

Overview

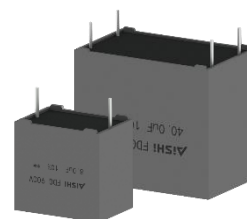
The FDQ series is constructed of metallized polypropylene film encapsulated with epoxy resin in a plastic box, with 2 or 4 tinned copper wire. These FDQ series is suitable for harsh environment condition and qualify in accordance to AEC-Q200 requirement.

Applications

Widely used in high performance DC Link, DC filtering, frequency converter, industrial power supply, solar inverter, energy storage, OBC, DC-DC converter and automotive applications.

Features

- Self-healing
- High capacitance density
- Operating temperature range: -55°C to 105°C
- Lead Space (Pitch): 27.5mm ~ 52.5mm
- High ripple current and low loss
- High contact reliability
- Suitable for high frequency applications
- Suitable for harsh environmental conditions
- THB 2000H - 85°C 85%RH, 2000 Hours, U_{NDC}
- Automotive Grade (AEC-Q200)

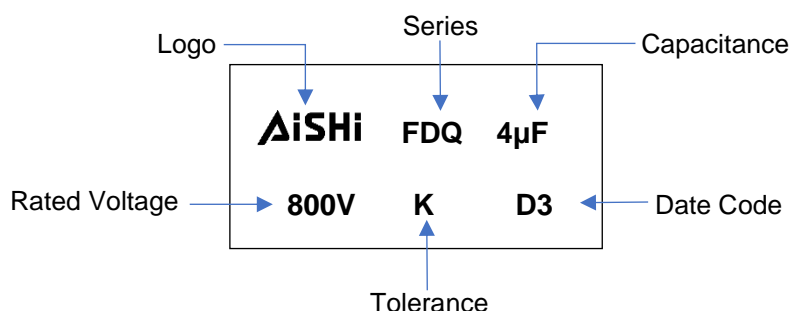


Qualification

Reference Standard	IEC 61071, EN 61071, AEC-Q200
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	DQ	2N	K	405	G22	2GL	5
Capacitor Type	Series	Voltage (VDC)	Tolerance	Capacitance (pF)	Size Code	Terminal Code	Lead Length Code
F = Film	DC Link, AEC-Q200 Type, Metallized PP Film	450=2W 500=2H 550=2J 600=2K 700=2M 800=2N 900=2Q 1000=3K 1100=3M 1200=3B	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

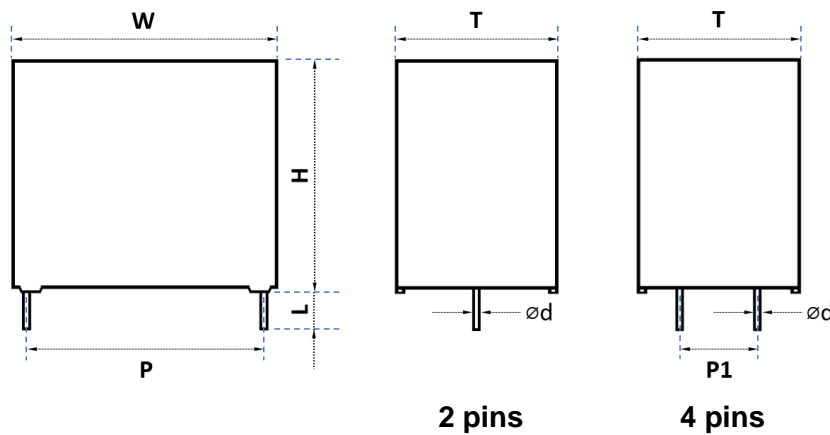
Terminal Code

Digit One (Lead/Terminal Type)	Digit Two (Lead Space)	Digit Three (Lead Ipsilateral)
2 leads for long	L	27.5mm G
2 leads for straight cut	2	37.5mm K
2 leads for forming cut	E	52.5mm M
4 leads for straight cut	4	N/A N
6 leads for straight cut	6	

Lead Length Code

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

Dimension (mm)



Size Code Table (mm)

Size Code	Dimension						Pitch				Ød		
	W	Tolerance	H	Tolerance	T	Tolerance	P	Tolerance	P1	Tolerance	4 Leads	2 Leads	Tolerance
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
G27	32	0.8	24.5	0.8	15	0.8	27.5	0.5	\	\	\	0.8	0.05
G32	32	0.8	30	0.8	16	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
K18	42	1.0	29	1.0	17	1.0	37.5	0.5	\	\	\	1.0	0.05
K21	42	1.0	32	1.0	19	1.0	37.5	0.5	\	\	\	1.0	0.05
K24	42	1.0	40	1.0	20	1.0	37.5	0.5	10.2	0.5	1.2	1.0	0.05
K27	42	1.0	37	1.0	22	1.0	37.5	0.5	10.2	0.5	1.2	1.0	0.05
K32	42	1.0	44	1.0	24	1.0	37.5	0.5	10.2	0.5	1.2	1.0	0.05
K37	42	1.0	37	1.0	28	1.0	37.5	0.5	10.2	0.5	1.2	1.0	0.05
K39	42	1.0	43	1.0	28	1.0	37.5	0.5	10.2	0.5	1.2	1.0	0.05
K42	42	1.0	45	1.0	30	1.0	37.5	0.5	20.3	0.5	1.2	1.0	0.05
K47	42	1.0	50	1.0	35	1.0	37.5	0.5	20.3	0.5	1.2	1.0	0.05
K49	42	1.0	55	1.0	40	1.0	37.5	0.5	20.3	0.5	1.2	1.0	0.05
K52	42	1.0	60	1.0	45	1.0	37.5	0.5	20.3	0.5	1.2	1.0	0.05
K66	42	1.0	30	1.0	17	1.0	37.5	0.5	\	\	\	1.0	0.05
M10	57.5	1.0	45	1.0	25	1.0	52.5	0.5	10.2	0.5	1.2	1.2	0.05
M16	57.5	1.0	45	1.0	30	1.0	52.5	0.5	20.3	0.5	1.2	1.2	0.05
M20	57.5	1.0	50	1.0	35	1.0	52.5	0.5	20.3	0.5	1.2	1.2	0.05
M32	57.5	1.0	55	1.0	45	1.0	52.5	0.5	20.3	0.5	1.2	1.2	0.05
M34	57.5	1.0	65	1.0	45	1.0	52.5	0.5	20.3	0.5	1.2	1.2	0.05

Rating and Part Number

Vdc	Cap Value µF	Dimensions					Irms max (10KHz 70°C) A	Peak Current A	Surge Current A	ESR _{Typical} 10KHz mΩ	ESL nH	Thermal Res °C/W	dv/dt V/us	Lead Wire mm	Part Number
		W mm	H mm	T mm	P mm	P1 mm									
450	5	32	20	11	27.5	\	5	325	975	20.0	25	30.0	65	0.8	FDQ2WK505G182GL5
450	10	32	24.5	15	27.5	\	7	650	1950	11.0	25	27.8	65	0.8	FDQ2WK106G272GL5
450	15	32	33	18	27.5	\	11	975	2925	7.0	25	17.7	65	0.8	FDQ2WK156G342GL5
450	22	32	37	22	27.5	\	11	1430	4290	5.0	28	24.8	65	0.8	FDQ2WK226G402GL5
450	25	32	37	22	27.5	\	12	1625	4875	4.8	28	24.8	65	0.8	FDQ2WK256G402GL5
450	30	42	40	20	37.5	10.2	12.5	1050	3150	7.5	30	12.8	35	1.2	FDQ2WK306K244KB5
450	35	42	37	22	37.5	10.2	13.5	1225	3675	7.0	30	11.8	35	1.2	FDQ2WK356K274KB5
450	40	42	37	28	37.5	10.2	14.5	1400	4200	6.2	30	11.5	35	1.2	FDQ2WK406K374KB5
450	50	42	43	28	37.5	10.2	16	1750	5250	5.0	30	11.7	35	1.2	FDQ2WK506K394KB5
450	50	42	45	30	37.5	20.3	16	1750	5250	5.0	30	11.7	35	1.2	FDQ2WK506K424KD5
450	60	42	45	30	37.5	20.3	16.5	2100	6300	4.5	30	12.2	35	1.2	FDQ2WK606K424KD5
450	80	42	50	35	37.5	20.3	20.5	2800	8400	3.8	30	12.2	35	1.2	FDQ2WK806K474KD5
450	110	42	60	45	37.5	20.3	24.5	3850	11550	3.6	30	12.2	35	1.2	FDQ2WK117K524KD5
450	130	42	60	45	37.5	20.3	28.5	4550	13650	3.0	30	12.2	35	1.2	FDQ2WK137K524KD5
450	75	57.5	45	30	52.5	20.3	16.5	1500	4500	5.5	35	10.0	20	1.2	FDQ2WK756M164MD5
450	80	57.5	45	30	52.5	20.3	17	1600	4800	5.0	35	10.4	20	1.2	FDQ2WK806M164MD5
450	100	57.5	50	35	52.5	20.3	18	2000	6000	4.5	35	10.3	20	1.2	FDQ2WK107M204MD5
450	110	57.5	50	35	52.5	20.3	19	2200	6600	4.0	35	10.4	20	1.2	FDQ2WK117M204MD5
450	120	57.5	50	35	52.5	20.3	21.5	2400	7200	3.8	35	10.4	20	1.2	FDQ2WK127M204MD5
450	160	57.5	55	45	52.5	20.3	28.5	3200	9600	3.0	35	10.4	20	1.2	FDQ2WK167M324MD5
450	200	57.5	65	45	52.5	20.3	33	4000	12000	2.6	35	10.4	20	1.2	FDQ2WK207M344MD5

Rating and Part Number

Vdc	Cap Value µF	Dimensions					Irms max (10KHz 70°C) A	Peak Current A	Surge Current A	ESR _{Typical} 10KHz mΩ	ESL nH	Thermal Res °C/W	dv/dt V/us	Lead Wire mm	Part Number
		W mm	H mm	T mm	P mm	P1 mm									
550	5	32	22	13	27.5	\	5.5	325	975	19.5	25	25.4	65	0.8	FDQ2JK505G212GL5
550	10	32	33	18	27.5	\	7.5	650	1950	10.5	25	25.4	65	0.8	FDQ2JK106G342GL5
550	15	32	37	22	27.5	\	11.5	975	2925	6.8	28	16.7	65	0.8	FDQ2JK156G402GL5
550	22	32	37	22	27.5	\	11.5	1430	4290	4.9	28	23.1	65	0.8	FDQ2JK226G402GL5
550	30	42	44	24	37.5	10.2	13	1050	3150	7.2	30	12.3	35	1.2	FDQ2JK306K324KB5
550	35	42	45	30	37.5	20.3	13.8	1225	3675	6.8	30	11.6	35	1.2	FDQ2JK356K424KD5
550	40	42	45	30	37.5	20.3	14.8	1400	4200	6.0	30	11.4	35	1.2	FDQ2JK406K424KD5
550	50	42	50	35	37.5	20.3	17	1750	5250	4.8	30	10.8	35	1.2	FDQ2JK506K474KD5
550	60	42	50	35	37.5	20.3	18	2100	6300	4.2	30	11.0	35	1.2	FDQ2JK606K474KD5
550	70	42	50	35	37.5	20.3	20.5	2450	7350	3.8	30	11.0	35	1.2	FDQ2JK706K474KD5
550	110	42	60	45	37.5	20.3	24.5	3850	11550	3.6	30	11.0	35	1.2	FDQ2JK117K524KD5
550	75	57.5	45	30	52.5	20.3	16.8	1500	4500	5.2	35	10.2	20	1.2	FDQ2JK756M164MD5
550	100	57.5	50	35	52.5	20.3	18.5	2000	6000	4.3	35	10.2	20	1.2	FDQ2JK107M204MD5
550	110	57.5	50	35	52.5	20.3	20	2200	6600	4.0	35	9.4	20	1.2	FDQ2JK117M204MD5
550	140	57.5	55	45	52.5	20.3	26	2800	8400	3.5	35	6.3	20	1.2	FDQ2JK147M324MD5
550	170	57.5	65	45	52.5	20.3	32	3400	10200	2.8	35	5.2	20	1.2	FDQ2JK177M344MD5
550	180	57.5	65	45	52.5	20.3	33	3600	10800	2.6	35	5.2	20	1.2	FDQ2JK187M344MD5

Metallized Polypropylene Film DC-Link Capacitors

FDQ Series – 450VDC ~ 1200VDC (Automotive Grade)



Rating and Part Number

Vdc	Cap Value µF	Dimensions					Irms max (10KHz 70°C) A	Peak Current A	Surge Current A	ESR _{Typical} 10KHz mΩ	ESL nH	Thermal Res °C/W	dv/dt V/us	Lead Wire mm	Part Number
		W	H	T	P	P1									
		mm	mm	mm	mm	mm									
600	2	32	18	9	27.5	\	2.9	130	390	40.0	25	44.6	65	0.8	FDQ2KK205G152GL5
600	3	32	20	11	27.5	\	4	195	585	28.0	25	33.5	65	0.8	FDQ2KK305G182GL5
600	4	32	20	11	27.5	\	5.5	260	780	23.0	25	21.6	65	0.8	FDQ2KK405G182GL5
600	5	32	22	13	27.5	\	7	325	975	14.5	25	21.1	65	0.8	FDQ2KK505G212GL5
600	6	32	24.5	15	27.5	\	7.3	390	1170	13.0	25	21.7	65	0.8	FDQ2KK605G272GL5
600	7	32	24.5	15	27.5	\	8.5	455	1365	12.0	25	17.3	65	0.8	FDQ2KK705G272GL5
600	8	32	28	14	27.5	\	9.5	520	1560	11.0	25	15.1	65	0.8	FDQ2KK805G262GL5
600	9	32	30	16	27.5	\	10.5	585	1755	10.5	25	13.0	65	0.8	FDQ2KK905G322GL5
600	10	32	30	16	27.5	\	11	650	1950	10.0	25	12.4	65	0.8	FDQ2KK106G322GL5
600	12	32	33	18	27.5	\	12	780	2340	9.5	25	11.0	65	0.8	FDQ2KK126G342GL5
600	15	32	37	22	27.5	\	12	975	2925	9.5	28	11.0	65	0.8	FDQ2KK156G402GL5
600	15	32	37	22	27.5	10.2	14.5	975	2925	7.0	28	10.2	65	1.0	FDQ2KK156G404GB5
600	18	32	37	22	27.5	\	12.5	1170	3510	9.0	28	10.7	65	0.8	FDQ2KK186G402GL5
600	18	32	37	22	27.5	10.2	16.5	1170	3510	6.0	28	9.2	65	1.0	FDQ2KK186G404GB5
600	10	42	30	17	37.5	\	7	350	1050	18.0	28	17.0	35	1.0	FDQ2KK106K182KL5
600	12	42	30	17	37.5	\	8	420	1260	12.0	28	19.5	35	1.0	FDQ2KK126K182KL5
600	15	42	32	19	37.5	\	9.5	525	1575	11.0	28	15.1	35	1.0	FDQ2KK156K212KL5
600	20	42	40	20	37.5	10.2	12.5	700	2100	9.0	30	10.7	35	1.2	FDQ2KK206K244KB5
600	22	42	40	20	37.5	10.2	13.5	770	2310	8.0	30	10.3	35	1.2	FDQ2KK226K244KB5
600	25	42	40	20	37.5	10.2	15.5	875	2625	7.0	30	8.9	35	1.2	FDQ2KK256K244KB5
600	30	42	44	24	37.5	10.2	16.5	1050	3150	6.5	30	8.5	35	1.2	FDQ2KK306K324KB5
600	35	42	45	30	37.5	20.3	18.5	1225	3675	6.0	30	7.3	35	1.2	FDQ2KK356K424KD5
600	40	42	45	30	37.5	20.3	20.5	1400	4200	5.0	30	7.1	35	1.2	FDQ2KK406K424KD5
600	45	42	50	35	37.5	20.3	23	1575	4725	4.5	30	6.3	35	1.2	FDQ2KK456K474KD5
600	50	42	50	35	37.5	20.3	25	1750	5250	4.0	30	6.0	35	1.2	FDQ2KK506K474KD5
600	60	42	55	40	37.5	20.3	27	2100	6300	3.8	30	5.4	35	1.2	FDQ2KK606K494KD5
600	70	42	55	40	37.5	20.3	29	2450	7350	3.5	30	5.1	35	1.2	FDQ2KK706K494KD5
600	75	42	60	45	37.5	20.3	30	2625	7875	3.0	30	5.6	35	1.2	FDQ2KK756K524KD5
600	80	42	60	45	37.5	20.3	32	2800	8400	2.8	30	5.2	35	1.2	FDQ2KK806K524KD5
600	85	42	60	45	37.5	20.3	34	2975	8925	2.5	30	5.2	35	1.2	FDQ2KK856K524KD5
600	40	57.5	45	25	52.5	10.2	13.5	800	2400	8.0	35	10.3	20	1.2	FDQ2KK406M104MB5
600	45	57.5	45	25	52.5	10.2	14	900	2700	7.5	35	10.2	20	1.2	FDQ2KK456M104MB5
600	50	57.5	45	25	52.5	10.2	15.5	1000	3000	7.0	35	8.9	20	1.2	FDQ2KK506M104MB5
600	55	57.5	45	30	52.5	20.3	17	1100	3300	6.2	35	8.4	20	1.2	FDQ2KK556M164MD5
600	60	57.5	45	30	52.5	20.3	18.5	1200	3600	6.0	35	7.3	20	1.2	FDQ2KK606M164MD5
600	65	57.5	50	35	52.5	20.3	20	1300	3900	5.5	35	6.8	20	1.2	FDQ2KK656M204MD5
600	70	57.5	50	35	52.5	20.3	21.5	1400	4200	5.0	35	6.5	20	1.2	FDQ2KK706M204MD5
600	75	57.5	50	35	52.5	20.3	23.5	1500	4500	4.5	35	6.0	20	1.2	FDQ2KK756M204MD5
600	80	57.5	50	35	52.5	20.3	24.5	1600	4800	4.2	35	5.9	20	1.2	FDQ2KK806M204MD5
600	90	57.5	55	45	52.5	20.3	26	1800	5400	4.0	35	5.5	20	1.2	FDQ2KK906M324MD5
600	100	57.5	55	45	52.5	20.3	29	2000	6000	3.4	35	5.2	20	1.2	FDQ2KK107M324MD5
600	110	57.5	55	45	52.5	20.3	30	2200	6600	3.0	35	5.6	20	1.2	FDQ2KK117M324MD5
600	120	57.5	65	45	52.5	20.3	32	2400	7200	2.8	35	5.2	20	1.2	FDQ2KK127M344MD5
600	130	57.5	65	45	52.5	20.3	33	2600	7800	2.6	35	5.3	20	1.2	FDQ2KK137M344MD5
600	140	57.5	65	45	52.5	20.3	34	2800	8400	2.5	35	5.2	20	1.2	FDQ2KK147M344MD5

Rating and Part Number

Vdc	Cap Value µF	Dimensions					Irms max (10KHz 70°C) A	Peak Current A	Surge Current A	ESR _{Typical} 10KHz mΩ	ESL nH	Thermal Res °C/W	dv/dt V/us	Lead Wire mm	Part Number
		W	H	T	P	P1									
		mm	mm	mm	mm	mm									
700	2	32	18	9	27.5	\	2.9	130	390	40.0	25	44.6	65	0.8	FDQ2MK205G152GL5
700	3	32	20	11	27.5	\	4	195	585	28.0	25	33.5	65	0.8	FDQ2MK305G182GL5
700	4	32	20	11	27.5	\	5.5	260	780	23.0	25	21.6	65	0.8	FDQ2MK405G182GL5
700	5	32	22	13	27.5	\	7	325	975	14.5	25	21.1	65	0.8	FDQ2MK505G212GL5
700	6	32	24.5	15	27.5	\	7.3	390	1170	13.0	25	21.7	65	0.8	FDQ2MK605G272GL5
700	7	32	24.5	15	27.5	\	8.5	455	1365	12.0	25	17.3	65	0.8	FDQ2MK705G272GL5
700	8	32	28	14	27.5	\	9.5	520	1560	11.0	25	15.1	65	0.8	FDQ2MK805G262GL5
700	9	32	30	16	27.5	\	10.5	585	1755	10.5	25	13.0	65	0.8	FDQ2MK905G322GL5
700	10	32	30	16	27.5	\	11	650	1950	10.0	25	12.4	65	0.8	FDQ2MK106G322GL5
700	12	32	33	18	27.5	\	12	780	2340	9.5	25	11.0	65	0.8	FDQ2MK126G342GL5
700	15	32	37	22	27.5	\	12	975	2925	9.5	28	11.0	65	0.8	FDQ2MK156G402GL5
700	15	32	37	22	27.5	10.2	14.5	975	2925	7.0	28	10.2	65	1.0	FDQ2MK156G404GB5
700	18	32	37	22	27.5	\	12.5	1170	3510	9.0	28	10.7	65	0.8	FDQ2MK186G402GL5
700	18	32	37	22	27.5	10.2	16.5	1170	3510	6.0	28	9.2	65	1.0	FDQ2MK186G404GB5
700	10	42	30	17	37.5	\	7	350	1050	18.0	28	17.0	35	1.0	FDQ2MK106K182KL5
700	12	42	30	17	37.5	\	8	420	1260	12.0	28	19.5	35	1.0	FDQ2MK126K182KL5
700	15	42	32	19	37.5	\	9.5	525	1575	11.0	28	15.1	35	1.0	FDQ2MK156K212KL5
700	20	42	40	20	37.5	10.2	12.5	700	2100	9.0	30	10.7	35	1.2	FDQ2MK206K244KB5
700	22	42	40	20	37.5	10.2	13.5	770	2310	8.0	30	10.3	35	1.2	FDQ2MK226K244KB5
700	25	42	40	20	37.5	10.2	15.5	875	2625	7.0	30	8.9	35	1.2	FDQ2MK256K244KB5
700	30	42	44	24	37.5	10.2	16.5	1050	3150	6.5	30	8.5	35	1.2	FDQ2MK306K324KB5
700	35	42	45	30	37.5	20.3	18.5	1225	3675	6.0	30	7.3	35	1.2	FDQ2MK356K424KD5
700	40	42	45	30	37.5	20.3	20.5	1400	4200	5.0	30	7.1	35	1.2	FDQ2MK406K424KD5
700	45	42	50	35	37.5	20.3	23	1575	4725	4.5	30	6.3	35	1.2	FDQ2MK456K474KD5
700	50	42	50	35	37.5	20.3	25	1750	5250	4.0	30	6.0	35	1.2	FDQ2MK506K474KD5
700	60	42	55	40	37.5	20.3	27	2100	6300	3.8	30	5.4	35	1.2	FDQ2MK606K494KD5
700	70	42	55	40	37.5	20.3	29	2450	7350	3.5	30	5.1	35	1.2	FDQ2MK706K494KD5
700	75	42	60	45	37.5	20.3	30	2625	7875	3.0	30	5.6	35	1.2	FDQ2MK756K524KD5
700	80	42	60	45	37.5	20.3	32	2800	8400	2.8	30	5.2	35	1.2	FDQ2MK806K524KD5
700	85	42	60	45	37.5	20.3	34	2975	8925	2.5	30	5.2	35	1.2	FDQ2MK856K524KD5
700	40	57.5	45	25	52.5	10.2	13.5	800	2400	8.0	35	10.3	20	1.2	FDQ2MK406M104MB5
700	45	57.5	45	25	52.5	10.2	14	900	2700	7.5	35	10.2	20	1.2	FDQ2MK456M104MB5
700	50	57.5	45	25	52.5	10.2	15.5	1000	3000	7.0	35	8.9	20	1.2	FDQ2MK506M104MB5
700	55	57.5	45	30	52.5	20.3	17	1100	3300	6.2	35	8.4	20	1.2	FDQ2MK556M164MD5
700	60	57.5	45	30	52.5	20.3	18.5	1200	3600	6.0	35	7.3	20	1.2	FDQ2MK606M164MD5
700	65	57.5	50	35	52.5	20.3	20	1300	3900	5.5	35	6.8	20	1.2	FDQ2MK656M204MD5
700	70	57.5	50	35	52.5	20.3	21.5	1400	4200	5.0	35	6.5	20	1.2	FDQ2MK706M204MD5
700	75	57.5	50	35	52.5	20.3	23.5	1500	4500	4.5	35	6.0	20	1.2	FDQ2MK756M204MD5
700	80	57.5	50	35	52.5	20.3	24.5	1600	4800	4.2	35	5.9	20	1.2	FDQ2MK806M204MD5
700	90	57.5	55	45	52.5	20.3	26	1800	5400	4.0	35	5.5	20	1.2	FDQ2MK906M324MD5
700	100	57.5	55	45	52.5	20.3	29	2000	6000	3.4	35	5.2	20	1.2	FDQ2MK107M324MD5
700	110	57.5	55	45	52.5	20.3	30	2200	6600	3.0	35	5.6	20	1.2	FDQ2MK117M324MD5
700	120	57.5	65	45	52.5	20.3	32	2400	7200	2.8	35	5.2	20	1.2	FDQ2MK127M344MD5
700	130	57.5	65	45	52.5	20.3	33	2600	7800	2.6	35	5.3	20	1.2	FDQ2MK137M344MD5
700	140	57.5	65	45	52.5	20.3	34	2800	8400	2.5	35	5.2	20	1.2	FDQ2MK147M344MD5

Metallized Polypropylene Film DC-Link Capacitors

FDQ Series – 450VDC ~ 1200VDC (Automotive Grade)



Rating and Part Number

Vdc	Cap Value µF	Dimensions					Irms max (10KHz 70°C) A	Peak Current A	Surge Current A	ESR _{Typical} 10KHz mΩ	ESL nH	Thermal Res °C/W	dv/dt V/us	Lead Wire mm	Part Number
		W	H	T	P	P1									
		mm	mm	mm	mm	mm									
800	2	32	18	9	27.5	\	2.9	130	390	40.0	25	44.6	65	0.8	FDQ2NK205G152GL5
800	3	32	20	11	27.5	\	4.5	195	585	26.0	25	28.5	65	0.8	FDQ2NK305G182GL5
800	4	32	24.5	13	27.5	\	5.8	260	780	22.0	25	20.3	65	0.8	FDQ2NK405G222GL5
800	5	32	24.5	15	27.5	\	7.5	325	975	14.0	25	19.0	65	0.8	FDQ2NK505G272GL5
800	6	32	30	16	27.5	\	8.5	390	1170	12.0	25	17.3	65	0.8	FDQ2NK605G322GL5
800	7	32	30	16	27.5	\	9.5	455	1365	11.0	25	15.1	65	0.8	FDQ2NK705G322GL5
800	8	32	33	18	27.5	\	10.5	520	1560	10.5	25	13.0	65	0.8	FDQ2NK805G342GL5
800	9	32	33	18	27.5	\	11.5	585	1755	10.2	25	11.1	65	0.8	FDQ2NK905G342GL5
800	10	32	37	22	27.5	\	12	650	1950	9.5	25	11.0	65	0.8	FDQ2NK106G402GL5
800	10	32	37	22	27.5	10.2	14	650	1950	8.5	25	9.0	65	1.0	FDQ2NK106G404GB5
800	12	32	37	22	27.5	\	12	780	2340	9.5	25	11.0	65	0.8	FDQ2NK126G402GL5
800	12	32	37	22	27.5	10.2	15	780	2340	8.0	25	8.3	65	1.0	FDQ2NK126G404GB5
800	14	32	37	22	27.5	\	12	910	2730	9.5	25	11.0	65	0.8	FDQ2NK146G402GL5
800	14	32	37	22	27.5	10.2	16	910	2730	7.5	25	7.8	65	1.0	FDQ2NK146G404GB5
800	8	42	30	17	37.5	\	5.5	280	840	22.5	28	22.0	35	1.0	FDQ2NK805K182KL5
800	9	42	30	17	37.5	\	6	315	945	21.5	28	19.4	35	1.0	FDQ2NK905K182KL5
800	10	42	32	19	37.5	\	7	350	1050	18.0	28	17.0	35	1.0	FDQ2NK106K212KL5
800	12	42	32	19	37.5	\	8	420	1260	12.0	28	19.5	35	1.0	FDQ2NK126K212KL5
800	14	42	32	19	37.5	\	9.5	490	1470	11.0	28	15.1	35	1.0	FDQ2NK146K212KL5
800	15	42	40	20	37.5	10.2	12.5	525	1575	9.0	30	10.7	35	1.2	FDQ2NK156K244KB5
800	20	42	44	24	37.5	10.2	13.5	700	2100	8.0	30	10.3	35	1.2	FDQ2NK206K324KB5
800	25	42	44	24	37.5	10.2	16.5	875	2625	6.5	30	8.5	35	1.2	FDQ2NK256K324KB5
800	30	42	45	30	37.5	20.3	20	1050	3150	5.8	30	6.5	35	1.2	FDQ2NK306K424KD5
800	35	42	50	35	37.5	20.3	22	1225	3675	5.5	30	5.6	35	1.2	FDQ2NK356K474KD5
800	40	42	50	35	37.5	20.3	25	1400	4200	4.8	30	5.0	35	1.2	FDQ2NK406K474KD5
800	45	42	55	40	37.5	20.3	28	1575	4725	4.0	30	4.8	35	1.2	FDQ2NK456K494KD5
800	50	42	55	40	37.5	20.3	31	1750	5250	3.6	30	4.3	35	1.2	FDQ2NK506K494KD5
800	55	42	60	45	37.5	20.3	32.5	1925	5775	3.4	30	4.2	35	1.2	FDQ2NK556K524KD5
800	60	42	60	45	37.5	20.3	34	2100	6300	3.2	30	4.1	35	1.2	FDQ2NK606K524KD5
800	65	42	60	45	37.5	20.3	35	2275	6825	2.8	30	4.4	35	1.2	FDQ2NK656K524KD5
800	25	57.5	45	25	52.5	10.2	8.5	500	1500	12.0	35	17.3	20	1.2	FDQ2NK256M104MB5
800	30	57.5	45	25	52.5	10.2	10	600	1800	10.5	35	14.3	20	1.2	FDQ2NK306M104MB5
800	35	57.5	45	25	52.5	10.2	12	700	2100	9.5	35	11.0	20	1.2	FDQ2NK356M104MB5
800	40	57.5	45	30	52.5	20.3	14	800	2400	8.5	35	9.0	20	1.2	FDQ2NK406M164MD5
800	45	57.5	45	30	52.5	20.3	15.5	900	2700	7.0	35	8.9	20	1.2	FDQ2NK456M164MD5
800	50	57.5	50	35	52.5	20.3	17	1000	3000	5.8	35	8.9	20	1.2	FDQ2NK506M204MD5
800	55	57.5	50	35	52.5	20.3	19	1100	3300	5.5	35	7.6	20	1.2	FDQ2NK556M204MD5
800	60	57.5	50	35	52.5	20.3	21	1200	3600	4.8	35	7.1	20	1.2	FDQ2NK606M204MD5
800	65	57.5	55	45	52.5	20.3	22.5	1300	3900	4.6	35	6.4	20	1.2	FDQ2NK656M324MD5
800	70	57.5	55	45	52.5	20.3	24	1400	4200	4.5	35	5.8	20	1.2	FDQ2NK706M324MD5
800	75	57.5	55	45	52.5	20.3	25.5	1500	4500	4.3	35	5.4	20	1.2	FDQ2NK756M324MD5
800	80	57.5	55	45	52.5	20.3	26	1600	4800	4.2	35	5.3	20	1.2	FDQ2NK806M324MD5
800	90	57.5	55	45	52.5	20.3	27.5	1800	5400	4.0	35	5.0	20	1.2	FDQ2NK906M324MD5
800	100	57.5	65	45	52.5	20.3	31.5	2000	6000	3.2	35	4.7	20	1.2	FDQ2NK107M344MD5
800	110	57.5	65	45	52.5	20.3	34	2200	6600	3.0	35	4.3	20	1.2	FDQ2NK117M344MD5

Metallized Polypropylene Film DC-Link Capacitors

FDQ Series – 450VDC ~ 1200VDC (Automotive Grade)



Rating and Part Number

Vdc	Cap Value µF	Dimensions					Irms max (10KHz 70°C) A	Peak Current A	Surge Current A	ESR _{Typical} 10KHz mΩ	ESL nH	Thermal Res °C/W	dv/dt V/us	Lead Wire mm	Part Number
		W mm	H mm	T mm	P mm	P1 mm									
900	1	32	18	9	27.5	\	2	70	210	65.0	25	57.7	70	0.8	FDQ2QK105G152GL5
900	2	32	20	11	27.5	\	3.2	140	420	38.0	25	38.5	70	0.8	FDQ2QK205G182GL5
900	3	32	22	13	27.5	\	4.8	210	630	30.0	25	21.7	70	0.8	FDQ2QK305G212GL5
900	4	32	24.5	15	27.5	\	6	280	840	20.5	25	20.3	70	0.8	FDQ2QK405G272GL5
900	5	32	30	16	27.5	\	7.5	350	1050	12.0	25	22.2	70	0.8	FDQ2QK505G322GL5
900	6	32	33	18	27.5	\	7.8	420	1260	11.5	25	21.4	70	0.8	FDQ2QK605G342GL5
900	7	32	33	18	27.5	\	10.5	490	1470	10.2	25	13.3	70	0.8	FDQ2QK705G342GL5
900	8	32	37	22	27.5	\	11.5	560	1680	9.5	25	11.9	70	0.8	FDQ2QK805G402GL5
900	8	32	37	22	27.5	10.2	12.5	560	1680	9.0	25	10.7	70	1.0	FDQ2QK805G404GB5
900	9	32	37	22	27.5	\	11.8	630	1890	9.7	25	11.1	70	0.8	FDQ2QK905G402GL5
900	9	32	37	22	27.5	10.2	14	630	1890	7.8	25	9.8	70	1.0	FDQ2QK905G404GB5
900	10	32	37	22	27.5	\	12	700	2100	9.5	25	11.0	70	0.8	FDQ2QK106G402GL5
900	10	32	37	22	27.5	10.2	15.5	700	2100	7.2	25	8.7	70	1.0	FDQ2QK106G404GB5
900	5	42	30	17	37.5	\	3.8	175	525	28.0	28	37.1	35	1.0	FDQ2QK505K182KL5
900	6	42	30	17	37.5	\	4.5	210	630	25.0	28	29.6	35	1.0	FDQ2QK605K182KL5
900	7	42	30	17	37.5	\	5	245	735	22.0	28	27.3	35	1.0	FDQ2QK705K182KL5
900	8	42	32	19	37.5	\	6	280	840	19.5	28	21.4	35	1.0	FDQ2QK805K212KL5
900	10	42	40	20	37.5	10.2	7.5	350	1050	13.0	30	20.5	35	1.2	FDQ2QK106K244KB5
900	12	42	37	22	37.5	10.2	9	420	1260	11.5	30	16.1	35	1.2	FDQ2QK126K274KB5
900	15	42	44	24	37.5	10.2	10.5	525	1575	10.5	30	13.0	35	1.2	FDQ2QK156K324KB5
900	18	42	44	24	37.5	10.2	13	630	1890	8.8	30	10.1	35	1.2	FDQ2QK186K324KB5
900	20	42	44	24	37.5	10.2	14.5	700	2100	7.5	30	9.5	35	1.2	FDQ2QK206K324KB5
900	25	42	45	30	37.5	20.3	17.5	875	2625	6.2	30	7.9	35	1.2	FDQ2QK256K424KD5
900	30	42	50	35	37.5	20.3	21.5	1050	3150	5.0	30	6.5	35	1.2	FDQ2QK306K474KD5
900	35	42	55	40	37.5	20.3	23	1225	3675	4.6	30	6.2	35	1.2	FDQ2QK356K494KD5
900	40	42	55	40	37.5	20.3	26.5	1400	4200	3.9	30	5.5	35	1.2	FDQ2QK406K494KD5
900	45	42	60	45	37.5	20.3	30	1575	4725	3.4	30	4.9	35	1.2	FDQ2QK456K524KD5
900	50	42	60	45	37.5	20.3	33.5	1750	5250	3.0	30	4.5	35	1.2	FDQ2QK506K524KD5
900	15	57.5	45	25	52.5	10.2	5.5	300	900	22.0	35	22.5	20	1.2	FDQ2QK156M104MB5
900	20	57.5	45	25	52.5	10.2	7.5	400	1200	13.5	35	19.8	20	1.2	FDQ2QK206M104MB5
900	25	57.5	45	25	52.5	10.2	9	500	1500	11.5	35	16.1	20	1.2	FDQ2QK256M104MB5
900	30	57.5	45	30	52.5	20.3	11	600	1800	10.0	35	12.4	20	1.2	FDQ2QK306M164MD5
900	35	57.5	45	30	52.5	20.3	12.5	700	2100	9.0	35	10.7	20	1.2	FDQ2QK356M164MD5
900	40	57.5	50	35	52.5	20.3	14.5	800	2400	7.5	35	9.5	20	1.2	FDQ2QK406M204MD5
900	45	57.5	50	35	52.5	20.3	16	900	2700	6.8	35	8.6	20	1.2	FDQ2QK456M204MD5
900	50	57.5	50	35	52.5	20.3	18	1000	3000	6.4	35	7.2	20	1.2	FDQ2QK506M204MD5
900	55	57.5	55	45	52.5	20.3	20	1100	3300	5.6	35	6.7	20	1.2	FDQ2QK556M324MD5
900	60	57.5	55	45	52.5	20.3	21.5	1200	3600	4.8	35	6.8	20	1.2	FDQ2QK606M324MD5
900	65	57.5	55	45	52.5	20.3	23	1300	3900	4.5	35	6.3	20	1.2	FDQ2QK656M324MD5
900	70	57.5	65	45	52.5	20.3	25	1400	4200	4.0	35	6.0	20	1.2	FDQ2QK706M344MD5
900	75	57.5	65	45	52.5	20.3	25.5	1500	4500	3.9	35	5.9	20	1.2	FDQ2QK756M344MD5
900	80	57.5	65	45	52.5	20.3	26.5	1600	4800	3.8	35	5.6	20	1.2	FDQ2QK806M344MD5
900	85	57.5	65	45	52.5	20.3	28.5	1700	5100	3.6	35	5.1	20	1.2	FDQ2QK856M344MD5

Rating and Part Number

Vdc	Cap Value μF	Dimensions					Irms max (10KHz 70°C) A	Peak Current A	Surge Current A	ESR _{Typical} 10KHz mΩ	ESL nH	Thermal Res °C/W	dv/dt V/us	Lead Wire mm	Part Number
		W mm	H mm	T mm	P mm	P1 mm									
1000	1	32	18	9	27.5	\	2	75	225	65.0	25	57.7	75	0.8	FDQ3KK105G152GL5
1000	2	32	22	13	27.5	\	3.5	150	450	38.0	25	32.2	75	0.8	FDQ3KK205G212GL5
1000	3	32	24.5	15	27.5	\	5	225	675	22.0	25	27.3	75	0.8	FDQ3KK305G272GL5
1000	4	32	30	16	27.5	\	7	300	900	16.5	25	18.6	75	0.8	FDQ3KK405G322GL5
1000	5	32	33	18	27.5	\	8.5	375	1125	12.5	25	16.6	75	0.8	FDQ3KK505G342GL5
1000	6	32	33	18	27.5	\	9	450	1350	11.5	25	16.1	75	0.8	FDQ3KK605G342GL5
1000	7	32	37	22	27.5	\	9.5	525	1575	11.0	25	15.1	75	0.8	FDQ3KK705G402GL5
1000	7	32	37	22	27.5	10.2	11.5	525	1575	9.8	25	11.6	75	1.0	FDQ3KK705G404GB5
1000	8	32	37	22	27.5	\	10.5	600	1800	10.5	25	13.0	75	0.8	FDQ3KK805G402GL5
1000	8	32	37	22	27.5	10.2	13	600	1800	8.8	25	10.1	75	1.0	FDQ3KK805G404GB5
1000	5	42	30	17	37.5	\	3.8	175	525	28.0	28	37.1	35	1.0	FDQ3KK505K182KL5
1000	6	42	30	17	37.5	\	4.5	210	630	25.0	28	29.6	35	1.0	FDQ3KK605K182KL5
1000	7	42	30	17	37.5	\	5	245	735	22.0	28	27.3	35	1.0	FDQ3KK705K182KL5
1000	8	42	32	19	37.5	\	6	280	840	19.5	28	21.4	35	1.0	FDQ3KK805K212KL5
1000	10	42	40	20	37.5	10.2	7.5	350	1050	13.0	30	20.5	35	1.2	FDQ3KK106K244KB5
1000	12	42	37	22	37.5	10.2	9	420	1260	11.5	30	16.1	35	1.2	FDQ3KK126K274KB5
1000	15	42	44	24	37.5	10.2	11.5	525	1575	10.0	30	11.3	35	1.2	FDQ3KK156K324KB5
1000	18	42	45	30	37.5	20.3	14	630	1890	7.8	30	9.8	35	1.2	FDQ3KK186K424KD5
1000	20	42	45	30	37.5	20.3	15.5	700	2100	7.0	30	8.9	35	1.2	FDQ3KK206K424KD5
1000	25	42	50	35	37.5	20.3	19.5	875	2625	5.5	30	7.2	35	1.2	FDQ3KK256K474KD5
1000	30	42	55	40	37.5	20.3	23	1050	3150	4.6	30	6.2	35	1.2	FDQ3KK306K494KD5
1000	35	42	55	40	37.5	20.3	25	1225	3675	4.0	30	6.0	35	1.2	FDQ3KK356K494KD5
1000	40	42	60	45	37.5	20.3	28.5	1400	4200	3.6	30	5.1	35	1.2	FDQ3KK406K524KD5
1000	15	57.5	45	25	52.5	10.2	5.8	300	900	19.8	35	22.5	20	1.2	FDQ3KK156M104MB5
1000	20	57.5	45	25	52.5	10.2	7.5	400	1200	13.5	35	19.8	20	1.2	FDQ3KK206M104MB5
1000	25	57.5	45	25	52.5	10.2	9.5	500	1500	11.0	35	15.1	20	1.2	FDQ3KK256M104MB5
1000	30	57.5	45	30	52.5	20.3	11.5	600	1800	9.8	35	11.6	20	1.2	FDQ3KK306M164MD5
1000	35	57.5	45	30	52.5	20.3	13.5	700	2100	8.0	35	10.3	20	1.2	FDQ3KK356M164MD5
1000	40	57.5	50	35	52.5	20.3	15.5	800	2400	7.0	35	8.9	20	1.2	FDQ3KK406M204MD5
1000	45	57.5	55	45	52.5	20.3	17.5	900	2700	6.2	35	7.9	20	1.2	FDQ3KK456M324MD5
1000	50	57.5	55	45	52.5	20.3	19.5	1000	3000	5.8	35	6.8	20	1.2	FDQ3KK506M324MD5
1000	55	57.5	55	45	52.5	20.3	21	1100	3300	5.0	35	6.8	20	1.2	FDQ3KK556M324MD5
1000	60	57.5	65	45	52.5	20.3	23	1200	3600	4.6	35	6.2	20	1.2	FDQ3KK606M344MD5
1000	65	57.5	65	45	52.5	20.3	25	1300	3900	4.2	35	5.7	20	1.2	FDQ3KK656M344MD5
1000	70	57.5	65	45	52.5	20.3	27	1400	4200	3.8	35	5.4	20	1.2	FDQ3KK706M344MD5

Rating and Part Number

Vdc	Cap Value µF	Dimensions					Irms max (10KHz 70°C) A	Peak Current A	Surge Current A	ESR _{Typical} 10KHz mΩ	ESL nH	Thermal Res °C/W	dv/dt V/us	Lead Wire mm	Part Number
		W mm	H mm	T mm	P mm	P1 mm									
1100	1	32	20	11	27.5	\	2.2	80	240	65.0	25	47.7	80	0.8	FDQ3MK105G182GL5
1100	1.5	32	22	13	27.5	\	2.5	120	360	46.0	25	52.2	80	0.8	FDQ3MK155G212GL5
1100	2	32	24.5	13	27.5	\	4.8	160	480	24.5	25	26.6	80	0.8	FDQ3MK205G222GL5
1100	3	32	30	16	27.5	\	6.5	240	720	18.5	25	19.2	80	0.8	FDQ3MK305G322GL5
1100	4	32	33	18	27.5	\	8.5	320	960	12.5	25	16.6	80	0.8	FDQ3MK405G342GL5
1100	5	32	37	22	27.5	\	9.8	400	1200	10.8	25	14.5	80	0.8	FDQ3MK505G402GL5
1100	5	32	37	22	27.5	10.2	10.5	400	1200	10.5	25	13.0	80	1.0	FDQ3MK505G404GB5
1100	6	32	37	22	27.5	\	10.5	480	1440	10.5	25	13.0	80	0.8	FDQ3MK605G402GL5
1100	6	32	37	22	27.5	10.2	13	480	1440	8.8	25	10.1	80	1.0	FDQ3MK605G404GB5
1100	3	42	30	17	37.5	\	2.5	120	360	46.0	28	52.2	40	1.0	FDQ3MK305K182KL5
1100	4	42	30	17	37.5	\	3.5	160	480	32.5	28	37.7	40	1.0	FDQ3MK405K182KL5
1100	4.7	42	32	19	37.5	\	4	188	564	28.0	28	33.5	40	1.0	FDQ3MK475K212KL5
1100	5	42	32	19	37.5	\	4.2	200	600	26.0	28	32.7	40	1.0	FDQ3MK505K212KL5
1100	6	42	32	19	37.5	\	5	240	720	23.5	28	25.5	40	1.0	FDQ3MK605K212KL5
1100	7	42	40	20	37.5	10.2	6	280	840	18.5	30	22.5	40	1.2	FDQ3MK705K244KB5
1100	8	42	37	22	37.5	10.2	6.5	320	960	16.5	30	21.5	40	1.2	FDQ3MK805K274KB5
1100	9	42	37	22	37.5	10.2	7.5	360	1080	13.0	30	20.5	40	1.2	FDQ3MK905K274KB5
1100	10	42	44	24	37.5	10.2	8.5	400	1200	12.0	30	17.3	40	1.2	FDQ3MK106K324KB5
1100	12	42	44	24	37.5	10.2	10	480	1440	10.8	30	13.9	40	1.2	FDQ3MK126K324KB5
1100	14	42	45	30	37.5	20.3	12	560	1680	9.5	30	11.0	40	1.2	FDQ3MK146K424KD5
1100	15	42	45	30	37.5	20.3	13	600	1800	8.5	30	10.4	40	1.2	FDQ3MK156K424KD5
1100	18	42	50	35	37.5	20.3	15	720	2160	7.0	30	9.5	40	1.2	FDQ3MK186K474KD5
1100	20	42	50	35	37.5	20.3	16.5	800	2400	6.5	30	8.5	40	1.2	FDQ3MK206K474KD5
1100	25	42	55	40	37.5	20.3	20.5	1000	3000	5.0	30	7.1	40	1.2	FDQ3MK256K494KD5
1100	30	42	60	45	37.5	20.3	24.5	1200	3600	4.3	30	5.8	40	1.2	FDQ3MK306K524KD5
1100	15	57.5	45	25	52.5	10.2	6.5	300	900	16.5	35	21.5	20	1.2	FDQ3MK156M104MB5
1100	20	57.5	45	30	52.5	20.3	9	400	1200	11.5	35	16.1	20	1.2	FDQ3MK206M164MD5
1100	25	57.5	50	35	52.5	20.3	11	500	1500	10.0	35	12.4	20	1.2	FDQ3MK256M204MD5
1100	30	57.5	50	35	52.5	20.3	13	600	1800	8.6	35	10.3	20	1.2	FDQ3MK306M204MD5
1100	35	57.5	55	45	52.5	20.3	14.5	700	2100	7.5	35	9.5	20	1.2	FDQ3MK356M324MD5
1100	40	57.5	55	45	52.5	20.3	16	800	2400	6.8	35	8.6	20	1.2	FDQ3MK406M324MD5
1100	45	57.5	55	45	52.5	20.3	17.5	900	2700	6.2	35	7.9	20	1.2	FDQ3MK456M324MD5
1100	50	57.5	65	45	52.5	20.3	19.5	1000	3000	5.6	35	7.0	20	1.2	FDQ3MK506M344MD5
1100	55	57.5	65	45	52.5	20.3	21.5	1100	3300	4.8	35	6.8	20	1.2	FDQ3MK556M344MD5


Rating and Part Number

Vdc	Cap Value μF	Dimensions					Irms max (10KHz 70°C) A	Peak Current A	Surge Current A	ESR _{Typical} 10KHz mΩ	ESL nH	Thermal Res °C/W	dv/dt V/us	Lead Wire mm	Part Number
		W mm	H mm	T mm	P mm	P1 mm									
1200	1	32	20	11	27.5	\	3.5	90	270	35.0	25	35.0	90	0.8	FDQ3BK105G182GL5
1200	2	32	24.5	15	27.5	\	5	180	540	24.0	25	25.0	90	0.8	FDQ3BK205G272GL5
1200	3	32	30	16	27.5	\	7.5	270	810	13.0	25	20.5	90	0.8	FDQ3BK305G322GL5
1200	4	32	33	18	27.5	\	9.5	360	1080	11.0	25	15.1	90	0.8	FDQ3BK405G342GL5
1200	5	32	37	22	27.5	\	10.5	450	1350	10.5	25	13.0	90	0.8	FDQ3BK505G402GL5
1200	5	32	37	22	27.5	10.2	12	450	1350	9.5	25	11.0	90	1.0	FDQ3BK505G404GB5
1200	3	42	30	17	37.5	\	3.2	135	405	35.0	28	41.9	45	1.0	FDQ3BK305K182KL5
1200	4	42	30	17	37.5	\	4.2	180	540	28.0	28	30.4	45	1.0	FDQ3BK405K662KL5
1200	5	42	32	19	37.5	\	5.5	225	675	21.5	28	23.1	45	1.0	FDQ3BK505K212KL5
1200	6	42	40	20	37.5	10.2	6.5	270	810	16.5	30	21.5	45	1.2	FDQ3BK605K244KB5
1200	7	42	37	22	37.5	10.2	7.5	315	945	13.0	30	20.5	45	1.2	FDQ3BK705K274KB5
1200	8	42	44	24	37.5	10.2	8.5	360	1080	12.0	30	17.3	45	1.2	FDQ3BK805K324KB5
1200	9	42	44	24	37.5	10.2	10	405	1215	10.8	30	13.9	45	1.2	FDQ3BK905K324KB5
1200	10	42	44	24	37.5	10.2	11	450	1350	10.0	30	12.4	45	1.2	FDQ3BK106K324KB5
1200	12	42	45	30	37.5	20.3	13	540	1620	8.5	30	10.4	45	1.2	FDQ3BK126K424KD5
1200	15	42	50	35	37.5	20.3	16	675	2025	6.8	30	8.6	45	1.2	FDQ3BK156K474KD5
1200	18	42	50	35	37.5	20.3	18	810	2430	6.2	30	7.5	45	1.2	FDQ3BK186K474KD5
1200	20	42	55	40	37.5	20.3	20	900	2700	5.5	30	6.8	45	1.2	FDQ3BK206K494KD5
1200	25	42	60	45	37.5	20.3	25	1125	3375	4.3	30	5.6	45	1.2	FDQ3BK256K524KD5
1200	12	57.5	45	25	52.5	10.2	6.5	300	900	16.5	35	21.5	25	1.2	FDQ3BK126M104MB5
1200	15	57.5	45	25	52.5	10.2	7.5	375	1125	13.0	35	20.5	25	1.2	FDQ3BK156M104MB5
1200	20	57.5	45	30	52.5	20.3	11	500	1500	10.0	35	12.4	25	1.2	FDQ3BK206M164MD5
1200	25	57.5	50	35	52.5	20.3	13	625	1875	8.6	35	10.3	25	1.2	FDQ3BK256M204MD5
1200	30	57.5	55	45	52.5	20.3	14.5	750	2250	7.5	35	9.5	25	1.2	FDQ3BK306M324MD5
1200	35	57.5	55	45	52.5	20.3	16	875	2625	6.8	35	8.6	25	1.2	FDQ3BK356M324MD5
1200	40	57.5	65	45	52.5	20.3	20	1000	3000	5.5	35	6.8	25	1.2	FDQ3BK406M344MD5
1200	45	57.5	65	45	52.5	20.3	22.5	1125	3375	4.8	35	6.2	25	1.2	FDQ3BK456M344MD5

General Technical Data

Applications	DC Link / DC Filtering
Dielectric	Metallized Polypropylene Film
Reference Standard	IEC 61071/EN 61071/AEC-Q200
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
Flame Retardant Grade	Flame retardant performance accords with horizontal combustion grade HB and vertical combustion grade V-0.
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/Zn
Metal Sprayed	Sn/Zn Alloy
Connection Electrode	Tinned copper wires
Case	Plastic Case (UL94V-0)
Filling	Epoxy Resin (UL94V-0)
Film Construction	Mono Structure 

Electrical Characteristics

Voltage Range	450Vdc ~ 1200Vdc
Capacitance Range	1.0μF ~ 200μF
Capacitance Tolerance	±5% or ±10% at +25°C
Capacitance	Measuring Frequency at 1kHz Measuring Voltage: 1±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 ±5°C
Voltage Between Terminals and Case U_{TC}	3000V _{AC} , 50/60Hz 60s (at +25 +/-5°C)
Dielectric Dissipation Factor $Tg\delta 0$	≤2×10 ⁻⁴
Dissipation factor	≤0.002 (0.2%) at 1KHz; C ≤20μF at 25°C ≤0.003 (0.3%) at 1KHz; C >20μF at 25°C ≤0.004 (0.4%) at 1KHz; C >80μF at 25°C
Insulation Resistance	RC between leads, IR xC≥30,000 s at 100vdc 1minute at +25°C
Self-Inductance	<1nH per mm of lead spacing
Life Expectancy	100,000 hours (UR, Θhotspot=85°C)
Failure Rate	≤100 Fit V_{NDC} at hot spot temperature (T_{HS}) = 85°C
Max. Altitude	4000 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

Environmental Test

Biased Humidity	<p>Test Condition: Test Temperature: +85 +/-2°C Test Humidity: 85% R.H. Loading Voltage: rated voltage Test Duration: 2000 +24/-0 hours After test, allow it stay alone 4 hours at standard temperature and humidity before making measurements.</p> <p>Performance: Capacitance Change Rate ($\Delta C/C$): $\leq \pm 10\%$ Maximum permissible increase of $\tan \delta$ between initial and final measurement: DF Change ($\Delta \text{tg}\delta$): $\leq 150 \times 10^{-4}$ at 1 KHz Insulation Resistance: $\geq 50\%$ of initial limit</p>
Operational Life	<p>Test Conditions: Testing method per IEC 61071 Reference: MIL-STD-202 Method 108 Test Temperature: +85 +/-2°C Apply 130% of rated voltage for 1,000 +24/-0 hours Duration: 500 hours 1000 charges and discharges At 1.4 x I peak (maximum respective peak current in continuous operation) measurement at 24±4 hours after test conclusion</p> <p>Performance: Capacitance Change Rate ($\Delta C/C$): $\leq \pm 5\%$ DF change($\Delta \text{tg}\delta$): $\leq 50 \times 10^{-4}$ at 1 KHz Insulation Resistance: $\geq 50\%$ of initial limit</p>
Temperature Cycle	<p>Test Conditions: Reference: JESD22 Method JA-104 Test Temperature Cycle: Total 1000 cycles High Temperature: +105+/-5°C Low Temperature: -40 +/-5°C 30 min +/- 10% for each temperature. 1 min maximum transition time. measurement at 24±4 hours after test conclusion</p> <p>Performance: Capacitance Change Rate ($\Delta C/C$): $\leq \pm 5\%$ DF change($\Delta \text{tg}\delta$): $\leq 50 \times 10^{-4}$ at 1 KHz Insulation Resistance: $\geq 50\%$ of initial limit</p>
High Temperature Exposure (storage)	<p>Test Conditions: Reference: MIL-STD-202 Method 108 Test Temperature: +105+/-2°C Test Duration: 1000 +24/-0 hours measurement at 24±4 hours after test conclusion</p> <p>Performance: Capacitance Change Rate ($\Delta C/C$): $\leq \pm 3\%$ DF change($\Delta \text{tg}\delta$): $\leq 50 \times 10^{-4}$ at 1 KHz Insulation Resistance: $\geq 50\%$ of initial limit</p>

Environmental Test

<p>Moisture Resistance</p>	<p>Test Conditions: Reference: MIL-STD-202 Method 106 Test Temperature: +40+/-2°C Test Humidity: 90% to 95% R.H. Test Duration: 1344 +24/-0 hours Unpowered measurement at 24±4hours after test conclusion</p> <p>Performance: Capacitance Change Rate ($\Delta C/C$): $\leq \pm 5\%$ DF change ($\Delta \text{tg}\delta$): $\leq 50 \times 10^{-4}$ at 1 KHz. Insulation Resistance: $\geq 50\%$ of initial limit</p>
<p>Solderability</p>	<p>Test Conditions: Reference: J-STD-002 Soldering temperature: +245 +/-5°C Immersion duration: 2 +/-0.5 seconds</p> <p>Performance: More than 95% of circumferential surface of lead wire shall be covered with new solder.</p>
<p>Soldering Heat Resistance</p>	<p>Test Conditions: Reference: MIL-STD-202 Method 210 Flow Soldering: Preheat temperature 100°C~120°C Preheat Duration: 100 seconds maximum Soldering Temperature: +260 +/-5°C Immersion Duration: ≤ 10 seconds Immersion Depth: 1.5 +/- 0.5 mm from roots. Iron Soldering: Soldering Temperature: +400°C Immersion Duration: ≤ 3 seconds After test, allow it stay alone for 1.5 +/- 0.5 hours at standard temperature and humidity before making measurements.</p> <p>Performance: Capacitance Change Rate ($\Delta C/C$): $\leq \pm 0.5\%$ DF change ($\Delta \text{tg}\delta$): $\leq 50 \times 10^{-4}$ at 1 KHz. Insulation Resistance: $\geq 50\%$ of initial limit</p>
<p>Temperature Humidity Cycle</p>	<p>Test Conditions: Reference: MIL-STD-202 Method 106 Test Temperature Cycle: Total 10 cycles Each cycle includes:</p> <ol style="list-style-type: none"> 1. +25 +/-2°C to 65 +/-3°C for 2.5 hours 2. +65 +/-3°C for 3 hours 3. +65 +/-3°C to +25 +/-2°C for 2.5 hours 4. +25 +/-3°C to +65 +/-2°C for 2.5 hours 5. +65 +/-3°C for 3 hours 6. +65 +/-3°C to +25 +/-2°C for 2.5 hours 7. +25 +/-2°C for 8 hours <p>Test Humidity: 90% to 95% R.H.</p> <p>Performance: Capacitance Change Rate ($\Delta C/C$): $\leq \pm 5\%$ DF change ($\Delta \text{tg}\delta$): $\leq 50 \times 10^{-4}$ at 1 KHz. Insulation Resistance: $\geq 50\%$ of initial limit</p>

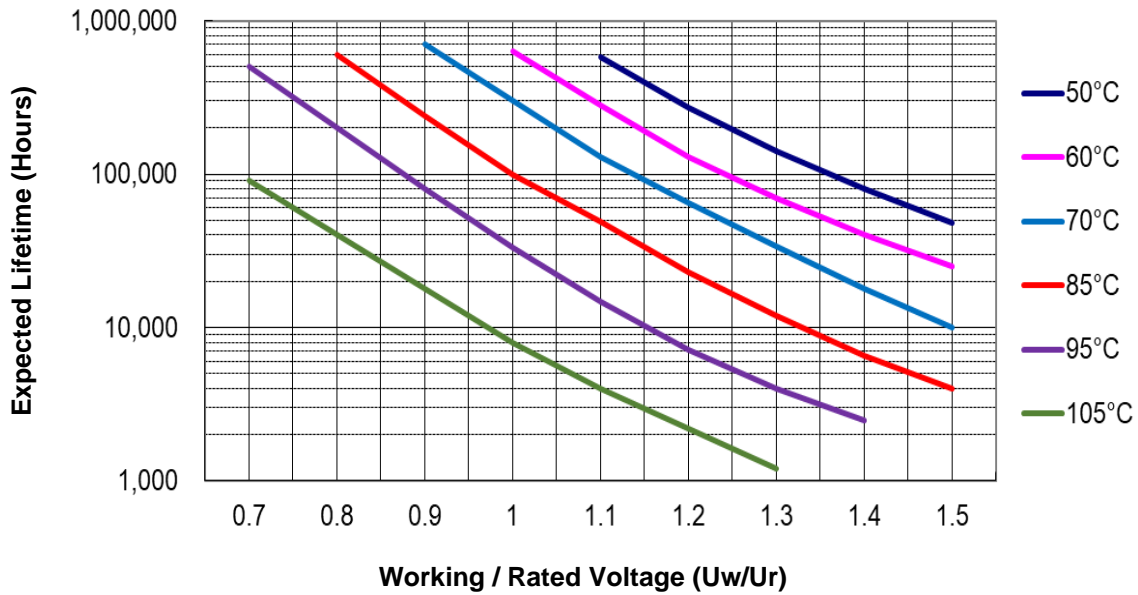
Mechanical Test

Resistance to Solvent	<p>Test Conditions: Reference: MIL-STD-202 Method 215 Solvent: propanol (isopropyl alcohol) Temperature: 23±5°C Immersion time: 5 ±0.5min Drying time: 5 mins Mechanical treatment: 10 rubbing (with cotton-wool)</p> <p>Performance: Capacitance Change Rate ($\Delta C/C$): $\leq \pm 1\%$ DF change ($\Delta \text{tg}\delta$): $\leq 50 \times 10^{-4}$ at 1 KHz. Insulation Resistance: $\geq 50\%$ of initial limit</p>
Terminal Strength	<p>Test Conditions: Reference: MIL-STD-202 Method 211 Tension: 0.50 < D \leq 0.80, 10N 0.80 < D \leq 1.25, 20N Bending test: Bending force: 0.50 < D \leq 0.80, 5N 0.80 < D \leq 1.25, 10N Make two successive bends in each direction</p> <p>Performance: No visible damage to appearance</p>
Vibration Resistance	<p>Test Conditions: Reference: MIL-STD-202 Method 204 5g force 20 minutes, three directions, 12 cycles in each direction. Test Frequency 10~2000 Hz</p> <p>Performance: Connection Strength: Shall be no open nor short-circuiting. The connection shall be stable Capacitance Change Rate ($\Delta C/C$): $\leq \pm 1\%$ DF change ($\Delta \text{tg}\delta$): $\leq 50 \times 10^{-4}$ at 1 KHz. Insulation Resistance: $\geq 50\%$ of initial limit</p>
Mechanical Shock	<p>Test Conditions: Reference: MIL-STD-202 Method 213 Pulse-shape: half-sine wave Acceleration: 500 m/s² Duration of pulse: 11 ms</p> <p>Performance: Capacitance Change Rate ($\Delta C/C$): $\leq \pm 1\%$ DF change ($\Delta \text{tg}\delta$): $\leq 50 \times 10^{-4}$ at 1 KHz. Insulation Resistance: $\geq 50\%$ of initial limit</p>
Bump	<p>Test Conditions: Reference: MIL-STD-202 Method 213 Total number of bumps: 1 000 times or 4 000 times Acceleration: 400 m/s² Pulse duration: 6 ms</p> <p>Performance: Capacitance Change Rate ($\Delta C/C$): $\leq \pm 1\%$ DF change ($\Delta \text{tg}\delta$): $\leq 50 \times 10^{-4}$ at 1 KHz. Insulation Resistance: $\geq 50\%$ of initial limit</p>

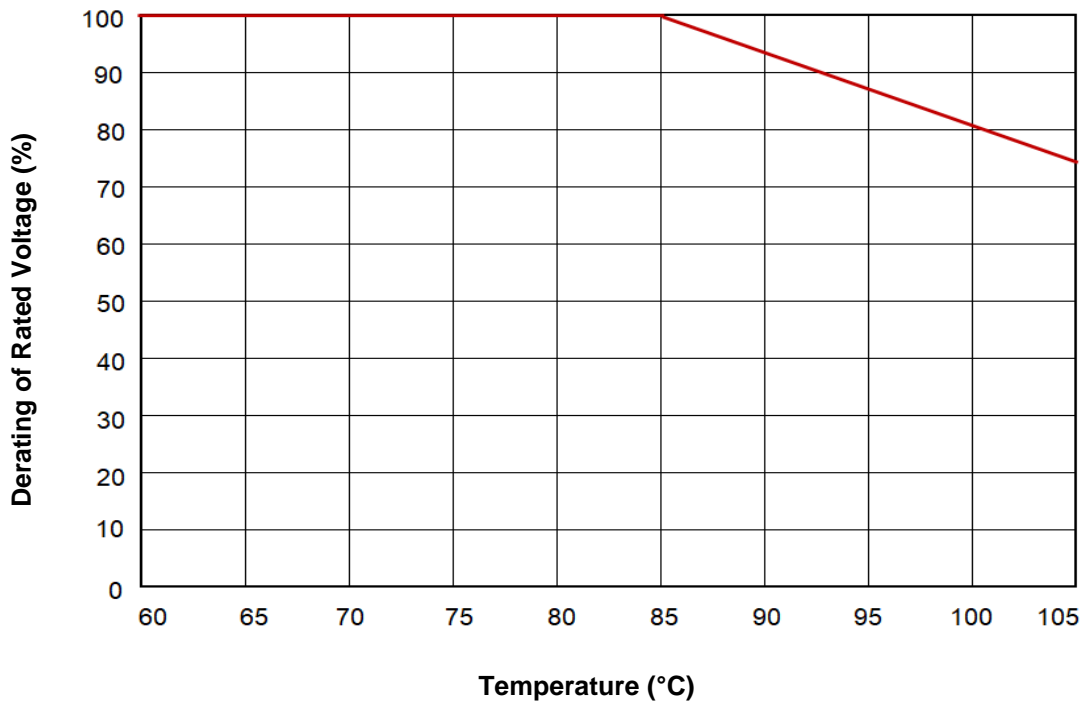
Electrical Test

<p>Self-Healing Test</p>	<p>Test Conditions: Apply 150% of rated voltage Duration: 10 seconds Number of clearings ≤ 5 Clearing = voltage drop of 5 % increase the voltage at 100 V/s till 5 clearings occur with a maximum of $2.5 \times U_{NDC}$ for a duration of 10 seconds Performance: Capacitance Change Rate ($\Delta C/C$): $\leq \pm 2\%$ DF change($\Delta tg\delta$): $\leq 50 \times 10^{-4}$ at 1 KHz. Insulation Resistance: $\geq 50\%$ of initial limit</p>
<p>Surge Discharge Test</p>	<p>Test Conditions: Five charges and discharges in ten minutes. Test voltage: $1.1 U_n$ Test current: 1.1 times the maximum impulse current. The interelectrode withstand voltage was tested within five minutes after the test. Performance: Capacitance Change Rate ($\Delta C/C$): $\leq \pm 1.0\%$ DF change($\Delta tg\delta$): $\leq 50 \times 10^{-4}$ at 1 KHz. Insulation Resistance: $\geq 50\%$ of initial limit</p>
<p>Thermal Stability Test</p>	<p>Test Conditions: Temperature: Ambient temperature Test current: $1.1 I_{rms}$ Test frequency: 10Khz Test time: 48 hours During the last 6 hours, the temperature of the case near the top shall be measured per 1.5h. Performance: Throughout the last 6 hours, the temperature rise of the case near the top shall not increase by more than $1^\circ C$ Capacitance Change Rate ($\Delta C/C$): $\leq \pm 2.0\%$ DF change($\Delta tg\delta$): $\leq 50 \times 10^{-4}$ at 1 KHz. Insulation Resistance: $\geq 50\%$ of initial limit</p>
<p>High Temperature Features</p>	<p>Test Conditions: Test Temperature: $105 \pm 2^\circ C$ Test Duration: $16 \pm 1/0$ hours Performance: Capacitance Change Rate ($\Delta C/C$): $-0\% \sim -5\%$ DF change ($\Delta tg\delta$): $\leq 50 \times 10^{-4}$ at 1 KHz. Insulation Resistance: $\geq 50\%$ of initial limit</p>
<p>Low Temperature Features</p>	<p>Test Conditions: Test Temperature: $-40 \pm 2^\circ C$ Test Duration: $2 \pm 1/0$ hours Performance: Capacitance Change Rate ($\Delta C/C$): $+0\% \sim +5\%$ DF change ($\Delta tg\delta$): $\leq 50 \times 10^{-4}$ at 1 KHz. Insulation Resistance: $\geq 50\%$ of initial limit</p>

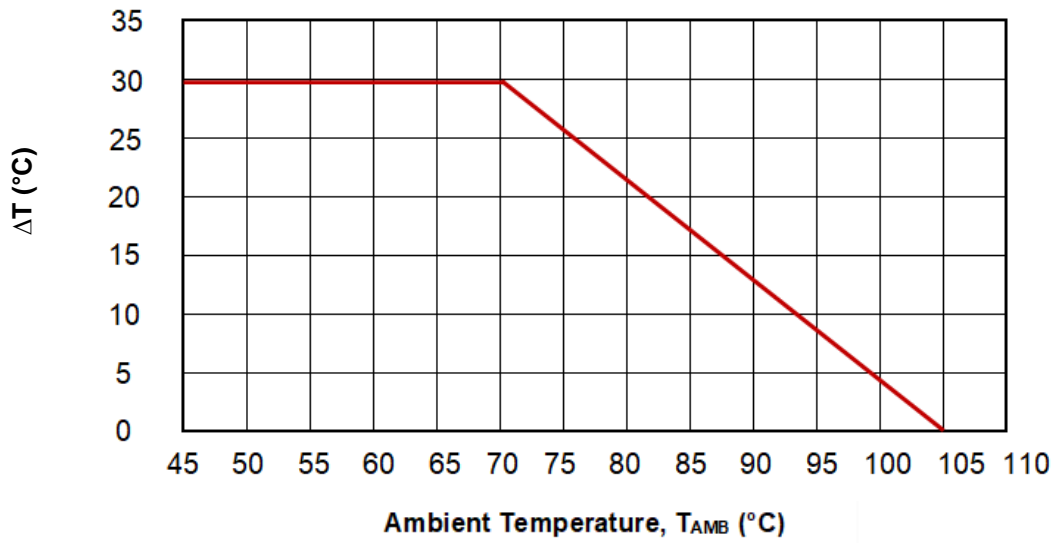
Expected Life Curve



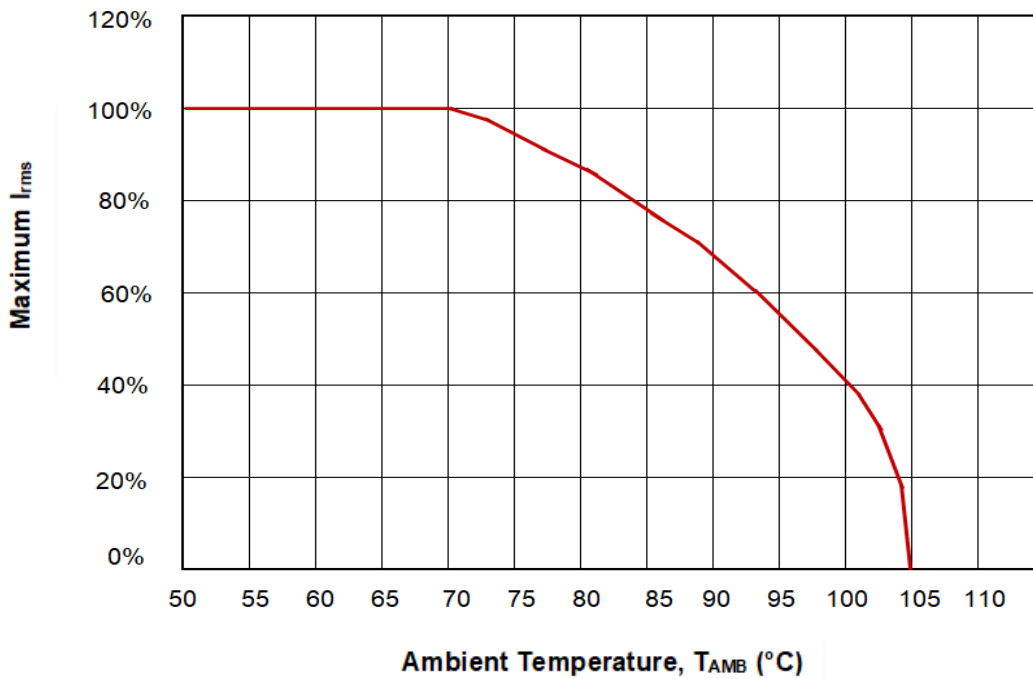
Derating of Rated Voltage Vs Temperature



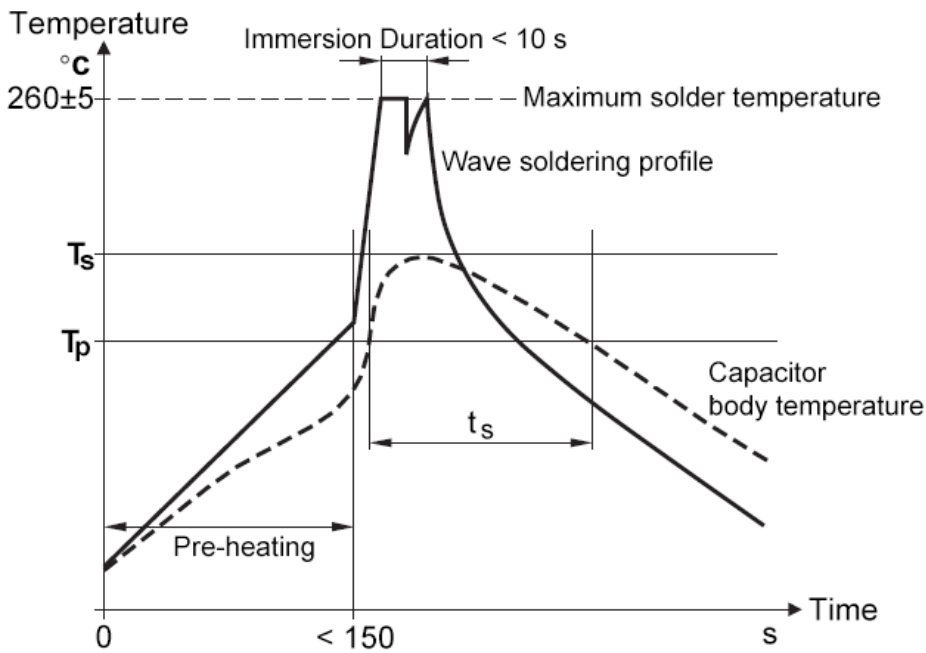
Maximum Over-Temperature (ΔT) Vs Ambient Temperature (T_{AMB})



Maximum I_{rms} VS Ambient Temperature (T_{AMB})



Wave Soldering Recommendations

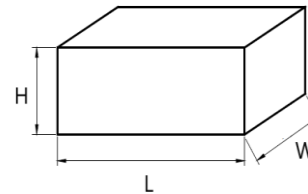


Ts: Capacitor body maximum temperature at wave soldering
 Tp: Capacitor body maximum temperature at pre-heating

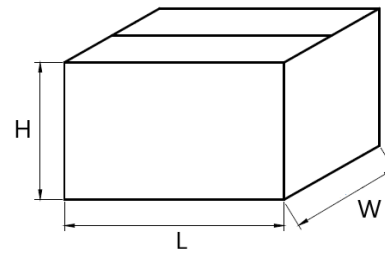
Polypropylene Capacitors	Polyester Capacitors
During pre-heating: $T_p \leq 110^\circ\text{C}$ During soldering: $T_s \leq 120^\circ\text{C}$, $t_s \leq 60$	During pre-heating: $T_p \leq 130^\circ\text{C}$ During soldering: $T_s \leq 160^\circ\text{C}$, $t_s \leq 60\text{s}$

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	350



Packaging Quantity

Pitch	Size	Dimension			Packaging Quantity	
	Code	W	H	T	Long Leads	Short Leads
27.5	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
	G27	32	24.5	15	200	200
	G32	32	30	16	190	190
	G34	32	33	18	170	170
	G40	32	37	22	140	140
37.5	K18	42	29	17	126	126
	K21	42	32	19	112	112
	K24	42	40	20	105	105
	K27	42	37	22	98	98
	K32	42	44	24	91	91
	K37	42	37	28	77	77
	K39	42	43	28	77	77
	K42	42	45	30	70	70
	K47	42	50	35	63	63
	K49	42	55	40	49	49
	K52	42	60	45	49	49
52.5	K66	42	30	17	126	126
	M10	57.5	45	25	60	60
	M16	57.5	45	30	50	50
	M20	57.5	50	35	45	45
	M32	57.5	55	45	35	35
	M34	57.5	65	45	35	35

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 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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