Metallized Polypropylene Film EMI Suppression Capacitors
FXQ Series - Class X2 305VAC / 350VAC (Automotive Grade)

Overview
The FXQ series is constructed of Metallized Polypropylene Film encapsulated with self - extinguishing resin in plastic box of material meeting the UL 94V-0 requirements. The series are suitable for harsh environment condition and qualify in accordance to AEC-Q200 requirement.

Applications
Interference suppression, across-the-line capacitor, EMI filter and spark-killer in class X2 applications. Suitable for use in situations where failure of the capacitor would not lead to danger of electric shock.

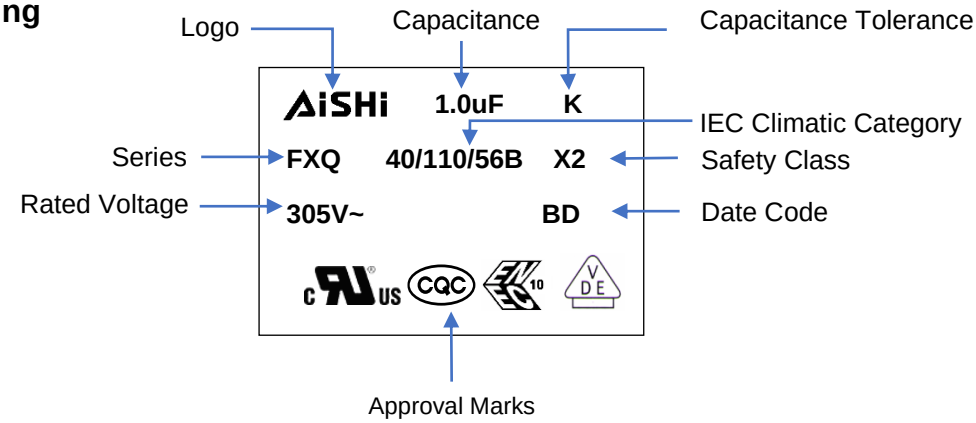
Features
- High stability of capacitance
- Operating temperature range: -40°C ~ +110°C
- Self-healing property
- Over voltage stress withstanding
- Flame-retardant plastic case and resin
- Suitable for harsh environmental conditions
- THB 2000H - 85°C 85%RH, 2000 Hours at U_{RAC}
- Automotive Grade (AEC-Q200)

AUTOMOTIVE GRADE Available

Approvals

Marking	Standard	File Number
c UL us	UL 60384-14 CAN/CSA-E60384-14	E500538 (305Vac/350Vac)
10 DVE	IEC 60384-14:2013 IEC 60384-14:2013/AMD1:2016	40051583 (305Vac) 40058450 (350Vac)
CQC	IEC 60384-14 GB/T6346.14-2015	CQC20001245437 (305Vac) CQC20001281016 (350Vac)

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	XQ	30	K	105	G18	2GL	5
Capacitor Type	Series	Voltage (VAC)	Tolerance	Capacitance (pF)	Size Code	Terminal Code	Lead Length Code
F = Film	X2, AEC-Q200 Type, Metallized PP Film	30=305Vac 35=350Vac	K = ±10% M = ±20%	First two digits = significant figures. Third digit = Number of zeros.	Refer to Dimension Table	Refer to Terminal Code Table	Refer to Lead Length Table

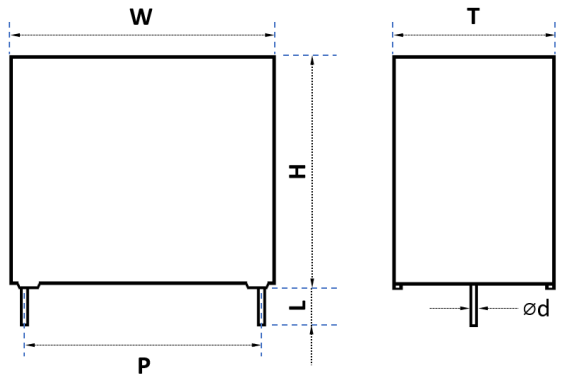
Terminal Code

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	15.0mm	E		
2 leads for forming cut	E	22.5mm	F		
2 leads for taping forming	T	27.5mm	G		
2 leads for taping straight	V	37.5mm	K		
2 leads for 90°C bent cut	Y	52.5mm	M		
		N/A	N		

Lead Length Code

Lead Length	
3.2mm	1
3.5mm	2
3.0mm	3
4.0mm	4
4.5mm	D
5.0mm	5
20mm min	L
Taping	T
N/A	N

Dimension (mm)



2 pins

Size Code Table (mm)

Size Code	Dimension						Pitch		Lead Wire	
	W	Tolerance	H	Tolerance	T	Tolerance	P	Tolerance	Ød	Tolerance
E14	18	0.5	11	0.5	5	0.5	15	0.5	0.6	0.05
E17	18	0.5	12	0.5	6	0.5	15	0.5	0.8	0.05
E18	18	0.5	13.5	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
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
F29	26	0.5	23	0.5	13	0.5	22.5	0.5	0.8	0.05
F34	26	0.5	29.5	0.5	14.5	0.5	22.5	0.5	0.8	0.05
F36	26	0.5	25	0.5	15	0.5	22.5	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
G22	32	0.8	24.5	0.8	13	0.8	27.5	0.5	0.8	0.05
G25	32	0.8	24	0.8	14	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
G33	32	0.8	28	0.8	18	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
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	1.0	0.05
K27	42	1.0	37	1.0	22	1.0	37.5	0.5	1.0	0.05
K32	42	1.0	44	1.0	24	1.0	37.5	0.5	1.0	0.05
K42	42	1.0	45	1.0	30	1.0	37.5	0.5	1.0	0.05

Rating and Part Number

Vac	Vdc	Cap Value	Dimensions				Peak Current	Surge Current	dv/dt	Lead Wire	Part Number
			w	H	T	P					
		µF	mm	mm	mm	mm	A	A	V/us	mm	
305	630	0.1	18	11	5	15	40	120	400	0.6	FXQ30K104E142EL5
305	630	0.15	18	12	6	15	60	180	400	0.6	FXQ30K154E172EL5
305	630	0.22	18	13.5	7.5	15	88	264	400	0.8	FXQ30K224E292EL5
305	630	0.27	18	14.5	8.5	15	108	324	400	0.8	FXQ30K274E342EL5
305	630	0.33	18	14.5	8.5	15	132	396	400	0.8	FXQ30K334E342EL5
305	630	0.47	18	16	10	15	188	564	400	0.8	FXQ30K474E432EL5
305	630	0.56	18	19	11	15	224	672	400	0.8	FXQ30K564E472EL5
305	630	0.68	18	19	11	15	272	816	400	0.8	FXQ30K684E472EL5
305	630	0.22	26	16.5	7	22.5	44	132	200	0.8	FXQ30K224F172FL5
305	630	0.33	26	16.5	7	22.5	66	198	200	0.8	FXQ30K334F172FL5
305	630	0.47	26	16.5	7	22.5	94	282	200	0.8	FXQ30K474F172FL5
305	630	0.56	26	19	10	22.5	112	336	200	0.8	FXQ30K564F242FL5
305	630	0.68	26	19	10	22.5	136	408	200	0.8	FXQ30K684F242FL5
305	630	1	26	19	10	22.5	200	600	200	0.8	FXQ30K105F242FL5
305	630	1.2	26	22	12	22.5	240	720	200	0.8	FXQ30K125F272FL5
305	630	1.5	26	23	13	22.5	300	900	200	0.8	FXQ30K155F292FL5
305	630	1.8	26	29.5	14.5	22.5	360	1080	200	0.8	FXQ30K185F342FL5
305	630	2	26	29.5	14.5	22.5	400	1200	200	0.8	FXQ30K205F342FL5
305	630	2.2	26	29.5	14.5	22.5	440	1320	200	0.8	FXQ30K225F342FL5
305	630	0.68	32	18	9	27.5	102	306	150	0.8	FXQ30K684G152GL5
305	630	0.82	32	18	9	27.5	123	369	150	0.8	FXQ30K824G152GL5
305	630	1	32	20	11	27.5	150	450	150	0.8	FXQ30K105G182GL5
305	630	1.2	32	20	11	27.5	180	540	150	0.8	FXQ30K125G182GL5
305	630	1.5	32	24.5	13	27.5	225	675	150	0.8	FXQ30K155G222GL5
305	630	1.8	32	24.5	13	27.5	270	810	150	0.8	FXQ30K185G222GL5
305	630	2.2	32	24	14	27.5	330	990	150	0.8	FXQ30K225G252GL5
305	630	2.7	32	28	18	27.5	405	1215	150	0.8	FXQ30K275G332GL5
305	630	3.3	32	28	18	27.5	495	1485	150	0.8	FXQ30K335G332GL5
305	630	3.3	32	33	18	27.5	495	1485	150	0.8	FXQ30K335G342GL5
305	630	3.9	32	33	18	27.5	585	1755	150	0.8	FXQ30K395G342GL5
305	630	4.7	32	33	18	27.5	705	2115	150	0.8	FXQ30M475G342GL5
305	630	4.7	32	37	22	27.5	705	2115	150	0.8	FXQ30K475G402GL5
305	630	5.6	32	37	22	27.5	840	2520	150	0.8	FXQ30M565G402GL5
305	630	6.8	42	37	22	37.5	680	2040	100	1	FXQ30K685K272KL5
305	630	6.8	42	40	20	37.5	680	2040	100	1	FXQ30K685K242KL5
305	630	10	42	44	24	37.5	1000	3000	100	1	FXQ30K106K322KL5
305	630	12	42	45	30	37.5	1200	3600	100	1	FXQ30K126K422KL5
305	630	15	42	45	30	37.5	1500	4500	100	1	FXQ30K156K422KL5

Rating and Part Number

Vac	Vdc	Cap Value	Dimensions				Peak Current	Surge Current	dv/dt	Lead Wire	Part Number
			w	H	T	P					
		µF	mm	mm	mm	mm	A	A	V/us	mm	
350	700	0.1	18	13.5	6	15	50	150	500	0.6	FXQ35K104E182EL5
350	700	0.15	18	13.5	7.5	15	75	225	500	0.8	FXQ35K154E292EL5
350	700	0.22	18	14.5	8.5	15	110	330	500	0.8	FXQ35K224E342EL5
350	700	0.33	18	16	10	15	165	495	500	0.8	FXQ35K334E432EL5
350	700	0.47	18	19	11	15	235	705	500	0.8	FXQ35K474E472EL5
350	700	0.47	26	17	8.5	22.5	188	564	400	0.8	FXQ35K474F202FL5
350	700	0.56	26	19	10	22.5	224	672	400	0.8	FXQ35K564F242FL5
350	700	0.68	26	20	11	22.5	272	816	400	0.8	FXQ35K684F262FL5
350	700	0.82	26	22	12	22.5	328	984	400	0.8	FXQ35K824F272FL5
350	700	1	26	23	13	22.5	400	1200	400	0.8	FXQ35K105F292FL5
350	700	1.2	26	25	15	22.5	480	1440	400	0.8	FXQ35K125F362FL5
350	700	1.5	26	29.5	14.5	22.5	600	1800	400	0.8	FXQ35K155F342FL5
350	700	1.8	32	28	14	22.5	360	1080	200	0.8	FXQ35K185G262GL5
350	700	2.0	32	28	14	27.5	400	1200	200	0.8	FXQ35M205G262GL5
350	700	2.2	32	28	18	27.5	440	1320	200	0.8	FXQ35K225G332GL5
350	700	2.7	32	28	18	27.5	540	1620	200	0.8	FXQ35M275G332GL5
350	700	3.0	32	33	18	27.5	600	1800	200	0.8	FXQ35K305G342GL5
350	700	3.3	32	33	18	27.5	660	1980	200	0.8	FXQ35M335G342GL5
350	700	3.9	32	37	22	27.5	780	2340	200	0.8	FXQ35K395G402GL5
350	700	4.7	32	37	22	27.5	940	2820	200	0.8	FXQ35M475G402GL5
350	700	4.7	42	32	19	37.5	470	1410	100	1.0	FXQ35K475K212KL5
350	700	5.6	42	37	22	37.5	560	1680	100	1.0	FXQ35K565K272KL5

General Technical Data

Application	Interference suppression \ Across-the-line (Class X2)
Dielectric	Metallized Polypropylene Film
Reference Standard	IEC 60384-14 / EN 60384-14 / UL 60384-14 / AEC-Q200
Climatic Category	40/110/56 IEC60068-1
Passive Flammability Class	B
Operating Temperature Range	-40°C ~ +110°C
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 Compliant	Compliant with the restricted substance requirements of Directive 2011/65/EU
Flame Retardant Grade	Flame retardant performance accords with horizontal combustion grade HB and vertical combustion grade V-0.

Construction

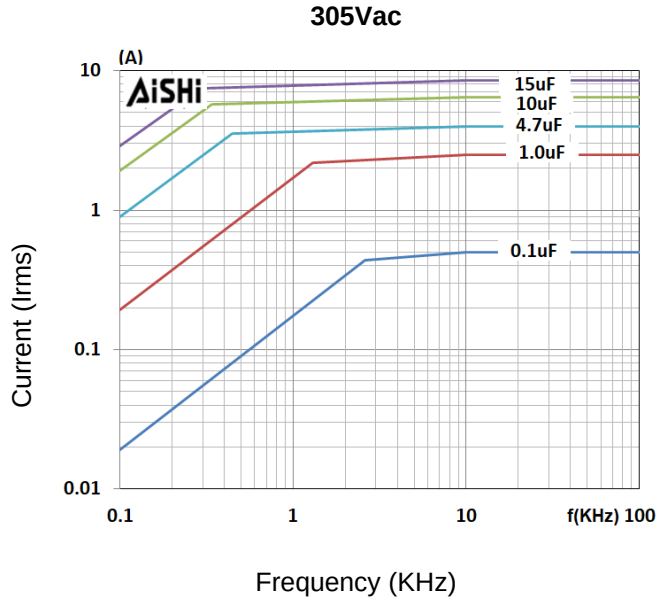
Metallized Film	OPP & Al/Zn
Metal Sprayed	Sn/Zn Alloy
Connection Electrode	Copper clad steel wire or Tinned copper wires
Case	Plastic Case (UL94V-0)
Filling	Epoxy Resin (UL94V-0)
Film Construction	Mono Structure 

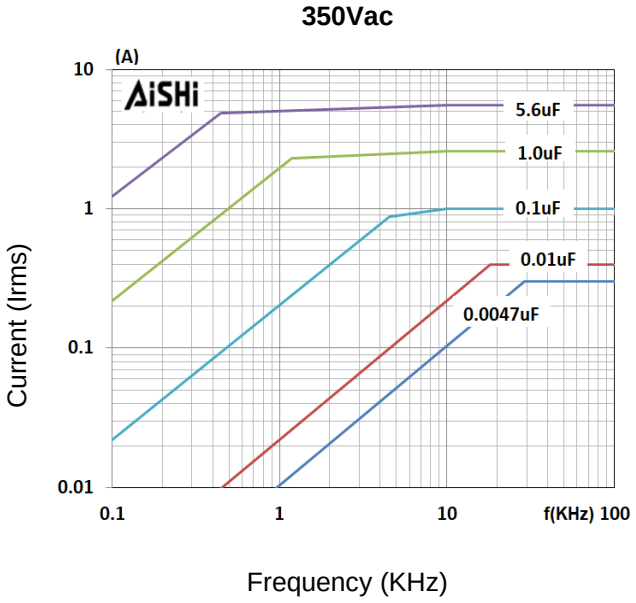
Electrical Characteristics

Voltage Range	305Vac / 350Vac at 50/60Hz
Capacitance Range	0.1μF to 15μF
Capacitance Tolerance	±10% or ±20% 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}	DC Voltage: 4.3xVR for 60 seconds or $\sqrt{2}(2U_R$ + 1000Vac) VDC for 2 seconds, charge current must be 1A max. Withstanding (DC) voltage (cut off current 10mA), rise time 100V/S.
Voltage Between Terminals and Case U_{TC}	$2U_R$ + 1500Vac, 60s (at +20+/-2°C)
Dielectric Dissipation Factor Tgδ 0	≤2×10^{-4}
Dissipation Factor	0.0010 (20°C, 1KHz)
Insulation Resistance	R between leads, for C ≤ 0.33 μF at 100 V; 1 min > 15 000 MΩ RC between leads, for C > 0.33 μF at 100 V; 1 min > 5000 MΩ*μF
Life Expectancy	100 000hours (UR，Θhotspot=85°C)
Failure Rate	≤100 Fit V_{RAC} at hot spot temperature (T_{HS}) = 85°C
Max. Altitude	4000 m

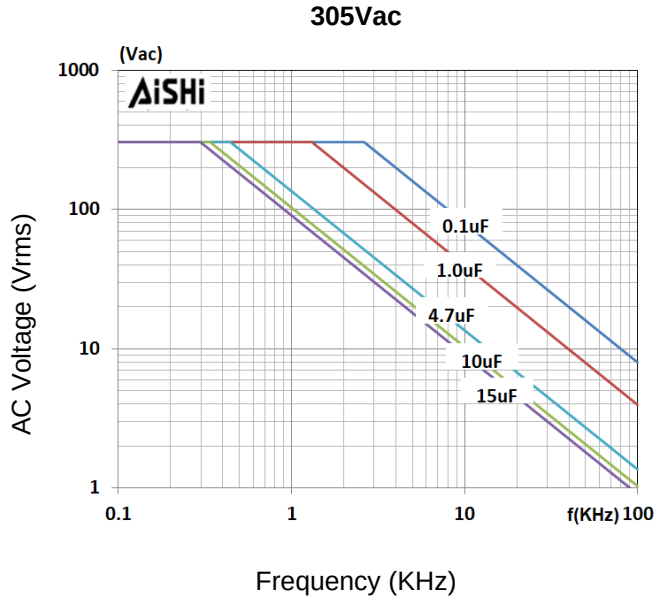
Characteristics Curve

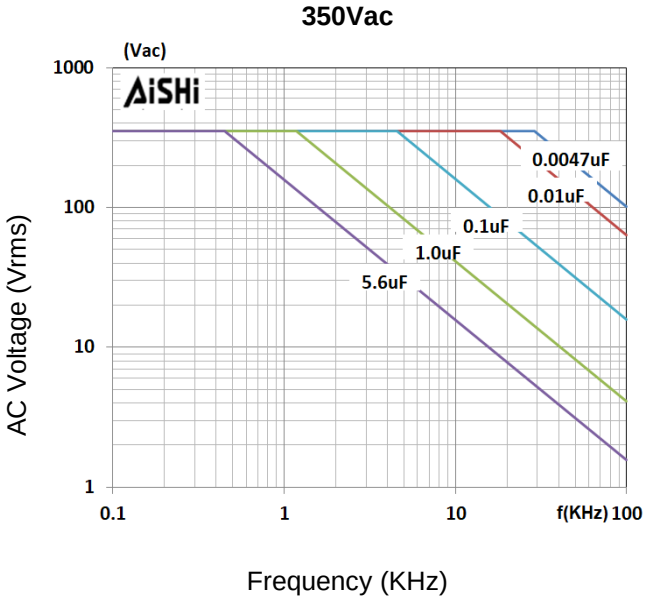
Maximum Current (I_{rms}) Vs Frequency



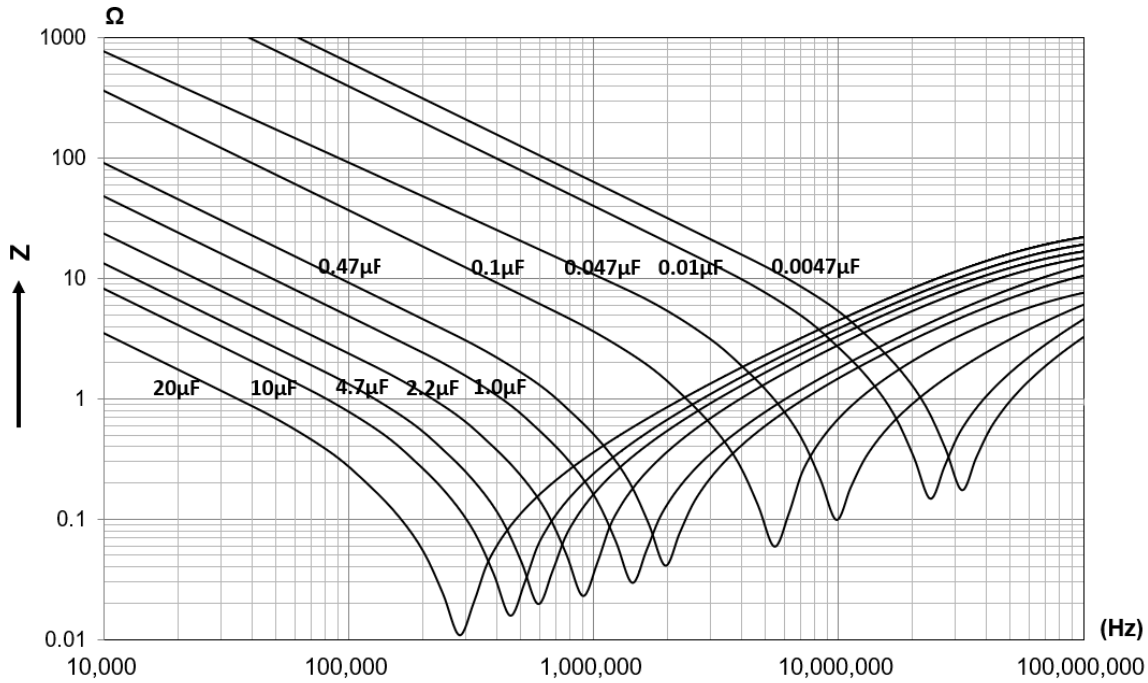


Maximum Voltage (V_{rms}) Versus Frequency





Impedance (Z) Vs Frequency (Hz)



Environmental Test

Biased Humidity	**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. **Performance:** Capacitance Change Rate (△C/C): ≤±10% Maximum permissible increase of tan δ between initial and final measurement: DF Change (△tgδ): ≤240*10^{-4} at 10 KHz (C ≤ 1μF) DF Change (△tgδ): ≤150*10^{-4} at 1 KHz (C > 1μF) Insulation Resistance: ≥50% of initial limit
Damp heat, steady state (With loading)	**Test Conditions:** Reference: IEC 60384-14:2013/AMD1:2016 Test Temperature: +40°C Test Humidity: 93% RH Loading Voltage: Rated Voltage Test Duration: 56 days **Performance:** Capacitance Change Rate (△C/C): ≤±5% DF change (△tgδ): ≤80*10^{-4} at 1 KHz for C_N ≤ 1 μF DF change (△tgδ): ≤50*10^{-4} at 1 KHz for C_N > 1 μF Insulation Resistance: ≥50% of initial limit
Operational Life	**Test Conditions:** Reference: MIL-STD-202 Method 108 Test Temperature: +110 +/-2°C Apply 125% of rated voltage for 1,000 +24/-0 hours; Each of these voltages shall be applied to each capacitor individually through a resistor of 47Ω±5% measurement at 24±4hours after test conclusion **Performance:** Capacitance Change Rate (△C/C): ≤±10% DF change (△tgδ): ≤80*10^{-4} at 10 KHz. (C ≤ 1 μF) DF change (△tgδ): ≤50*10^{-4} at 1 KHz. (C > 1 μF) Insulation Resistance: ≥50% of initial limit
Temperature Cycle	**Test Conditions:** Reference: JESD22 Method JA-104 Test Temperature Cycle: Total 1000 cycles High Temperature: +110+/-5°C Low Temperature: -40+/-5°C 30 min +/- 10% for each temperature. 1 minutes, maximum transition time. measurement at 24±4hours after test conclusion **Performance:** Capacitance Change Rate (△C/C): ≤±3% DF change (△tgδ): ≤80*10^{-4} at 10 KHz. (C ≤ 1 μF) DF change (△tgδ): ≤50*10^{-4} at 1 KHz. (C > 1 μF) Insulation Resistance: ≥50% of initial limit

Environmental Test

High Temperature Exposure (Storage)	**Test Conditions:** Reference: MIL-STD-202 Method 108 Test Temperature: +110+/-2°C Test Duration: 1000+24/-0 hours Unpowered. measurement at 24±4hours after test conclusion **Performance:** Capacitance Change Rate (△C/C): ≤±3% DF change (△tgδ): ≤80*10^{-4} at 10 KHz. (C ≤ 1 μF) DF change (△tgδ): ≤50*10^{-4} at 1 KHz. (C > 1 μF) Insulation Resistance: ≥50% of initial limit
Solderability	**Test Conditions:** Reference: J-STD-002 Soldering temperature: +245 +/-5°C Immersion duration: 2+/-0.5 seconds **Performance:** More than 95% of circumferential surface of lead wire shall be covered with new solder.
Soldering Heat Resistance	**Test Conditions:** Reference: MIL-STD-202 Method 210 Flow soldering: Preheat temp 100°C~120°C, Preheat Duration: 100 second max 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. **Performance:** Capacitance Change Rate (△C/C): ≤±2% DF change (△tgδ): ≤80*10^{-4} at 10 KHz. (C ≤ 1 μF) DF change (△tgδ): ≤50*10^{-4} at 1 KHz. (C > 1 μF) Insulation Resistance: ≥50% of initial limit
Temperature Humidity Cycle	**Test Conditions:** Reference: MIL-STD-202 Method 106 Test Temperature Cycle: Total 10 cycles Each cycle includes: 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 Test Humidity: 90% to 95% R.H. **Performance:** Capacitance Change Rate (△C/C): ≤±5% DF change (△tgδ): ≤80*10^{-4} at 10 KHz. (C ≤ 1 μF) DF change (△tgδ): ≤50*10^{-4} at 1 KHz. (C > 1 μF) Insulation Resistance: ≥50% of initial limit

Mechanical Test

Resistance to solvent	**Test Conditions:** Reference: MIL-STD-202 Method 215 Solvent: propanol (isopropyl-alcohol) Temperature: 23±5°C Immersion time: 5±0.5min Drying time: 5 minutes Mechanical treatment: 10 rubbing (with cotton-wool) **Performance:** Signs shall be kept clear Capacitance Change Rate (△C/C): ≤±1% DF change (△tgδ): ≤80*10^{-4} at 10 KHz. (C ≤ 1 μF) DF change (△tgδ): ≤50*10^{-4} at 1 KHz. (C >1 μF) Insulation Resistance: ≥50% of initial limit
Terminal Strength	**Test Conditions:** Reference: MIL-STD-202 Method 211 Tension: 0.50 < D ≤0.80, 10N 0.80 < D ≤1.25, 20N Bending test: Bending force: 0.50 < D ≤0.80, 5N 0.80 < D ≤1.25, 10N Make two successive bends in each direction **Performance:** No visible damage to appearance
Vibration Resistance	**Test Conditions:** Reference: MIL-STD-202 Method 204 5g force 20 minutes, three directions, 12 cycles in each direction. Test Frequency 10~2000 Hz **Performance:** Capacitance Change Rate (△C/C): ≤±3% DF change (△tgδ): ≤80*10^{-4} at 10 KHz. (C ≤ 1 μF) DF change (△tgδ): ≤50*10^{-4} at 1 KHz. (C > 1 μF) Insulation Resistance: ≥50% of initial limit Connection Strength: Shall be no open nor short-circuiting. The connection shall be stable Appearance: Shall be no mechanical damage
Mechanical Shock	**Test Conditions:** Reference: MIL-STD-202 Method 213 Pulse-shape: half-sine wave Acceleration: 500 m/s^2 Duration of pulse: 11 ms **Performance:** Capacitance Change Rate (△C/C): ≤±3% DF change (△tgδ): ≤80*10^{-4} at 10 KHz. (C ≤ 1 μF) DF change (△tgδ): ≤50*10^{-4} at 1 KHz. (C > 1 μF) Insulation Resistance: ≥50% of initial limit

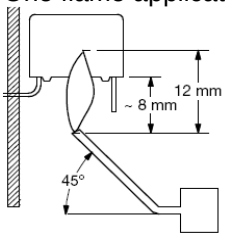
Mechanical Test

Bump	**Test Conditions:** Reference: MIL-STD-202 Method 213 Total number of bumps: 1 000 times or 4 000 times Acceleration: 400 m/s^2 Pulse duration: 6 ms **Performance:** Capacitance Change Rate (△C/C): ≤±3% DF change (△tgδ): ≤80*10^{-4} at 10 KHz. (C ≤ 1 μF) DF change (△tgδ): ≤50*10^{-4} at 1 KHz. (C > 1 μF) Insulation Resistance: ≥50% of initial limit

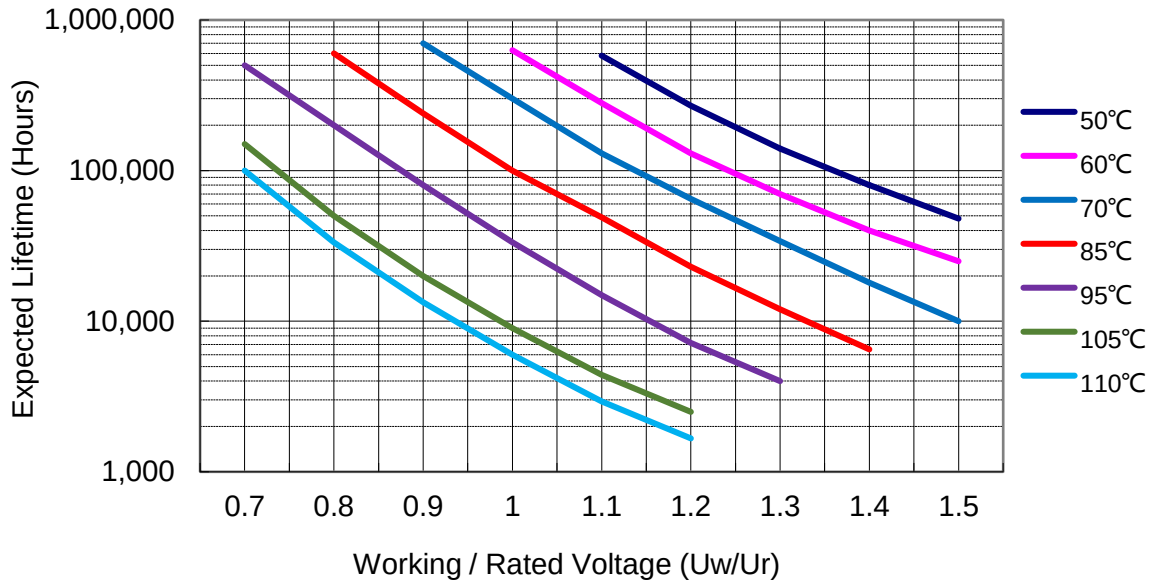
Electrical Test

Charge and Discharge	**Test Conditions:** 10000 cycles Charge to √2 x VR (DC) Charge resistance: $R = \frac{220 \times 10^{-6}}{C_N}\ \Omega$ Discharge resistance: $R = \frac{\sqrt{2} \times VR\ (DC)}{1.25 \times C(dv/dt)}\ \Omega$ **Performance:** Capacitance Change Rate (△C/C): ≤±5% DF change (△tgδ): ≤80*10^{-4} at 10 KHz. (C ≤ 1 μF) DF change (△tgδ): ≤50*10^{-4} at 1 KHz. (C > 1 μF) Insulation Resistance: ≥50% of initial limit
Impulse Voltage	**Test Conditions:** 3 successive impulses, full wave, peak voltage: X2: 2.5 kV for C ≤ 1μF X2: 2.5 kV/√C for C > 1μF Max. 24 pulses **Performance:** No self-healing breakdowns or flashover
High Temperature Features	**Test Conditions:** Test Temperature: 110+/-2°C Test Duration:16 +1/-0 hours **Performance:** Capacitance Change Rate (△C/C): -0~-5% DF change (△tgδ): ≤80*10^{-4} at 10 KHz. (C ≤ 1 μF) DF change (△tgδ): ≤50*10^{-4} at 1 KHz. (C > 1 μF) Insulation Resistance: ≥50% of initial limit
Low Temperature Features	**Test Conditions:** Test Temperature: -40+/-2°C Test Duration:2 +1/-0 hours **Performance:** Capacitance Change Rate (△C/C): +0~+5% DF change (△tgδ): ≤80*10^{-4} at 10 KHz. (C ≤ 1 μF) DF change (△tgδ): ≤50*10^{-4} at 1 KHz. (C > 1 μF) Insulation Resistance: ≥50% of initial limit

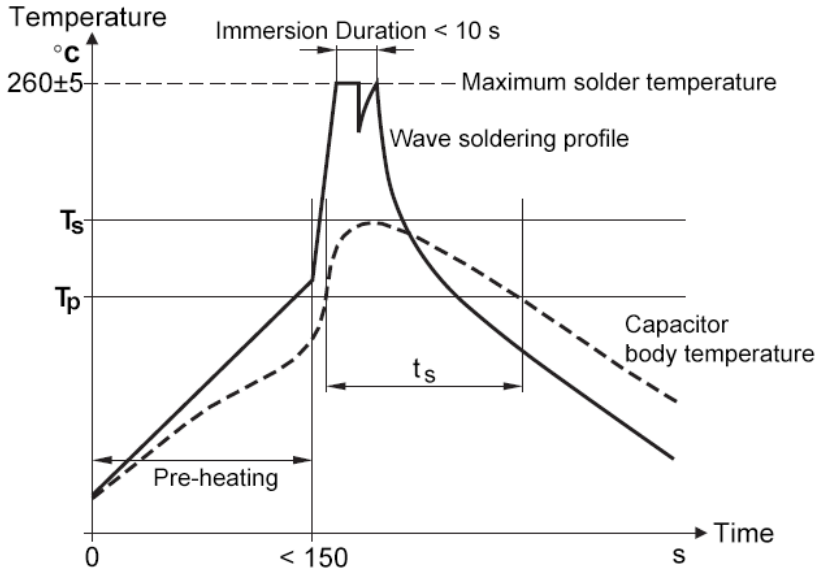
Flammability Test

Passive Flammability Class B	**Test Conditions:** Bore of gas jet: Ø 0.5 mm Fuel: Butane Test duration for actual volume V in mm3: V ≤ 250: 10 s 250 < V ≤ 500: 20 s 500 < V ≤1750: 30 s V > 1750: 60 s One flame application  **Performance:** After removing test flame from capacitor, the capacitor must not continue to burn for more than 10 seconds. No burning particle must drop from the sample.
Active Flammability	**Test Conditions:** 20 cycles of 2.5kV discharges on the test capacitor connected to URAC **Performance:** The cheese cloth around the capacitors shall not burn with a flame. No electrical measurements are required

Expected Life Curve



Wave Soldering Recommendations

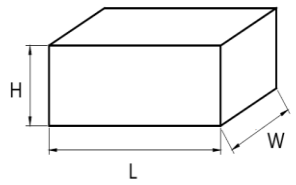


Ts: Capacitor body maximum temperature at wave soldering
Tp: Capacitor body maximum temperature at pre-heating

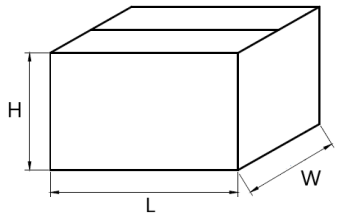
Polypropylene Capacitors	Polyester Capacitors
During pre-heating: Tp≤110°C During soldering: Ts ≤120°C, ts≤60	During pre-heating: Tp≤130°C During soldering: Ts≤160°C, ts≤60s

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



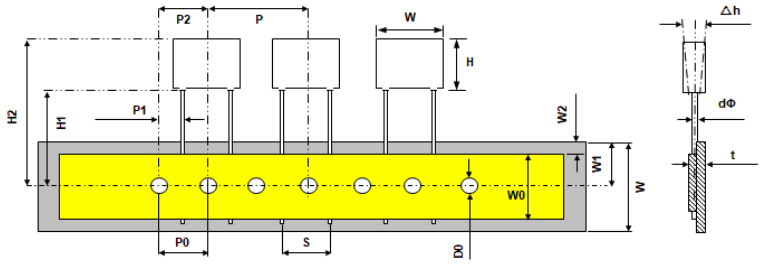
Packaging Quantity

Pitch	Size	Dimension			Packaging Quantity		
	Code	W	H	T	Long Leads	Short Leads	Ammo Pack
15	E14	18	11	5	800	1,054	680
	E17	18	12	6	800	867	560
	E18	18	13.5	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	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
	F29	26	23	13	276	276	160
	F34	26	29.5	14.5	252	252	140
	F36	26	25	15	240	240	140
27.5	G15	32	18	9	340	340	
	G18	32	20	11	280	280	
	G22	32	24.5	13	230	230	
	G25	32	24	14	220	220	
	G26	32	28	14	220	220	
	G33	32	28	18	170	170	
	G34	32	33	18	170	170	
	G40	32	37	22	140	140	
37.5	K21	42	32	19	112	112	
	K27	42	40	20	105	105	
	K27	42	37	22	98	98	
	K32	42	44	24	91	91	
	K42	42	45	30	70	70	

Lead Taping Information

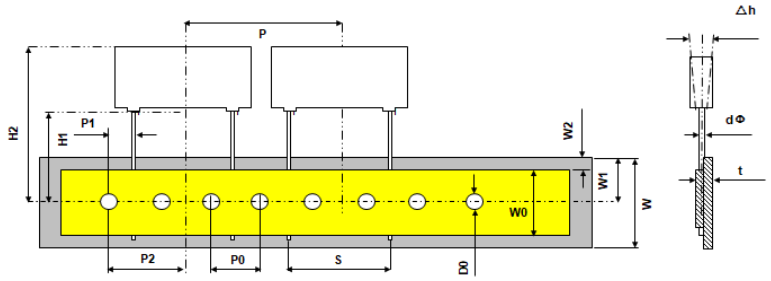
Taping Style: Straight leads

Lead spacing: 10 - 15mm



Quantity: 10pcs / line

Lead spacing: 22.5mm



Quantity: 6pcs / line

Taping Specification

Description	Symbol	Dimension (mm)				Tolerance
Lead Spacing	S	**10.0**	**12.5**	**15.0**	**22.5**	+0.8/-0.2
Taping Pitch	P	25.4	25.4	25.4	38.0	±1.0
Feed Hole Pitch	P0	12.7	12.7	12.7	12.7	±0.2
Centering of Lead Wire	P1	7.7	6.5	5.2	7.80	±0.7
Centering of Body	P2	12.7	12.7	12.7	19.1	±1.3
Carrier Tape Width	W	18.0	18.0	18.0	18.0	±0.5
Hold Down Tape Width	W0	9.5	9.5	9.5	9.5	minimum
Hole Position	W1	9.0	9.0	9.0	9.0	±0.5
Hold Down Tape Position	W2	3.0	3.0	3.0	3.0	maximum
Feed Hole Diameter	D0	4.0	4.0	4.0	4.0	±0.2
Height of Component From Tape Center	H1	20.0	20.0	20.0	20.0	±0.5
Top Edge of Component	H2	39.0	39.0	39.0	44.0	maximum
Lead Wire Diameter	d	0.6	0.8	0.8	0.8	±0.1
Component Alignment	△h	0.0	0.0	0.0	0.0	±2.0
Tape Thickness	t	0.7	0.7	0.7	0.7	±0.2

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 bord by the fixed capacitor.
- Don't place the capacitor on a PC board whose holes pacse 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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