

### Overview

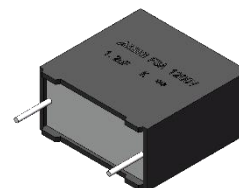
The FSG series is constructed of metallized polypropylene film and double-sided metallized film as electrodes with radial leads of tinned wires. The capacitor is encapsulated in plastic cases, sealed with epoxy resin. The FSG series is suitable for application with harsh environmental conditions.

### Applications

Widely used in high voltage, high frequency circuit, resonant circuit, snubber and SCR commutating circuits.

### Features

- High ripple current
- Self-healing property
- Low losses
- Small inherent temperature rise
- High contact reliability
- Negative temperature coefficient to capacitance
- Operating temperature range: -55°C to +105°C
- Suitable for harsh environment conditions
- THB Grade IIIB (85°C, 85% RH, 1000h at U<sub>NDC</sub>)

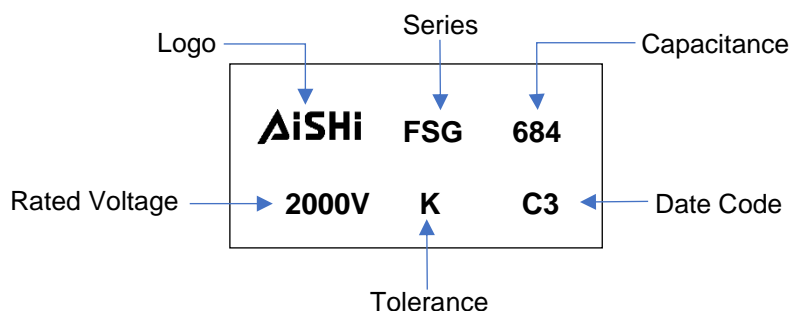


### Qualification

Reference Standard	IEC 61071, EN 61071
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

<b>F</b>	<b>SG</b>	<b>3D</b>	<b>K</b>	<b>684</b>	<b>K42</b>	<b>2KL</b>	<b>5</b>
Capacitor Type	Series	Voltage (VDC)	Tolerance	Capacitance (pF)	Size Code	Terminal Code	Lead Length Code
F = Film	Pulse Capacitors, THB type, 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	10.0mm	C	N/A	L
2 leads for straight cut	2	12.5mm	D		
2 leads for forming cut	E	15.0mm	E		
2 leads for taping forming	T	22.5mm	F		
2 leads for taping straight	V	27.5mm	G		
		37.5mm	K		

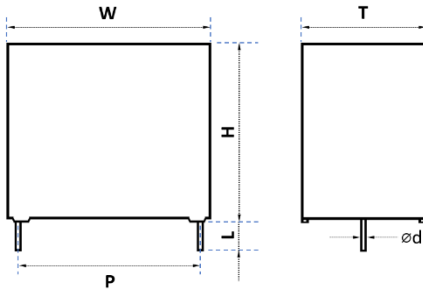
### Lead Length Code

Lead Length	
3.2mm	1
3.5mm	2
3.0mm	3
4.0mm	4
5.0mm	5
Taping	T
N/A	N

# Double Metallized Polypropylene Film Capacitors

## FSG Series - 630 ~ 2000VDC (THB Grade IIIB, Pulse Capacitors)

### Dimension (mm)



### 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 Capacitors

## FSG Series - 630 ~ 2000VDC (THB Grade IIIB, Pulse Capacitors)



### Rating and Part Number

Vdc	Vac	Cap Value μF	Dimensions				Irms 100KHz 70°C	Peak Current A	ESR <sub>Typical</sub> 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	FSG2LK103E142EL5
630	400	0.012	18	11	5	15	2.2	36.0	52.0	12.0	3000	0.8	FSG2LK123E142EL5
630	400	0.015	18	11	5	15	2.5	45.0	42.0	12.0	3000	0.8	FSG2LK153E142EL5
630	400	0.018	18	11	5	15	2.7	54.0	35.0	12.0	3000	0.8	FSG2LK183E142EL5
630	400	0.02	18	11	5	15	2.8	60.0	32.0	12.0	3000	0.8	FSG2LK203E142EL5
630	400	0.022	18	11	5	15	2.9	66.0	30.0	12.0	3000	0.8	FSG2LK223E142EL5
630	400	0.027	18	12	6	15	3.2	81.0	25.0	12.0	3000	0.8	FSG2LK273E172EL5
630	400	0.033	18	12	6	15	3.7	99.0	20.0	12.0	3000	0.8	FSG2LK333E172EL5
630	400	0.039	18	12	6	15	3.9	117.0	16.0	12.0	3000	0.8	FSG2LK393E172EL5
630	400	0.047	18	13.5	7.5	15	4.5	141.0	15.0	12.0	3000	0.8	FSG2LK473E292EL5
630	400	0.056	18	13.5	7.5	15	4.6	168.0	14.0	12.0	3000	0.8	FSG2LK563E292EL5
630	400	0.068	18	14.5	8.5	15	4.7	204.0	13.5	12.0	3000	0.8	FSG2LK683E342EL5
630	400	0.082	18	16	10	15	4.8	246.0	13.2	12.0	3000	0.8	FSG2LK823E432EL5
630	400	0.1	18	16	10	15	5.0	300.0	13.0	12.0	3000	0.8	FSG2LK104E432EL5
630	400	0.12	18	19	11	15	5.4	360.0	12.5	12.0	3000	0.8	FSG2LK124E472EL5
630	400	0.047	26	15.5	6	22.5	3.8	70.5	20.0	15.0	1500	0.8	FSG2LK473F142FL5
630	400	0.056	26	15.5	6	22.5	4.0	84.0	19.5	15.0	1500	0.8	FSG2LK563F142FL5
630	400	0.068	26	15.5	6	22.5	4.2	102.0	19.0	15.0	1500	0.8	FSG2LK683F142FL5
630	400	0.082	26	15.5	6	22.5	4.5	123.0	18.0	15.0	1500	0.8	FSG2LK823F142FL5
630	400	0.1	26	15.5	6	22.5	5.0	150.0	16.0	15.0	1500	0.8	FSG2LK104F142FL5
630	400	0.12	26	16.5	7	22.5	5.3	180.0	14.0	15.0	1500	0.8	FSG2LK124F172FL5
630	400	0.15	26	17	8.5	22.5	6.0	225.0	11.0	15.0	1500	0.8	FSG2LK154F202FL5
630	400	0.18	26	17	8.5	22.5	6.5	270.0	10.0	15.0	1500	0.8	FSG2LK184F202FL5
630	400	0.22	26	19	10	22.5	7.5	330.0	8.5	15.0	1500	0.8	FSG2LK224F242FL5
630	400	0.27	26	20	11	22.5	8.5	405.0	6.5	15.0	1500	0.8	FSG2LK274F262FL5
630	400	0.33	26	20	11	22.5	9.0	495.0	6.0	15.0	1500	0.8	FSG2LK334F262FL5
630	400	0.39	26	22	12	22.5	10.0	585.0	5.0	15.0	1500	0.8	FSG2LK394F272FL5
630	400	0.15	32	17	8	27.5	4.6	135.0	25.0	20.0	900	0.8	FSG2LK154G142GL5
630	400	0.18	32	17	8	27.5	4.8	162.0	22.0	20.0	900	0.8	FSG2LK184G142GL5
630	400	0.22	32	18	9	27.5	5.0	198.0	20.0	20.0	900	0.8	FSG2LK224G152GL5
630	400	0.27	32	20	11	27.5	5.5	243.0	17.5	20.0	900	0.8	FSG2LK274G182GL5
630	400	0.33	32	20	11	27.5	5.8	297.0	16.5	20.0	900	0.8	FSG2LK334G182GL5
630	400	0.39	32	20	11	27.5	6.0	351.0	16.0	20.0	900	0.8	FSG2LK394G182GL5
630	400	0.47	32	22	13	27.5	6.5	423.0	14.0	20.0	900	0.8	FSG2LK474G212GL5
630	400	0.56	32	22	13	27.5	7.0	504.0	12.0	20.0	900	0.8	FSG2LK564G212GL5
630	400	0.68	32	24.5	13	27.5	7.5	612.0	10.5	20.0	900	0.8	FSG2LK684G222GL5
630	400	0.82	32	28	14	27.5	8.5	738.0	9.0	20.0	900	0.8	FSG2LK824G262GL5
630	400	1	32	33	18	27.5	10.0	900.0	7.0	20.0	900	0.8	FSG2LK105G342GL5
630	400	1.2	32	33	18	27.5	13.0	1080.0	6.0	20.0	900	0.8	FSG2LK125G342GL5
630	400	1.5	32	37	22	27.5	15.0	1350.0	5.0	20.0	900	0.8	FSG2LK155G402GL5
630	400	1.8	32	37	22	27.5	16.0	1620.0	4.0	20.0	900	0.8	FSG2LK185G402GL5
630	400	0.33	42	22	11	37.5	6.8	165.0	13.0	25.0	500	1.0	FSG2LK334K852KL5
630	400	0.47	42	22	11	37.5	7.0	235.0	12.5	25.0	500	1.0	FSG2LK474K852KL5
630	400	0.56	42	22	11	37.5	7.5	280.0	11.0	25.0	500	1.0	FSG2LK564K852KL5
630	400	0.68	42	22	11	37.5	8.0	340.0	10.5	25.0	500	1.0	FSG2LK684K852KL5
630	400	0.82	42	28.5	16	37.5	8.0	410.0	10.5	25.0	500	1.0	FSG2LK824K862KL5
630	400	1.0	42	28.5	16	37.5	8.5	500.0	10.0	25.0	500	1.0	FSG2LK105K862KL5
630	400	1.5	42	28.5	16	37.5	9.5	750.0	9.0	25.0	500	1.0	FSG2LK155K862KL5
630	400	1.8	42	32	19	37.5	10.5	900.0	8.5	25.0	500	1.0	FSG2LK185K212KL5
630	400	2.2	42	40	20	37.5	11.5	1100.0	8.0	25.0	500	1.0	FSG2LK225K242KL5
630	400	2.7	42	40	20	37.5	13.0	1350.0	7.0	25.0	500	1.0	FSG2LK275K242KL5
630	400	3.3	42	44	24	37.5	14.0	1650.0	6.0	25.0	500	1.0	FSG2LK335K322KL5
630	400	3.9	42	45	30	37.5	15.0	1950.0	5.0	25.0	500	1.0	FSG2LK395K422KL5
630	400	4.7	42	50	35	37.5	16.0	2350.0	4.0	25.0	500	1.0	FSG2LK475K472KL5
1000	600	0.0082	18	11	5	15	1.5	28.7	80.0	10.0	3500	0.8	FSG3KK822E142EL5
1000	600	0.01	18	11	5	15	1.8	35.0	62.0	12.0	3500	0.8	FSG3KK103E142EL5

# Double Metallized Polypropylene Film Capacitors

## FSG Series - 630 ~ 2000VDC (THB Grade IIIB, Pulse Capacitors)



### Rating and Part Number

Vdc	Vac	Cap Value μF	Dimensions				Irms 100KHz 70°C/CA	Peak Current A	ESR <sub>Typical</sub> 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	FSG3KK123E142EL5
1000	600	0.015	18	11	5	15	2.5	52.5	42.0	12.0	3500	0.8	FSG3KK153E142EL5
1000	600	0.018	18	11	5	15	2.7	63.0	35.0	12.0	3500	0.8	FSG3KK183E142EL5
1000	600	0.02	18	12	6	15	2.8	70.0	32.0	10.0	3500	0.8	FSG3KK203E172EL5
1000	600	0.022	18	12	6	15	3.0	77.0	29.0	10.0	3500	0.8	FSG3KK223E172EL5
1000	600	0.027	18	13.5	7.5	15	3.5	94.5	24.0	12.0	3500	0.8	FSG3KK273E292EL5
1000	600	0.033	18	13.5	7.5	15	4.0	115.5	19.0	12.0	3500	0.8	FSG3KK333E292EL5
1000	600	0.039	18	14.5	8.5	15	4.5	136.5	16.0	12.0	3500	0.8	FSG3KK393E342EL5
1000	600	0.047	18	14.5	8.5	15	4.9	164.5	14.0	12.0	3500	0.8	FSG3KK473E342EL5
1000	600	0.027	26	15.5	6	22.5	3.8	56.7	24.0	15.0	2100	0.8	FSG3KK273F142FL5
1000	600	0.033	26	15.5	6	22.5	4.3	69.3	19.0	15.0	2100	0.8	FSG3KK333F142FL5
1000	600	0.039	26	15.5	6	22.5	4.8	81.9	16.0	15.0	2100	0.8	FSG3KK393F142FL5
1000	600	0.047	26	16.5	7	22.5	5.0	98.7	15.0	15.0	2100	0.8	FSG3KK473F172FL5
1000	600	0.056	26	16.5	7	22.5	5.4	117.6	14.5	15.0	2100	0.8	FSG3KK563F172FL5
1000	600	0.068	26	17	8.5	22.5	5.6	142.8	14.0	15.0	2100	0.8	FSG3KK683F202FL5
1000	600	0.082	26	19	10	22.5	5.8	172.2	13.5	15.0	2100	0.8	FSG3KK823F242FL5
1000	600	0.1	26	19	10	22.5	6.0	210.0	13.0	15.0	2100	0.8	FSG3KK104F242FL5
1000	600	0.12	26	20	11	22.5	6.5	180.0	12.5	15.0	1500	0.8	FSG3KK124F262FL5
1000	600	0.15	26	22	12	22.5	7.0	225.0	11.0	15.0	1500	0.8	FSG3KK154F272FL5
1000	600	0.1	32	17	8	27.5	4.5	90.0	25.0	20.0	900	0.8	FSG3KK104G142GL5
1000	600	0.12	32	18	9	27.5	4.8	108.0	22.0	20.0	900	0.8	FSG3KK124G152GL5
1000	600	0.15	32	20	11	27.5	5.0	135.0	21.0	20.0	900	0.8	FSG3KK154G182GL5
1000	600	0.18	32	22	13	27.5	5.5	162.0	18.0	20.0	900	0.8	FSG3KK184G212GL5
1000	600	0.22	32	22	13	27.5	6.0	198.0	14.0	20.0	900	0.8	FSG3KK224G212GL5
1000	600	0.27	32	24.5	13	27.5	6.5	243.0	13.5	20.0	900	0.8	FSG3KK274G222GL5
1000	600	0.33	32	28	14	27.5	7.0	297.0	12.0	20.0	900	0.8	FSG3KK334G262GL5
1000	600	0.39	32	33	18	27.5	7.5	351.0	11.0	20.0	900	0.8	FSG3KK394G342GL5
1000	600	0.47	32	33	18	27.5	8.0	423.0	10.0	20.0	900	0.8	FSG3KK474G342GL5
1000	600	0.56	32	37	22	27.5	8.5	504.0	9.0	20.0	900	0.8	FSG3KK564G402GL5
1000	600	0.68	32	37	22	27.5	9.5	612.0	8.0	20.0	900	0.8	FSG3KK684G402GL5
1000	600	0.18	42	22	11	37.5	6.0	90.0	18.0	25.0	500	1.0	FSG3KK184K852KL5
1000	600	0.22	42	22	11	37.5	6.5	110.0	14.0	25.0	500	1.0	FSG3KK224K852KL5
1000	600	0.27	42	24	13	37.5	6.8	135.0	13.0	25.0	500	1.0	FSG3KK274K112KL5
1000	600	0.33	42	24	13	37.5	7.2	165.0	12.0	25.0	500	1.0	FSG3KK334K112KL5
1000	600	0.39	42	28	17	37.5	7.4	195.0	11.5	25.0	500	1.0	FSG3KK394K172KL5
1000	600	0.47	42	28	17	37.5	7.6	235.0	11.0	25.0	500	1.0	FSG3KK474K172KL5
1000	600	0.56	42	28	17	37.5	8.0	280.0	10.5	25.0	500	1.0	FSG3KK564K172KL5
1000	600	0.68	42	32	19	37.5	8.5	340.0	10.0	25.0	500	1.0	FSG3KK684K212KL5
1000	600	0.82	42	40	20	37.5	10.0	410.0	9.0	25.0	500	1.0	FSG3KK824K242KL5
1000	600	1.0	42	40	20	37.5	11.0	500.0	7.0	25.0	500	1.0	FSG3KK105K242KL5
1000	600	1.2	42	44	24	37.5	12.0	600.0	6.5	25.0	500	1.0	FSG3KK125K322KL5
1000	600	1.5	42	44	24	37.5	13.0	750.0	6.0	25.0	500	1.0	FSG3KK155K322KL5
1000	600	1.8	42	45	30	37.5	15.0	900.0	5.0	25.0	500	1.0	FSG3KK185K422KL5
1000	600	2.2	42	45	30	37.5	16.0	1100.0	4.0	25.0	500	1.0	FSG3KK225K422KL5
1600	650	0.0033	18	11	5	15	1.1	19.8	190.0	12.0	6000	0.8	FSG3WK332E142EL5
1600	650	0.0047	18	11	5	15	1.3	28.2	165.0	12.0	6000	0.8	FSG3WK472E142EL5
1600	650	0.0056	18	11	5	15	1.4	33.6	120.0	12.0	6000	0.8	FSG3WK562E142EL5
1600	650	0.0068	18	11	5	15	1.6	40.8	100.0	12.0	6000	0.8	FSG3WK682E142EL5
1600	650	0.0082	18	11	5	15	1.8	49.2	95.0	12.0	6000	0.8	FSG3WK822E142EL5
1600	650	0.01	18	11	5	15	2.0	60.0	65.0	12.0	6000	0.8	FSG3WK103E142EL5
1600	650	0.012	18	12	6	15	2.3	72.0	50.0	12.0	6000	0.8	FSG3WK123E172EL5
1600	650	0.015	18	12	6	15	2.5	90.0	45.0	12.0	6000	0.8	FSG3WK153E172EL5
1600	650	0.018	18	13.5	7.5	15	3.0	108.0	35.0	12.0	6000	0.8	FSG3WK183E292EL5
1600	650	0.022	18	13.5	7.5	15	3.2	132.0	30.0	12.0	6000	0.8	FSG3WK223E292EL5
1600	650	0.027	18	14.5	8.5	15	3.8	162.0	25.0	12.0	6000	0.8	FSG3WK273E342EL5
1600	650	0.033	18	14.5	8.5	15	4.0	198.0	20.0	12.0	6000	0.8	FSG3WK333E342EL5

# Double Metallized Polypropylene Film Capacitors

## FSG Series - 630 ~ 2000VDC (THB Grade IIIB, Pulse Capacitors)



### Rating and Part Number

Vdc	Vac	Cap Value μF	Dimensions				Irms 100KHz 70°C/CA	Peak Current A	ESR <sub>Typical</sub> 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	FSG3WK153F142FL5
1600	650	0.022	26	15.5	6	22.5	3.5	66.0	30.0	15.0	3000	0.8	FSG3WK223F142FL5
1600	650	0.033	26	15.5	6	22.5	4.0	99.0	20.0	15.0	3000	0.8	FSG3WK333F142FL5
1600	650	0.039	26	16.5	7	22.5	4.8	117.0	16.0	15.0	3000	0.8	FSG3WK393F172FL5
1600	650	0.047	26	16.5	7	22.5	5.2	141.0	15.0	15.0	3000	0.8	FSG3WK473F172FL5
1600	650	0.056	26	17	8.5	22.5	5.4	168.0	14.0	15.0	3000	0.8	FSG3WK563F202FL5
1600	650	0.068	26	19	10	22.5	5.8	204.0	13.0	15.0	3000	0.8	FSG3WK683F242FL5
1600	650	0.082	26	19	10	22.5	6.0	246.0	12.0	15.0	3000	0.8	FSG3WK823F242FL5
1600	650	0.1	26	20	11	22.5	6.5	300.0	11.0	15.0	3000	0.8	FSG3WK104F262FL5
1600	650	0.039	32	17	8	27.5	3.8	78.0	30.0	20.0	2000	0.8	FSG3WK393G142GL5
1600	650	0.047	32	17	8	27.5	4.0	94.0	29.0	20.0	2000	0.8	FSG3WK473G142GL5
1600	650	0.056	32	17	8	27.5	4.5	112.0	28.0	20.0	2000	0.8	FSG3WK563G142GL5
1600	650	0.068	32	18	9	27.5	5.0	136.0	24.0	20.0	2000	0.8	FSG3WK683G152GL5
1600	650	0.082	32	20	11	27.5	5.5	164.0	20.0	20.0	2000	0.8	FSG3WK823G182GL5
1600	650	0.1	32	22	13	27.5	6.0	200.0	18.0	20.0	2000	0.8	FSG3WK104G212GL5
1600	650	0.12	32	22	13	27.5	6.5	240.0	16.0	20.0	2000	0.8	FSG3WK124G212GL5
1600	650	0.15	32	24.5	13	27.5	7.0	300.0	14.0	20.0	2000	0.8	FSG3WK154G222GL5
1600	650	0.18	32	28	14	27.5	7.5	360.0	12.0	20.0	2000	0.8	FSG3WK184G262GL5
1600	650	0.22	32	33	18	27.5	8.5	440.0	10.0	20.0	2000	0.8	FSG3WK224G342GL5
1600	650	0.27	32	33	18	27.5	9.0	540.0	9.5	20.0	2000	0.8	FSG3WK274G342GL5
1600	650	0.33	32	33	18	27.5	10.0	660.0	8.0	20.0	2000	0.8	FSG3WK334G342GL5
1600	650	0.39	32	37	22	27.5	11.0	780.0	7.0	20.0	2000	0.8	FSG3WK394G402GL5
1600	650	0.47	32	37	22	27.5	12.0	940.0	6.0	20.0	2000	0.8	FSG3WK474G402GL5
1600	650	0.082	42	22	11	37.5	4.8	98.4	28.0	25.0	1200	1.0	FSG3WK823K852KL5
1600	650	0.1	42	22	11	37.5	5.0	120.0	24.0	25.0	1200	1.0	FSG3WK104K852KL5
1600	650	0.12	42	22	11	37.5	5.5	144.0	22.0	25.0	1200	1.0	FSG3WK124K852KL5
1600	650	0.15	42	22	11	37.5	5.8	180.0	20.0	25.0	1200	1.0	FSG3WK154K852KL5
1600	650	0.18	42	24	13	37.5	6.0	216.0	18.0	25.0	1200	1.0	FSG3WK184K112KL5
1600	650	0.22	42	24	13	37.5	6.2	264.0	17.0	25.0	1200	1.0	FSG3WK224K112KL5
1600	650	0.27	42	24	13	37.5	6.5	324.0	15.0	25.0	1200	1.0	FSG3WK274K112KL5
1600	650	0.33	42	28.5	16	37.5	6.8	396.0	14.0	25.0	1200	1.0	FSG3WK334K862KL5
1600	650	0.39	42	28.5	16	37.5	7.5	468.0	12.5	25.0	1200	1.0	FSG3WK394K862KL5
1600	650	0.47	42	32	19	37.5	8.0	564.0	12.0	25.0	1200	1.0	FSG3WK474K212KL5
1600	650	0.56	42	40	20	37.5	9.0	672.0	11.0	25.0	1200	1.0	FSG3WK564K242KL5
1600	650	0.68	42	40	20	37.5	9.5	816.0	10.5	25.0	1200	1.0	FSG3WK684K242KL5
1600	650	0.82	42	44	24	37.5	10.5	984.0	9.0	25.0	1200	1.0	FSG3WK824K322KL5
1600	650	1	42	44	24	37.5	12.0	1200.0	7.5	25.0	1200	1.0	FSG3WK105K322KL5
1600	650	1.2	42	45	30	37.5	14.0	1440.0	6.0	25.0	1200	1.0	FSG3WK125K422KL5
2000	700	0.001	18	11	5	15	0.5	9.5	630.0	12.0	9500	0.8	FSG3DK102E142EL5
2000	700	0.0012	18	11	5	15	0.6	11.4	500.0	12.0	9500	0.8	FSG3DK122E142EL5
2000	700	0.0015	18	11	5	15	0.7	14.3	420.0	12.0	9500	0.8	FSG3DK152E142EL5
2000	700	0.0018	18	11	5	15	0.8	17.1	350.0	12.0	9500	0.8	FSG3DK182E142EL5
2000	700	0.0022	18	11	5	15	0.9	20.9	300.0	12.0	9500	0.8	FSG3DK222E142EL5
2000	700	0.0027	18	11	5	15	1.0	25.7	240.0	12.0	9500	0.8	FSG3DK272E142EL5
2000	700	0.0033	18	11	5	15	1.2	31.4	190.0	12.0	9500	0.8	FSG3DK332E142EL5
2000	700	0.0039	18	11	5	15	1.3	37.1	165.0	12.0	9500	0.8	FSG3DK392E142EL5
2000	700	0.0047	18	11	5	15	1.4	44.7	135.0	12.0	9500	0.8	FSG3DK472E142EL5
2000	700	0.0056	18	12	6	15	1.6	53.2	110.0	12.0	9500	0.8	FSG3DK562E172EL5
2000	700	0.0068	18	12	6	15	1.8	64.6	95.0	12.0	9500	0.8	FSG3DK682E172EL5
2000	700	0.0082	18	12	6	15	2.0	77.9	80.0	12.0	9500	0.8	FSG3DK822E172EL5
2000	700	0.01	18	13.5	7.5	15	2.5	95.0	65.0	12.0	9500	0.8	FSG3DK103E292EL5
2000	700	0.012	18	14.5	8.5	15	2.8	114.0	50.0	12.0	9500	0.8	FSG3DK123E342EL5
2000	700	0.015	18	14.5	8.5	15	3.0	142.5	45.0	12.0	9500	0.8	FSG3DK153E342EL5
2000	700	0.018	18	16	10	15	3.8	171.0	35.0	12.0	9500	0.8	FSG3DK183E432EL5
2000	700	0.001	26	15.5	6	22.5	0.6	4.5	550.0	15.0	4500	0.8	FSG3DK102F142FL5
2000	700	0.0012	26	15.5	6	22.5	0.7	5.4	450.0	15.0	4500	0.8	FSG3DK122F142FL5

# Double Metallized Polypropylene Film Capacitors

## FSG Series - 630 ~ 2000VDC (THB Grade IIIB, Pulse Capacitors)




### Rating and Part Number

Vdc	Vac	Cap Value μF	Dimensions				Irms 100KHz 70°C/A	Peak Current A	ESR <sub>Typical</sub> 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	FSG3DK152F142FL5
2000	700	0.0018	26	15.5	6	22.5	0.9	8.1	300.0	15.0	4500	0.8	FSG3DK182F142FL5
2000	700	0.0022	26	15.5	6	22.5	1.0	9.9	250.0	15.0	4500	0.8	FSG3DK222F142FL5
2000	700	0.0027	26	15.5	6	22.5	1.2	12.2	230.0	15.0	4500	0.8	FSG3DK272F142FL5
2000	700	0.0033	26	15.5	6	22.5	1.2	14.9	200.0	15.0	4500	0.8	FSG3DK332F142FL5
2000	700	0.0039	26	15.5	6	22.5	1.4	17.6	180.0	15.0	4500	0.8	FSG3DK392F142FL5
2000	700	0.0047	26	15.5	6	22.5	1.6	21.2	140.0	15.0	4500	0.8	FSG3DK472F142FL5
2000	700	0.0056	26	15.5	6	22.5	1.8	25.2	120.0	15.0	4500	0.8	FSG3DK562F142FL5
2000	700	0.0068	26	15.5	6	22.5	2.0	30.6	95.0	15.0	4500	0.8	FSG3DK682F142FL5
2000	700	0.0082	26	15.5	6	22.5	2.2	36.9	75.0	15.0	4500	0.8	FSG3DK822F142FL5
2000	700	0.01	26	15.5	6	22.5	2.3	45.0	65.0	15.0	4500	0.8	FSG3DK103F142FL5
2000	700	0.012	26	15.5	6	22.5	2.5	54.0	60.0	15.0	4500	0.8	FSG3DK123F142FL5
2000	700	0.015	26	15.5	6	22.5	2.8	67.5	45.0	15.0	4500	0.8	FSG3DK153F142FL5
2000	700	0.018	26	15.5	6	22.5	3.2	81.0	35.0	15.0	4500	0.8	FSG3DK183F142FL5
2000	700	0.022	26	16.5	7	22.5	4.0	99.0	26.0	15.0	4500	0.8	FSG3DK223F172FL5
2000	700	0.027	26	16.5	7	22.5	4.5	121.5	20.0	15.0	4500	0.8	FSG3DK273F172FL5
2000	700	0.033	26	17	8.5	22.5	5.2	148.5	18.0	15.0	4500	0.8	FSG3DK333F202FL5
2000	700	0.039	26	19	10	22.5	5.8	175.5	15.0	15.0	4500	0.8	FSG3DK393F242FL5
2000	700	0.047	26	19	10	22.5	6.0	211.5	13.0	15.0	4500	0.8	FSG3DK473F242FL5
2000	700	0.056	26	20	11	22.5	6.5	252.0	12.0	15.0	4500	0.8	FSG3DK563F262FL5
2000	700	0.022	32	17	8	27.5	3.0	55.0	45.0	20.0	2500	0.8	FSG3DK223G142GL5
2000	700	0.027	32	17	8	27.5	3.5	67.5	40.0	20.0	2500	0.8	FSG3DK273G142GL5
2000	700	0.033	32	18	9	27.5	4.0	82.5	35.0	20.0	2500	0.8	FSG3DK333G152GL5
2000	700	0.039	32	20	11	27.5	4.5	97.5	28.0	20.0	2500	0.8	FSG3DK393G182GL5
2000	700	0.047	32	20	11	27.5	4.8	117.5	25.0	20.0	2500	0.8	FSG3DK473G182GL5
2000	700	0.056	32	22	13	27.5	5.0	140.0	24.0	20.0	2500	0.8	FSG3DK563G212GL5
2000	700	0.068	32	22	13	27.5	5.5	170.0	22.0	20.0	2500	0.8	FSG3DK683G212GL5
2000	700	0.082	32	24.5	13	27.5	6.0	205.0	20.0	20.0	2500	0.8	FSG3DK823G222GL5
2000	700	0.1	32	28	14	27.5	6.5	250.0	18.0	20.0	2500	0.8	FSG3DK104G262GL5
2000	700	0.12	32	33	18	27.5	7.0	300.0	16.0	20.0	2500	0.8	FSG3DK124G342GL5
2000	700	0.15	32	33	18	27.5	7.5	375.0	14.0	20.0	2500	0.8	FSG3DK154G342GL5
2000	700	0.18	32	37	22	27.5	8.0	450.0	12.0	20.0	2500	0.8	FSG3DK184G402GL5
2000	700	0.22	32	37	22	27.5	8.5	550.0	10.0	20.0	2500	0.8	FSG3DK224G402GL5
2000	700	0.033	42	22	11	37.5	4.0	49.5	35.0	25.0	1500	1.0	FSG3DK333K852KL5
2000	700	0.039	42	22	11	37.5	4.5	58.5	28.0	25.0	1500	1.0	FSG3DK393K852KL5
2000	700	0.047	42	22	11	37.5	4.8	70.5	26.0	25.0	1500	1.0	FSG3DK473K852KL5
2000	700	0.056	42	22	11	37.5	5.0	84.0	24.0	25.0	1500	1.0	FSG3DK563K852KL5
2000	700	0.068	42	22	11	37.5	5.4	102.0	23.0	25.0	1500	1.0	FSG3DK683K852KL5
2000	700	0.082	42	22	11	37.5	5.8	123.0	22.0	25.0	1500	1.0	FSG3DK823K852KL5
2000	700	0.1	42	24	13	37.5	6.5	150.0	18.0	25.0	1500	1.0	FSG3DK104K112KL5
2000	700	0.12	42	24	13	37.5	7.0	180.0	16.0	25.0	1500	1.0	FSG3DK124K112KL5
2000	700	0.15	42	28.5	16	37.5	7.5	225.0	15.0	25.0	1500	1.0	FSG3DK154K862KL5
2000	700	0.18	42	28.5	16	37.5	8.0	270.0	14.0	25.0	1500	1.0	FSG3DK184K862KL5
2000	700	0.22	42	32	19	37.5	8.5	330.0	12.0	25.0	1500	1.0	FSG3DK224K212KL5
2000	700	0.27	42	40	20	37.5	9.0	405.0	11.0	25.0	1500	1.0	FSG3DK274K242KL5
2000	700	0.33	42	40	20	37.5	9.5	495.0	10.5	25.0	1500	1.0	FSG3DK334K242KL5
2000	700	0.39	42	44	24	37.5	10.0	585.0	9.5	25.0	1500	1.0	FSG3DK394K322KL5
2000	700	0.47	42	44	24	37.5	10.5	705.0	9.0	25.0	1500	1.0	FSG3DK474K322KL5
2000	700	0.56	42	45	30	37.5	12.0	840.0	7.5	25.0	1500	1.0	FSG3DK564K422KL5
2000	700	0.68	42	45	30	37.5	14.0	1020.0	6.0	25.0	1500	1.0	FSG3DK684K422KL5

**General Technical Data**

Applications	DC / Pulse and High Frequency Applications
Dielectric	Double Metallized Polypropylene Film
Reference Standard	IEC 60384-16
Climatic Category	40/105/56 IEC 60068-1
Operating Temperature Range	-40°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
Flame Retardant Grade	Flame retardant performance accords with horizontal combustion grade HB and vertical combustion grade V-0.

**Construction**

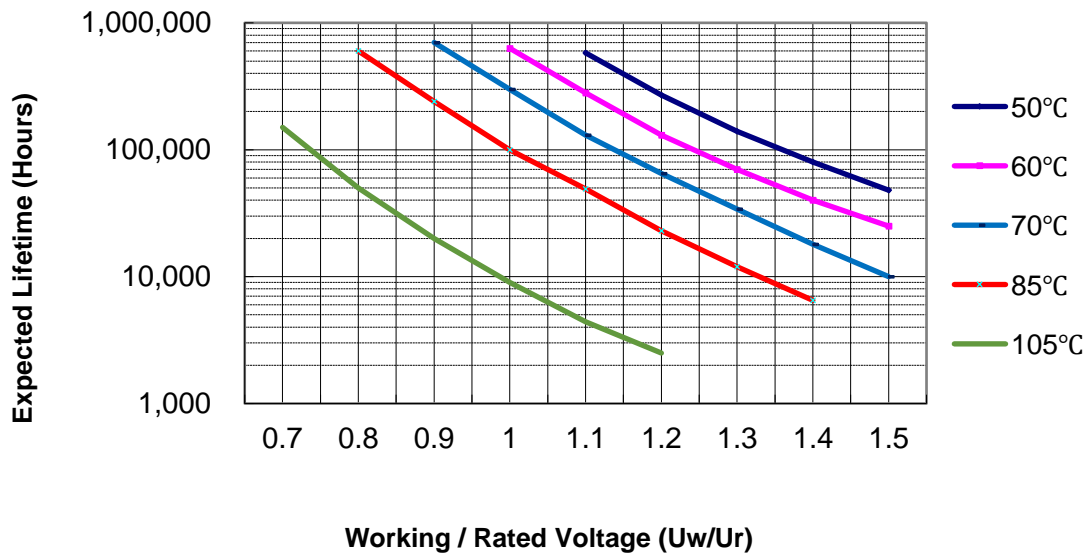
Metallized Film	OPP & Al
Metal Sprayed	Sn/Zn Alloy
Connection Electrode	Tin-plated Copper Wire
Plastic Case	Plastic Case (UL94V-0)
Filling	Epoxy Resin (UL94V-0)
Film Construction	Internal Series Construction 



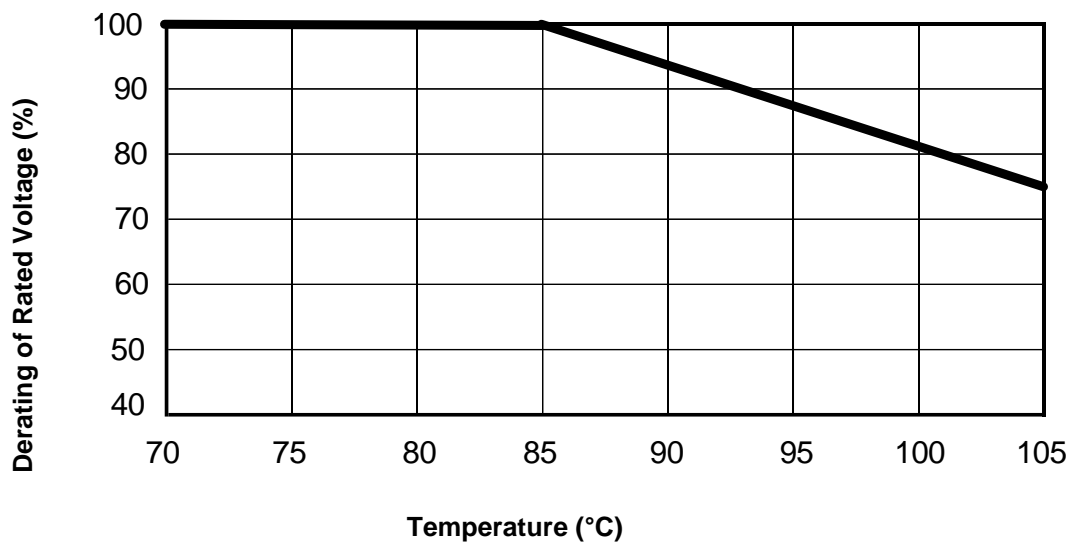
### Electrical Characteristics

Voltage Range	630Vdc ~ 2000Vdc
Capacitance Range	0.001uF ~ 4.7uF
Capacitance Tolerance	±5% or ±10% at +25°C
Capacitance	Measuring Frequency at 1kHz Measuring Voltage: 1±0.2V
Standard Atmospheric Conditions for Static Test	<p><b>Ambient temperature</b> 15°C to 35°C (If there is any doubt on the results, the measurements shall be made at +20 +/- 5°C)</p> <p><b>Relative humidity</b> 45% to 75% (If there is any doubt on the results, the measurements shall be made at 60% to 70 %.)</p> <p><b>Air pressure</b> 86 kPa to 106 kPa.</p>
Voltage Between Terminals $U_{TT}$	1.5 x $V_R$ VDC for 60 seconds (between terminations) @ +25°C ±5°C
Voltage Between Terminals and Case $U_{TC}$	2000VAC, 60s (at+25+/-2°C)
Dielectric Dissipation Factor $Tg\delta_0$	≤2×10 <sup>-4</sup>
Dissipation factor	0.0010 (25°C, 1KHz)
Insulation Resistance	R between leads, for C ≤ 0.33 μF at 100 V; 1 min > 100 000 MΩ RC between leads, for C > 0.33 μF at 100 V; 1 min > 30 000 MΩ*μF
Self-Inductance	<1nH per mm of lead spacing
Hot-Spot	≤85°C
Life Expectancy	100,000 hours (UR, Θhotspot=85°C)
Failure Rate	100 Fit
Max. Altitude	2000 m
<b>Overvoltage</b>	<b>Maximum duration within one day</b>
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

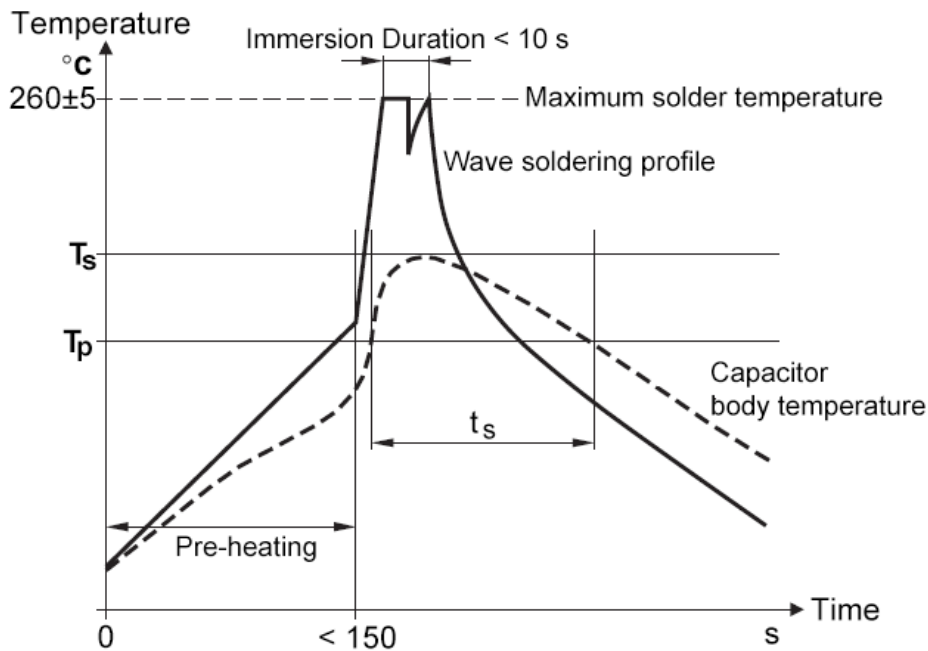
**Expected Life Curve**



**Derating of Rated Voltage Vs Temperature**



**Wave Soldering Recommendations**



$T_s$ : Capacitor body maximum temperature at wave soldering  
 $T_p$ : Capacitor body maximum temperature at pre-heating

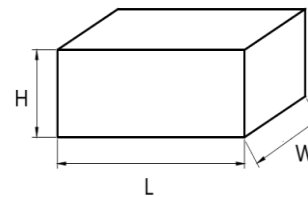
Polypropylene Capacitors	Polyester Capacitors
During pre-heating: $T_p \leq 110^\circ\text{C}$ During soldering: $T_s \leq 120^\circ\text{C}$ , $t_s \leq 60$	During pre-heating: $T_p \leq 130^\circ\text{C}$ During soldering: $T_s \leq 160^\circ\text{C}$ , $t_s \leq 60\text{s}$

# Double Metallized Polypropylene Film Capacitors

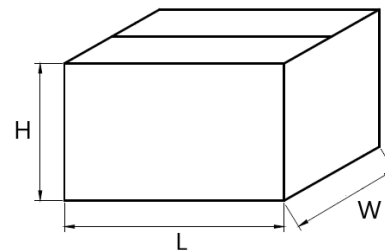
## FSG Series - 630 ~ 2000VDC (THB Grade IIIB, Pulse Capacitors)

### 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	350



### 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
22.5	E47	18	19	11	600	476	300
	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
27.5	F27	26	22	12	300	300	170
	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	
37.5	G34	32	33	18	170	170	
	G40	32	37	22	140	140	
	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	
37.5	K47	42	50	35	63	63	
	K85	42	22	11	196	196	
	K86	42	28.5	16	133	133	

### Cautions 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 pitch 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.

### Disclaimer

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