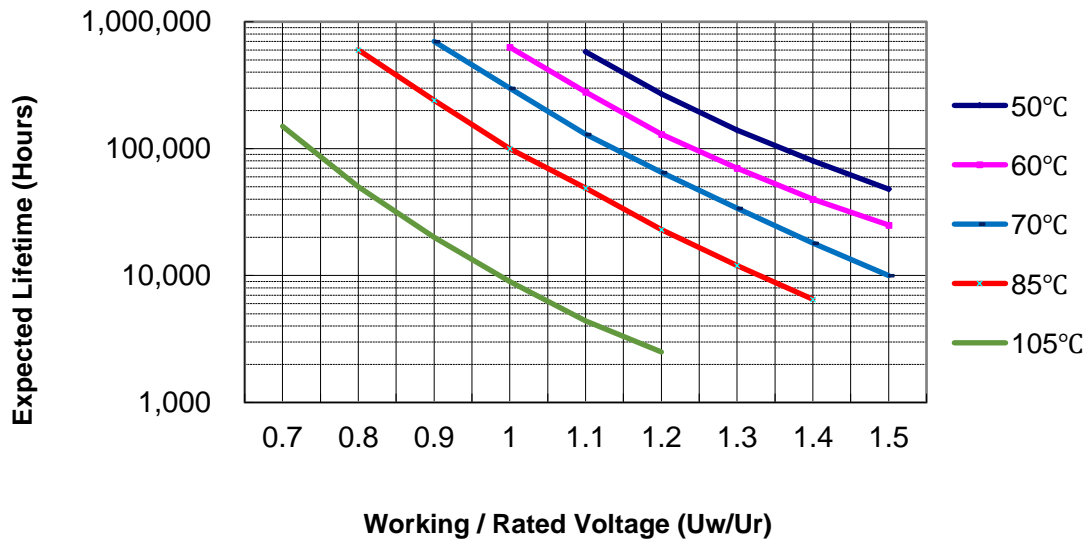
Construction

Metallized Film	OPP & Al (Single Side Metallized and Double Sided Metallized)
Metal Sprayed	Sn/Zn Alloy
Connection Electrode	Tin-plated Copper Wire
Case	Plastic Case (UL94V-0)
Filling	Epoxy Resin (UL94V-0)
Film Construction	<p style="text-align: center;">Internal Series Connection</p> 

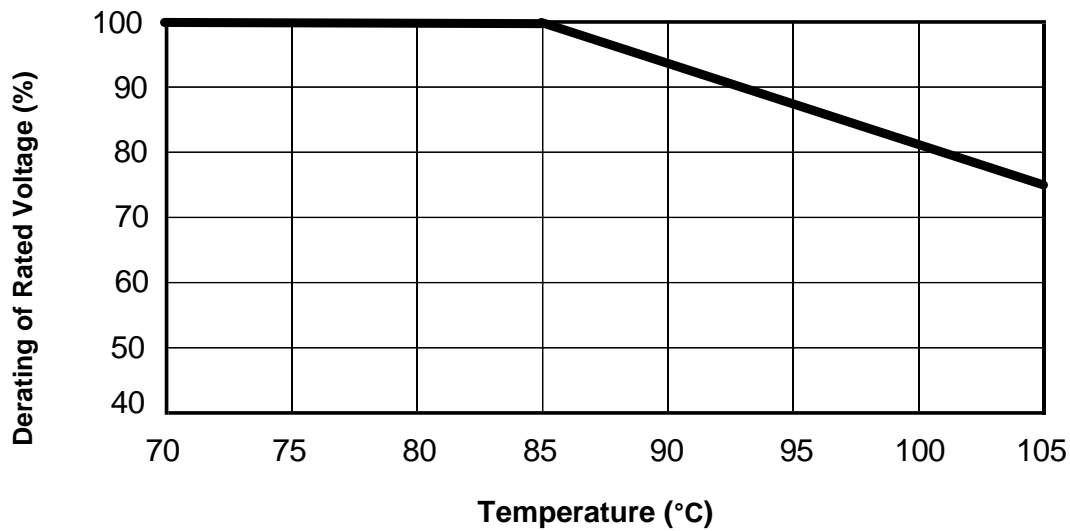
Electrical Characteristics

Voltage Range	630Vdc ~ 2000Vdc
Capacitance Range	0.001 μ F ~ 4.7 μ F
Capacitance Tolerance	\pm 5% or \pm 10% at +25°C
Capacitance	Measuring Frequency at 1kHz Measuring Voltage:1 \pm 0.2V
Standard Atmospheric Conditions for Static Test	Ambient temperature 15°C to 35°C (If there is any doubt on the results, the measurements shall be made at +20 +/- 5°C) Relative humidity 45% to 75% (If there is any doubt on the results, the measurements shall be made at 60% to 70 %.) Air pressure 86 kPa to 106 kPa.
Voltage Between Terminals U_{TT}	1.5 x V_R VDC for 10 seconds (between terminations) @ +25°C \pm 5°C
Voltage Between Terminals and Case U_{TC}	3000VAC, 60s (at+20+/-2°C)
Dielectric Dissipation Factor $Tg\delta_0$	$\leq 2 \times 10^{-4}$
Dissipation factor	0.0010 (0.1%) at 25°C, 1KHz
Insulation Resistance	R between leads, for $C \leq 0.33 \mu F$ at 100 V; 1 min > 100 000 M Ω RC between leads, for $C > 0.33 \mu F$ at 100 V; 1 min > 30 000 s
Self-Inductance	<1nH per mm of lead spacing
Hot-Spot	$\leq 85^\circ C$
Life Expectancy	100,000 hours (U_R , $\Theta_{hotspot}=85^\circ C$)
Failure Rate	100 Fit
Max. Altitude	2000 m
Overvoltage	Maximum duration within one day
Apply 110% of rated voltage	30% of on-load duration
Apply 115% of rated voltage	30 mins
Apply 120% of rated voltage	5 mins
Apply 130% of rated voltage	1 min

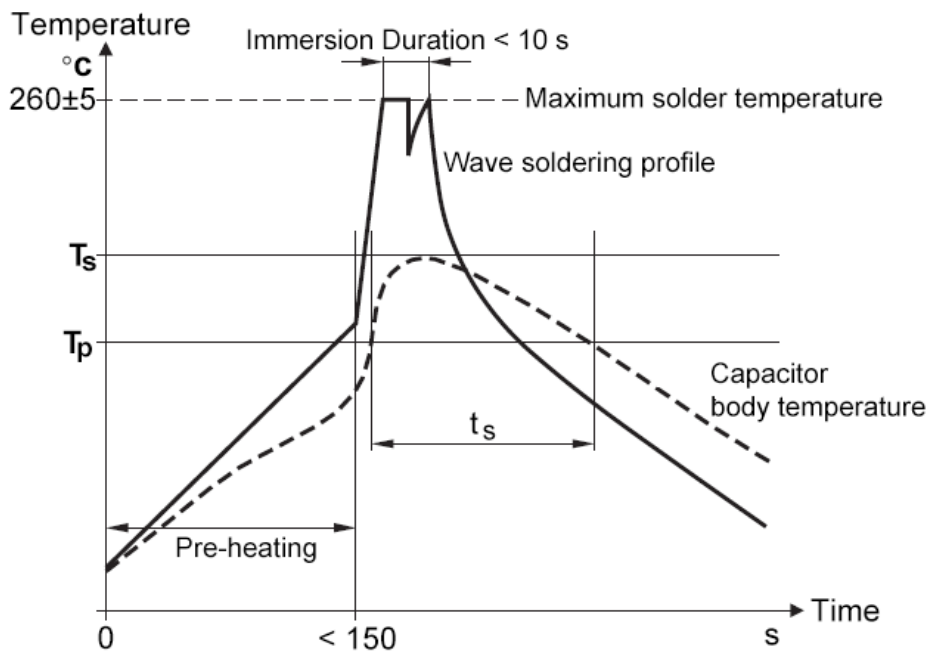
Expected Life Curve



Derating of Rated Voltage Vs Temperature



Wave Soldering Recommendations

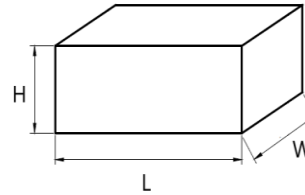


Ts: Capacitor body maximum temperature at wave soldering
 Tp: Capacitor body maximum temperature at pre-heating

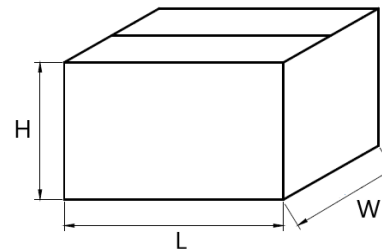
Polypropylene Capacitors	Polyester Capacitors
During pre-heating: $T_p \leq 110^\circ\text{C}$ During soldering: $T_s \leq 120^\circ\text{C}$, $t_s \leq 60$	During pre-heating: $T_p \leq 130^\circ\text{C}$ During soldering: $T_s \leq 160^\circ\text{C}$, $t_s \leq 60\text{s}$

Packaging Information

Inner Box Specifications (Dimensions)			
Box #	L ±3mm	W±3mm	H ±3mm
# 1	331	331	25
# 2	331	331	35
# 3	331	331	50
# 4	331	331	80
# 5	350	170	35
# 6	350	170	50
# 7	350	170	80



Outer Box Specifications (Dimensions)			
Box #	L ±5mm	W±5mm	H ±5mm
# 1	350	340	265
# 2	370	360	35



Packaging Quantity

Pitch	Size Code	Dimension			Packaging Quantity		
		W	H	T	Long Leads	Short Leads	Ammo Pack
10	C13	13	11	5	1,200	1,488	680
	C16	13	12	6	1,200	1,224	560
	C24	13	13	7	1,200	1,056	480
15	E14	18	11	5	800	1,054	680
	E17	18	12	6	800	867	560
	E29	18	13.5	7.5	800	697	450
	E34	18	14.5	8.5	600	612	390
	E43	18	16	10	600	527	340
	E47	18	19	11	600	476	300
22.5	F14	26	15.5	6	612	612	350
	F17	26	16.5	7	528	528	300
	F20	26	17	8.5	432	432	250
	F24	26	19	10	372	372	210
	F26	26	20	11	336	336	190
	F27	26	22	12	300	300	170
27.5	G14	32	17	8	380	380	
	G15	32	18	9	340	340	
	G18	32	20	11	280	280	
	G21	32	22	13	230	230	
	G22	32	24.5	13	230	230	
	G26	32	28	14	220	220	
	G34	32	33	18	170	170	
	G40	32	37	22	140	140	
37.5	K11	42	24	13	161	161	
	K17	42	28	17	126	126	
	K21	42	32	19	112	112	
	K24	42	40	20	105	105	
	K32	42	44	24	91	91	
	K42	42	45	30	70	70	
	K47	42	50	35	63	63	
	K85	42	22	11	196	196	
K86	42	28.5	16	133	133		

Cautious and Warnings

- Don't exceed the upper category temperature.
- For longtime storage, maximum relative humidity 80%, no dew allowed on the capacitor.
- Do not use or store capacitor in corrosive atmosphere, in the dusty environment's regular maintenance and cleaning especially of the terminals is required to avoid conductive path between terminal / or terminal and ground.
- Don't apply any mechanical stress to the capacitor terminals, and avoid any compressive, tensile or flexural stress.
- Don't move the capacitor after fixed to the PC board, and don't pick up the PC board by the fixed capacitor.
- Don't place the capacitor on a PC board whose holes space differs from the specified space.
- Avoid overload of the capacitors
- Do not have unlimited service life expectancy, the max service life expectancy may vary depending on the application the capacitor is used in.

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