

Parameters	U.M.	Symbol/Value	Notes
Expected lifetime	[hrs]	5.000	@rated voltage, temperature and ripple current
Climatic category		40/85/56	-40°C / +85°C / 85% Relative Humidity
Voltage	[V]	V_R	40 – 500
Capacitance	[μF]	C	C_{10} rated value at t=0hrs
Capacitance tolerance	%	M = 20 %	Other capacitance on request as indicated in the data book
Series resistance	[mΩ]	ESR	ESR_{10} rated value at t=0hrs
Leakage Current	[mA]	$I_f = 0,004 * C * V$	I_{f10} rated value at t=0hrs
I Ripple	[A]	I_R	Ripple current @ rated parameters
		$I_t = K_f * K_t * I_R$	I_t ripple current at a given T
		K_f	Frequency Correlation Factor See table below
		K_t	Temperature Correlation Factor See table below
End of Life values		$\Delta C / C_{10} \leq 30\%$	
		$ESR \leq 3 * ESR_{10}$	
		$I_f \leq I_{f10}$	
Surge Voltage	[V]	$V_{surge} = 1,1 * V_R$	≤450V
		$V_{surge} = 1,05 * V_R$	=500V

Ripple Current Coefficient

Hz	50	100	300	400	500	1000
V≤300	0.90	1.00	1.14	1.18	1.20	1.25
V>300	0.88	1.00	1.20	1.25	1.35	1.40

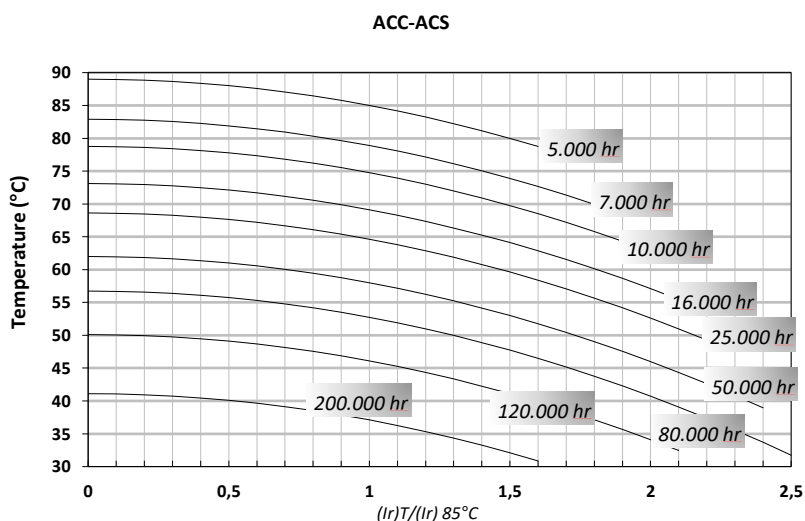
°C	40	55	65	75	85
Kt	2.30	1.90	1.70	1.40	1.00

Note: Superimposed alternating voltage summed to DC voltage must not exceed rated voltage, rated ripple current must not be exceeded and no reverse polarity is allowed

Ordering Code: Example – ACC471M450NC1

ACC	471	M	450	NC	1
Series	C with multiplying factor:	Tolerance	V_R	Size	1=sleeve 0=no sleeve
	1=x10, 2=x100, 3=x1.000,				

Expected Lifetime Vs Temperature and Ripple Current



	Capacitance	Case	Diam	Height	Tand	ESRmax typ		Zmax	Iripple @100Hz		Ordering Code
	[μF]@100Hz		[mm]	[mm]	[%]@100Hz	[mΩ]@100Hz	[mΩ]@10KHz	[A]@55°C	[A]@85°C		*= C, 2 Pins S, 4 Pins
40	6800	MB	30	40	0,3	56	45	42	8,2	4,3	AC*682M040MB1
	10000	MC	30	50	0,32	41	33	31	10,7	5,6	AC*103M040MC1
		NB	35	40	0,36	46	37	34	9,9	5,2	AC*103M040NB1
	15000	NC	35	50	0,36	31	24	23	13,3	7	AC*153M040NC1
	22000	PC	40	50	0,48	28	22	21	15	7,9	AC*223M040PC1
	33000	PE	40	75	0,48	19	15	14	22	11,6	AC*333M040PE1
	47000	PG	40	100	0,48	13	10	10	29,9	15,7	AC*473M040PG1
63	4700	MB	30	40	0,21	57	46	43	8,2	4,3	AC*472M063MB1
	6800	MC	30	50	0,21	39	31	30	10,9	5,7	AC*682M063MC1
	6800	NB	35	40	0,24	45	36	34	10,1	5,3	AC*682M063NB1
	10000	NC	35	50	0,24	31	24	23	13,4	7	AC*103M063NC1
	12000	PC	40	50	0,29	31	25	23	14,5	7,6	AC*123M063PC1
	15000	PE	40	75	0,29	25	20	18	19,3	10,1	AC*153M063PE1
	22000	PG	40	100	0,29	17	13	13	26,2	13,8	AC*223M063PG1
100	1500	MB	30	40	0,09	76	61	57	7,1	3,7	AC*152M100MB1
	2200	MC	30	50	0,1	58	46	43	9,4	5	AC*222M100MC1
		NB	35	40	0,11	64	51	48	8,9	4,7	AC*222M100NB1
	3300	MC	30	50	0,12	46	37	35	10,5	5,5	AC*332M100MC1
	4700	NC	35	50	0,12	33	26	24	13,7	7,2	AC*472M100NC1
	5600	PC	40	50	0,12	27	22	20	16,2	8,5	AC*562M100PC1
	6800	PE	40	75	0,12	22	18	17	21,2	11,2	AC*682M100PE1
200	10000	PG	40	100	0,12	15	12	11	29,2	15,4	AC*103M100PG1
	680	MB	30	40	0,08	150	120	112	5,3	2,8	AC*681M200MB1
	1000	NB	35	40	0,08	102	82	76	7,1	3,7	AC*102M200NB1
	1200	MC	30	50	0,08	85	68	64	7,8	4,1	AC*122M200MC1
	1500	NC	35	50	0,08	68	54	51	9,5	5	AC*152M200NC1
	2200	NC	35	50	0,08	46	37	35	11,5	6	AC*222M200NC1
	2700	PE	40	75	0,08	38	30	28	16,4	8,6	AC*272M200PE1
	3300	PG	40	100	0,08	31	25	23	20,6	10,8	AC*332M200PG1
		QC	45	50	0,08	31	25	23	16,3	8,6	AC*332M200QC1
	3900	QE	45	75	0,08	26	21	20	21	11,1	AC*392M200QE1
250	4700	QG	45	100	0,08	22	17	16	26,2	13,8	AC*472M200QG1
	470	MB	30	40	0,08	217	173	163	4,4	2,3	AC*471M250MB1
	1000	MC	30	50	0,08	102	82	76	7,1	3,7	AC*102M250MC1
	1000	NB	35	40	0,08	102	82	76	7,1	3,7	AC*102M250NB1
	1500	NC	35	50	0,08	68	54	51	9,5	5	AC*152M250NC1
	1800	PC	40	50	0,08	57	45	42	11,2	5,9	AC*182M250PC1
	2200	NE	35	75	0,08	46	37	35	13,7	7,2	AC*222M250NE1
		QC	45	50	0,08	46	37	35	13,3	7	AC*222M250QC1
	2700	PE	40	75	0,08	38	30	28	16,4	8,6	AC*272M250PE1

	Capacitance	Case	Diam	Height	Tand	ESRmax typ		Zmax	Iripple @100Hz		Ordering Code
	[μF]@100Hz		[mm]	[mm]	[%]@100Hz	[mΩ]@100Hz	[mΩ]@10KHz	[mΩ]@10KHz	[A]@55°C	[A]@85°C	*= C, 2 Pins S, 4 Pins
250	2700	PE	40	75	0,08	38	30	28	16,4	8,6	AC*272M250PE1
	3300	PG	40	100	0,08	31	25	23	20,6	10,8	AC*332M250PG1
	3300	QE	45	75	0,08	31	25	23	19,3	10,2	AC*332M250QE1
	3900	QG	45	100	0,08	26	21	20	23,9	12,6	AC*392M250QG1
400	220	MB	30	40	0,1	579	463	434	3,3	1,7	AC*221M400MB1
	330	MB	30	40	0,1	386	309	290	4	2,1	AC*331M400MB1
		MC	30	50	0,1	386	309	290	4,4	2,3	AC*331M400MC1
	390	MB	30	40	0,1	327	261	245	4,3	2,3	AC*391M400MB1
		MC	30	50	0,1	327	261	245	4,8	2,5	AC*391M400MC1
		NC	35	50	0,1	327	261	245	5,2	2,7	AC*391M400NC1
	470	MC	30	50	0,1	271	217	203	5,2	2,8	AC*471M400MC1
		NB	35	40	0,1	271	217	203	5,2	2,7	AC*471M400NB1
		NC	35	50	0,1	271	217	203	5,7	3	AC*471M400NC1
		PB	40	40	0,1	271	217	203	5,6	3	AC*471M400PB1
		NN	35	60	0,1	271	217	203	6,2	3,2	AC*471M400NN1
	560	NC	35	50	0,1	227	182	171	6,2	3,3	AC*561M400NC1
	680	NC	35	50	0,1	187	150	141	6,9	3,6	AC*681M400NC1
		NN	35	60	0,1	187	150	141	7,4	3,9	AC*681M400NN1
		NE	35	75	0,1	187	150	141	8,2	4,3	AC*681M400NE1
		PC	40	50	0,1	187	150	141	7,4	3,9	AC*681M400PC1
	820	NN	35	60	0,1	155	124	117	8,2	4,3	AC*821M400NN1
		NE	35	75	0,1	155	124	117	9	4,7	AC*821M400NE1
		PC	40	50	0,1	155	124	117	8,1	4,3	AC*821M400PC1
	1000	NN	35	60	0,1	127	102	96	9	4,7	AC*102M400NN1
		NE	35	75	0,1	127	102	96	9,9	5,2	AC*102M400NE1
		PN	40	60	0,1	127	102	96	9,7	5,1	AC*102M400PN1
		PE	40	75	0,1	127	102	96	10,7	5,6	AC*102M400PE1
		QC	45	50	0,1	127	102	96	9,6	5,1	AC*102M400QC1
	1200	NE	35	75	0,1	106	85	80	10,9	5,7	AC*122M400NE1
		PE	40	75	0,1	106	85	80	11,7	6,2	AC*122M400PE1
	1500	PE	40	75	0,1	85	68	64	13,1	6,9	AC*152M400PE1
		PG	40	100	0,1	85	68	64	14,9	7,8	AC*152M400PG1
		QN	45	60	0,1	85	68	64	12,7	6,7	AC*152M400QN1
		QE	45	75	0,1	85	68	64	14	7,4	AC*152M400QE1
		QG	45	100	0,1	85	68	64	15,9	8,4	AC*152M400QG1
	1800	QE	45	75	0,1	71	57	53	15,3	8,1	AC*182M400QE1
	2200	QG	45	100	0,1	58	46	43	19,3	10,1	AC*222M400QG1
	2700	QG	45	100	0,1	47	38	35	21,3	11,2	AC*272M400QG1
	3300	RG	50	100	0,1	39	31	29	25	13,2	AC*332M400RG1

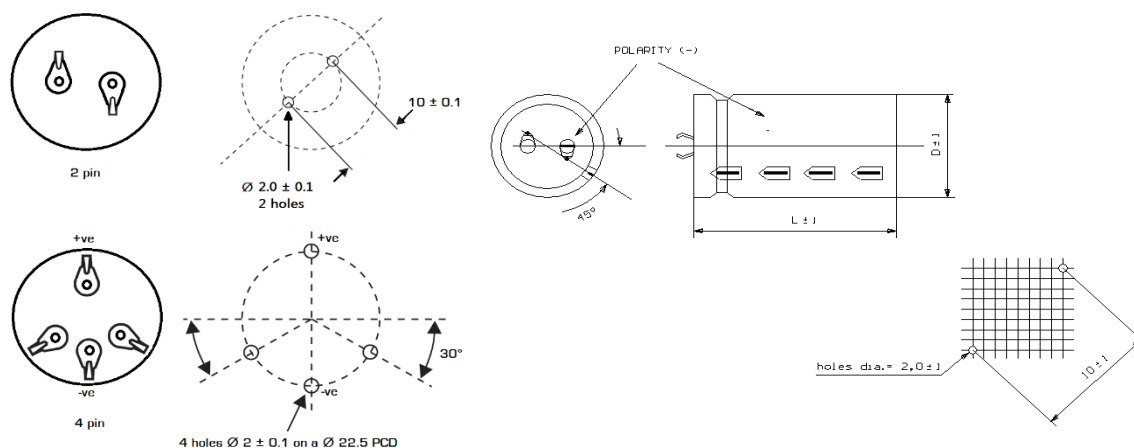
	Capacitance	Case	Diam	Height	Tand	ESRmax typ		Zmax	Iripple @100Hz		Ordering Code
	[µF]@100Hz		[mm]	[mm]	[%]@100Hz	[mΩ]@100Hz	[mΩ]@10KHz	[mΩ]@10KHz	[A]@55°C	[A]@85°C	*= C, 2 Pins S, 4 Pins
450	150	MB	30	40	0,12	1019	815	764	2,5	1,3	AC*151M450MB1
	220	MB	30	40	0,12	695	556	521	3	1,6	AC*221M450MB1
	330	MC	30	50	0,12	463	371	347	4	2,1	AC*331M450MC1
		NB	35	40	0,12	463	371	347	4	2,1	AC*331M450NB1
		NC	35	50	0,12	463	371	347	4,4	2,3	AC*331M450NC1
		NB	35	40	0,12	325	260	244	4,7	2,5	AC*471M450NB1
	470	NC	35	50	0,12	325	260	244	5,2	2,7	AC*471M450NC1
		NN	35	60	0,12	325	260	244	5,6	3	AC*471M450NN1
		PB	40	40	0,12	325	260	244	5,1	2,7	AC*471M450PB1
	560	NC	35	50	0,12	273	218	205	5,7	3	AC*561M450NC1
		NE	35	75	0,12	273	218	205	6,8	3,6	AC*561M450NE1
		PC	40	50	0,12	273	218	205	6,1	3,2	AC*561M450PC1
		PE	40	75	0,12	273	218	205	7,3	3,8	AC*561M450PE1
	680	NN	35	60	0,12	225	180	169	6,8	3,6	AC*681M450NN1
		NE	35	75	0,12	225	180	169	7,5	3,9	AC*681M450NE1
		PC	40	50	0,12	225	180	169	6,8	3,6	AC*681M450PC1
	820	NN	35	60	0,12	186	149	140	7,4	3,9	AC*821M450NN1
		NE	35	75	0,12	186	149	140	8,2	4,3	AC*821M450NE1
	1000	PN	40	60	0,12	153	122	115	8,9	4,7	AC*102M450PN1
		PE	40	75	0,12	153	122	115	9,8	5,1	AC*102M450PE1
		PG	40	100	0,12	153	122	115	11,1	5,9	AC*102M450PG1
		QC	45	50	0,12	153	122	115	8,8	4,6	AC*102M450QC1
	1360	PG	40	100	0,12	112	90	84	13	6,8	AC*1361M450PG1
	1500	PG	40	100	0,12	102	82	76	13,6	7,2	AC*152M450PG1
		QE	45	75	0,12	102	82	76	12,8	6,7	AC*152M450QE1
	1800	QG	45	100	0,12	85	68	64	15,9	8,4	AC*182M450QG1
	2200	QG	45	100	0,12	69	56	52	17,6	9,3	AC*222M450QG1
	2700	QG	45	100	0,12	57	45	42	19,5	10,3	AC*272M450QG1
	3300	RG	50	100	0,12	46	37	35	22,8	12	AC*332M450RG1
500	220	MC	30	50	0,15	869	695	651	2,1	1,1	AC*221M500MC1
	330	NC	35	50	0,15	579	463	434	2,9	1,5	AC*331M500NC1
	390	NC	35	50	0,15	490	392	367	3,1	1,6	AC*391M500NC1
	470	NN	35	60	0,15	407	325	305	3,7	1,9	AC*471M500NN1
	470	PC	40	50	0,15	407	325	305	3,7	1,9	AC*471M500PC1
	560	NE	35	75	0,15	341	273	256	4,5	2,3	AC*561M500NE1
	560	PC	40	50	0,15	341	273	256	4	2,1	AC*561M500PC1
	680	PN	40	60	0,15	281	225	211	4,8	2,5	AC*681M500PN1
	680	PE	40	75	0,15	281	225	211	5,3	2,8	AC*681M500PE1
	680	QC	45	50	0,15	281	225	211	4,8	2,5	AC*681M500QC1
	1000	PG	40	100	0,15	191	153	143	7,3	3,8	AC*102M500PG1

Standard 85°C - Industrial application

ACC/ACS – 5.000 hrs – 85°

	Capacitance	Case	Diam	Height	Tand	ESRmax typ		Zmax	Iripple @100Hz		Ordering Code
	[μF]@100Hz		[mm]	[mm]	[%]@100Hz	[mΩ]@100Hz	[mΩ]@10KHz	[mΩ]@10KHz	[A]@55°C	[A]@85°C	*= C, 2 Pins S, 4 Pins
500	1000	QE	45	75	0,15	191	153	143	6,9	3,6	AC*102M500QE1
	1200	QG	45	100	0,15	159	127	119	8,5	4,5	AC*122M500QG1
	1500	QG	45	100	0,15	127	102	96	9,5	5	AC*152M500QG1
	1800	RG	50	100	0,15	106	85	80	11,1	5,8	AC*182M500RG1

Technical Drawing



Dimension, Quantity and Weight for Box

Case		Connections			Packaging	
Code	DxL (mm)	PINS			Pcs/Box	Weight/Box (Kg)
		ACC	ACS	Lenght		
MB	30x40	2		6.3	254	4-6
MC	30x50	2		6.3	254	4-6
NB	35x40	2	4	6.3	100	6-8
NC	35x50	2	4	6.3	100	6-8
NN	35x60	2	4	6.3	100	5-7
NE	35x75	2	4	6.3	50	6-8
PB	40x40	2	4	6.3	126	9-10
PC	40x50	2	4	6.3	126	9-10
PN	40x60	2	4	6.3	63	9-10
PE	40x75		4	6.3	63	7-9
PG	40x100		4	6.3	63	9-10
PH	40x105		4	6.3	48	8-10
QC	45x50		4	6.3	96	6-8
QN	45x60		4	6.3	48	6-8
QE	45x75		4	6.3	48	7-9
QG	45x100		4	6.3	48	8-10
QH	45x105		4	6.3	48	8-10
RE	50x75		4	6.3	48	8-10
RG	50x100		4	6.3	48	8-10
RH	50x105		4	6.3	48	8-10

All dimensions in mm, torque in Nm, weight in kg

Parameters	U.M.	Symbol/Value	Notes
Expected lifetime	[hrs]	5.000	@rated voltage, temperature and ripple current
Climatic category		40/85/56	-40°C / +85°C / 85% Relative Humidity
Voltage	[V]	V_R	40 – 500
Capacitance	[μF]	C	C_{10} rated value at t=0hrs
Capacitance tolerance	%	M = 20 %	Other capacitance on request as indicated in the data book
Series resistance	[mΩ]	ESR	ESR_{10} rated value at t=0hrs
Leakage Current	[mA]	$I_f = 0,004 \cdot C \cdot V$	I_{f10} rated value at t=0hrs
I Ripple	[A]	I_R	Ripple current @ rated parameters
		$I_t = K_f \cdot K_t \cdot I_R$	I_t ripple current at a given T
		K_f	Frequency Correlation Factor See table below
		K_t	Temperature Correlation Factor See table below
End of Life values		$\Delta C/C_{10} \leq 30\%$	
		$ESR \leq 3 \cdot ESR_{10}$	
		$I_f \leq I_{f10}$	
Surge Voltage	[V]	$V_{surge} = 1,1 \cdot V_R$	≤450V
		$V_{surge} = 1,05 \cdot V_R$	=500V

Ripple Current Coefficient

Hz	50	100	300	400	500	1000
V≤300	0.90	1.00	1.14	1.18	1.20	1.25
V>300	0.88	1.00	1.20	1.25	1.35	1.40

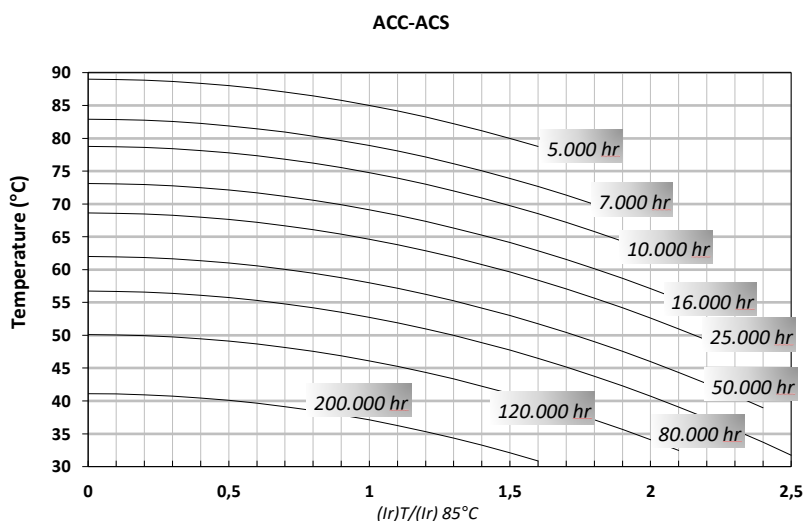
°C	40	55	65	75	85
Kt	2.30	1.90	1.70	1.40	1.00

Note: Superimposed alternating voltage summed to DC voltage must not exceed rated voltage, rated ripple current must not be exceeded and no reverse polarity is allowed

Ordering Code: Example – ACC471M450NC1

ACC	471	M	450	NC	1
Series	C with multiplying factor:	Tolerance	V_R	Size	1=sleeve 0=no sleeve
	1=x10, 2=x100, 3=x1.000,				

Expected Lifetime Vs Temperature and Ripple Current



	Capacitance	Case	Diam	Height	Tand	ESRmax typ		Zmax	Iripple @100Hz		Ordering Code
	[μF]@100Hz		[mm]	[mm]	[%]@100Hz	[mΩ]@100Hz	[mΩ]@10KHz	[A]@55°C	[A]@85°C		*= C, 2 Pins S, 4 Pins
40	6800	MB	30	40	0,3	56	45	42	8,2	4,3	AC*682M040MB1
	10000	MC	30	50	0,32	41	33	31	10,7	5,6	AC*103M040MC1
		NB	35	40	0,36	46	37	34	9,9	5,2	AC*103M040NB1
	15000	NC	35	50	0,36	31	24	23	13,3	7	AC*153M040NC1
	22000	PC	40	50	0,48	28	22	21	15	7,9	AC*223M040PC1
	33000	PE	40	75	0,48	19	15	14	22	11,6	AC*333M040PE1
	47000	PG	40	100	0,48	13	10	10	29,9	15,7	AC*473M040PG1
63	4700	MB	30	40	0,21	57	46	43	8,2	4,3	AC*472M063MB1
	6800	MC	30	50	0,21	39	31	30	10,9	5,7	AC*682M063MC1
	6800	NB	35	40	0,24	45	36	34	10,1	5,3	AC*682M063NB1
	10000	NC	35	50	0,24	31	24	23	13,4	7	AC*103M063NC1
	12000	PC	40	50	0,29	31	25	23	14,5	7,6	AC*123M063PC1
	15000	PE	40	75	0,29	25	20	18	19,3	10,1	AC*153M063PE1
	22000	PG	40	100	0,29	17	13	13	26,2	13,8	AC*223M063PG1
100	1500	MB	30	40	0,09	76	61	57	7,1	3,7	AC*152M100MB1
	2200	MC	30	50	0,1	58	46	43	9,4	5	AC*222M100MC1
		NB	35	40	0,11	64	51	48	8,9	4,7	AC*222M100NB1
	3300	MC	30	50	0,12	46	37	35	10,5	5,5	AC*332M100MC1
	4700	NC	35	50	0,12	33	26	24	13,7	7,2	AC*472M100NC1
	5600	PC	40	50	0,12	27	22	20	16,2	8,5	AC*562M100PC1
	6800	PE	40	75	0,12	22	18	17	21,2	11,2	AC*682M100PE1
200	10000	PG	40	100	0,12	15	12	11	29,2	15,4	AC*103M100PG1
	680	MB	30	40	0,08	150	120	112	5,3	2,8	AC*681M200MB1
	1000	NB	35	40	0,08	102	82	76	7,1	3,7	AC*102M200NB1
	1200	MC	30	50	0,08	85	68	64	7,8	4,1	AC*122M200MC1
	1500	NC	35	50	0,08	68	54	51	9,5	5	AC*152M200NC1
	2200	NC	35	50	0,08	46	37	35	11,5	6	AC*222M200NC1
	2700	PE	40	75	0,08	38	30	28	16,4	8,6	AC*272M200PE1
	3300	PG	40	100	0,08	31	25	23	20,6	10,8	AC*332M200PG1
		QC	45	50	0,08	31	25	23	16,3	8,6	AC*332M200QC1
	3900	QE	45	75	0,08	26	21	20	21	11,1	AC*392M200QE1
250	4700	QG	45	100	0,08	22	17	16	26,2	13,8	AC*472M200QG1
	470	MB	30	40	0,08	217	173	163	4,4	2,3	AC*471M250MB1
	1000	MC	30	50	0,08	102	82	76	7,1	3,7	AC*102M250MC1
	1000	NB	35	40	0,08	102	82	76	7,1	3,7	AC*102M250NB1
	1500	NC	35	50	0,08	68	54	51	9,5	5	AC*152M250NC1
	1800	PC	40	50	0,08	57	45	42	11,2	5,9	AC*182M250PC1
	2200	NE	35	75	0,08	46	37	35	13,7	7,2	AC*222M250NE1
		QC	45	50	0,08	46	37	35	13,3	7	AC*222M250QC1
	2700	PE	40	75	0,08	38	30	28	16,4	8,6	AC*272M250PE1

	Capacitance	Case	Diam	Height	Tand	ESRmax typ		Zmax	Iripple @100Hz		Ordering Code
	[μF]@100Hz		[mm]	[mm]	[%]@100Hz	[mΩ]@100Hz	[mΩ]@10KHz	[mΩ]@10KHz	[A]@55°C	[A]@85°C	*= C, 2 Pins S, 4 Pins
250	2700	PE	40	75	0,08	38	30	28	16,4	8,6	AC*272M250PE1
	3300	PG	40	100	0,08	31	25	23	20,6	10,8	AC*332M250PG1
	3300	QE	45	75	0,08	31	25	23	19,3	10,2	AC*332M250QE1
	3900	QG	45	100	0,08	26	21	20	23,9	12,6	AC*392M250QG1
400	220	MB	30	40	0,1	579	463	434	3,3	1,7	AC*221M400MB1
	330	MB	30	40	0,1	386	309	290	4	2,1	AC*331M400MB1
		MC	30	50	0,1	386	309	290	4,4	2,3	AC*331M400MC1
	390	MB	30	40	0,1	327	261	245	4,3	2,3	AC*391M400MB1
		MC	30	50	0,1	327	261	245	4,8	2,5	AC*391M400MC1
		NC	35	50	0,1	327	261	245	5,2	2,7	AC*391M400NC1
	470	MC	30	50	0,1	271	217	203	5,2	2,8	AC*471M400MC1
		NB	35	40	0,1	271	217	203	5,2	2,7	AC*471M400NB1
		NC	35	50	0,1	271	217	203	5,7	3	AC*471M400NC1
		PB	40	40	0,1	271	217	203	5,6	3	AC*471M400PB1
		NN	35	60	0,1	271	217	203	6,2	3,2	AC*471M400NN1
	560	NC	35	50	0,1	227	182	171	6,2	3,3	AC*561M400NC1
	680	NC	35	50	0,1	187	150	141	6,9	3,6	AC*681M400NC1
		NN	35	60	0,1	187	150	141	7,4	3,9	AC*681M400NN1
		NE	35	75	0,1	187	150	141	8,2	4,3	AC*681M400NE1
		PC	40	50	0,1	187	150	141	7,4	3,9	AC*681M400PC1
	820	NN	35	60	0,1	155	124	117	8,2	4,3	AC*821M400NN1
		NE	35	75	0,1	155	124	117	9	4,7	AC*821M400NE1
		PC	40	50	0,1	155	124	117	8,1	4,3	AC*821M400PC1
	1000	NN	35	60	0,1	127	102	96	9	4,7	AC*102M400NN1
		NE	35	75	0,1	127	102	96	9,9	5,2	AC*102M400NE1
		PN	40	60	0,1	127	102	96	9,7	5,1	AC*102M400PN1
		PE	40	75	0,1	127	102	96	10,7	5,6	AC*102M400PE1
		QC	45	50	0,1	127	102	96	9,6	5,1	AC*102M400QC1
	1200	NE	35	75	0,1	106	85	80	10,9	5,7	AC*122M400NE1
		PE	40	75	0,1	106	85	80	11,7	6,2	AC*122M400PE1
	1500	PE	40	75	0,1	85	68	64	13,1	6,9	AC*152M400PE1
		PG	40	100	0,1	85	68	64	14,9	7,8	AC*152M400PG1
		QN	45	60	0,1	85	68	64	12,7	6,7	AC*152M400QN1
		QE	45	75	0,1	85	68	64	14	7,4	AC*152M400QE1
		QG	45	100	0,1	85	68	64	15,9	8,4	AC*152M400QG1
	1800	QE	45	75	0,1	71	57	53	15,3	8,1	AC*182M400QE1
	2200	QG	45	100	0,1	58	46	43	19,3	10,1	AC*222M400QG1
	2700	QG	45	100	0,1	47	38	35	21,3	11,2	AC*272M400QG1
	3300	RG	50	100	0,1	39	31	29	25	13,2	AC*332M400RG1

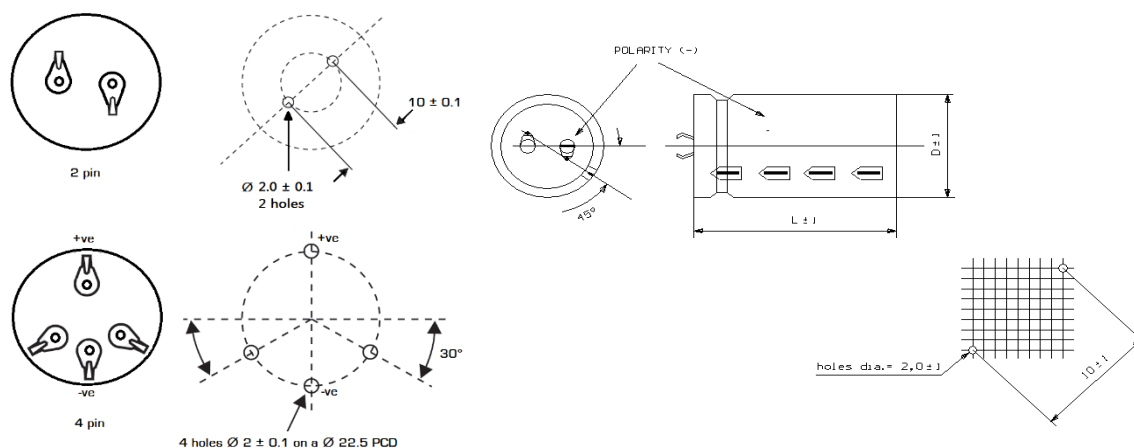
	Capacitance	Case	Diam	Height	Tand	ESRmax typ		Zmax	Iripple @100Hz		Ordering Code
	[µF]@100Hz		[mm]	[mm]	[%]@100Hz	[mΩ]@100Hz	[mΩ]@10KHz	[mΩ]@10KHz	[A]@55°C	[A]@85°C	*= C, 2 Pins S, 4 Pins
450	150	MB	30	40	0,12	1019	815	764	2,5	1,3	AC*151M450MB1
	220	MB	30	40	0,12	695	556	521	3	1,6	AC*221M450MB1
	330	MC	30	50	0,12	463	371	347	4	2,1	AC*331M450MC1
		NB	35	40	0,12	463	371	347	4	2,1	AC*331M450NB1
		NC	35	50	0,12	463	371	347	4,4	2,3	AC*331M450NC1
		NB	35	40	0,12	325	260	244	4,7	2,5	AC*471M450NB1
	470	NC	35	50	0,12	325	260	244	5,2	2,7	AC*471M450NC1
		NN	35	60	0,12	325	260	244	5,6	3	AC*471M450NN1
		PB	40	40	0,12	325	260	244	5,1	2,7	AC*471M450PB1
	560	NC	35	50	0,12	273	218	205	5,7	3	AC*561M450NC1
		NE	35	75	0,12	273	218	205	6,8	3,6	AC*561M450NE1
		PC	40	50	0,12	273	218	205	6,1	3,2	AC*561M450PC1
		PE	40	75	0,12	273	218	205	7,3	3,8	AC*561M450PE1
	680	NN	35	60	0,12	225	180	169	6,8	3,6	AC*681M450NN1
		NE	35	75	0,12	225	180	169	7,5	3,9	AC*681M450NE1
		PC	40	50	0,12	225	180	169	6,8	3,6	AC*681M450PC1
	820	NN	35	60	0,12	186	149	140	7,4	3,9	AC*821M450NN1
		NE	35	75	0,12	186	149	140	8,2	4,3	AC*821M450NE1
	1000	PN	40	60	0,12	153	122	115	8,9	4,7	AC*102M450PN1
		PE	40	75	0,12	153	122	115	9,8	5,1	AC*102M450PE1
		PG	40	100	0,12	153	122	115	11,1	5,9	AC*102M450PG1
		QC	45	50	0,12	153	122	115	8,8	4,6	AC*102M450QC1
	1360	PG	40	100	0,12	112	90	84	13	6,8	AC*1361M450PG1
	1500	PG	40	100	0,12	102	82	76	13,6	7,2	AC*152M450PG1
		QE	45	75	0,12	102	82	76	12,8	6,7	AC*152M450QE1
	1800	QG	45	100	0,12	85	68	64	15,9	8,4	AC*182M450QG1
	2200	QG	45	100	0,12	69	56	52	17,6	9,3	AC*222M450QG1
	2700	QG	45	100	0,12	57	45	42	19,5	10,3	AC*272M450QG1
	3300	RG	50	100	0,12	46	37	35	22,8	12	AC*332M450RG1
500	220	MC	30	50	0,15	869	695	651	2,1	1,1	AC*221M500MC1
	330	NC	35	50	0,15	579	463	434	2,9	1,5	AC*331M500NC1
	390	NC	35	50	0,15	490	392	367	3,1	1,6	AC*391M500NC1
	470	NN	35	60	0,15	407	325	305	3,7	1,9	AC*471M500NN1
	470	PC	40	50	0,15	407	325	305	3,7	1,9	AC*471M500PC1
	560	NE	35	75	0,15	341	273	256	4,5	2,3	AC*561M500NE1
	560	PC	40	50	0,15	341	273	256	4	2,1	AC*561M500PC1
	680	PN	40	60	0,15	281	225	211	4,8	2,5	AC*681M500PN1
	680	PE	40	75	0,15	281	225	211	5,3	2,8	AC*681M500PE1
	680	QC	45	50	0,15	281	225	211	4,8	2,5	AC*681M500QC1
	1000	PG	40	100	0,15	191	153	143	7,3	3,8	AC*102M500PG1

Standard 85°C - Industrial application

ACC/ACS – 5.000 hrs – 85°

	Capacitance	Case	Diam	Height	Tand	ESRmax typ		Zmax	Iripple @100Hz		Ordering Code
	[μF]@100Hz		[mm]	[mm]	[%]@100Hz	[mΩ]@100Hz		[mΩ]@10KHz	[A]@55°C	[A]@85°C	*= C, 2 Pins S, 4 Pins
500	1000	QE	45	75	0,15	191	153	143	6,9	3,6	AC*102M500QE1
	1200	QG	45	100	0,15	159	127	119	8,5	4,5	AC*122M500QG1
	1500	QG	45	100	0,15	127	102	96	9,5	5	AC*152M500QG1
	1800	RG	50	100	0,15	106	85	80	11,1	5,8	AC*182M500RG1

Technical Drawing



Dimension, Quantity and Weight for Box

Case		Connections			Packaging	
Code	DxL (mm)	PINS			Pcs/Box	Weight/Box (Kg)
		ACC	ACS	Length		
MB	30x40	2		6.3	254	4-6
MC	30x50	2		6.3	254	4-6
NB	35x40	2	4	6.3	100	6-8
NC	35x50	2	4	6.3	100	6-8
NN	35x60	2	4	6.3	100	5-7
NE	35x75	2	4	6.3	50	6-8
PB	40x40	2	4	6.3	126	9-10
PC	40x50	2	4	6.3	126	9-10
PN	40x60	2	4	6.3	63	9-10
PE	40x75		4	6.3	63	7-9
PG	40x100		4	6.3	63	9-10
PH	40x105		4	6.3	48	8-10
QC	45x50		4	6.3	96	6-8
QN	45x60		4	6.3	48	6-8
QE	45x75		4	6.3	48	7-9
QG	45x100		4	6.3	48	8-10
QH	45x105		4	6.3	48	8-10
RE	50x75		4	6.3	48	8-10
RG	50x100		4	6.3	48	8-10
RH	50x105		4	6.3	48	8-10

All dimensions in mm, torque in Nm, weight in kg

Parameters	U.M.	Symbol/Value	Notes
Expected lifetime	[hrs]	20.000	@rated voltage, temperature and ripple current
Climatic category		40/85/56	-40°C / +85°C / 85% Relative Humidity
Voltage	[V]	V_R	160 - 450
Capacitance	[μF]	C	C_{t0} rated value at t=0hrs
Capacitance tolerance	%	M = 20 %	Other capacitance on request as indicated in the data book
Series resistance	[mΩ]	ESR	ESR_{t0} rated value at t=0hrs
Leakage Current	[mA]	$I_f = 0,004 \cdot C \cdot V$	I_{ft0} rated value at t=0hrs
I Ripple	[A]	I_R	Ripple current @ rated parameters
		$I_t = K_f \cdot K_t \cdot I_R$	I_t ripple current at a given T
		K_f	Frequency Correlation Factor See table below
		K_t	Temperature Correlation Factor See table below
End of Life values		$\Delta C/C_{t0} \leq 30\%$	
		$ESR \leq 3 \cdot ESR_{t0}$	
		$I_f \leq I_{ft0}$	
Surge Voltage	[V]	$V_{surge} = 1,1 \cdot V_R$	≤450V
		$V_{surge} = 1,05 \cdot V_R$	

Ripple Current Coefficient

Hz	50	100	120	200	300	400	500	1000
Kf	0.72	1.00	1.03	1.14	1.24	1.29	1.32	1.37

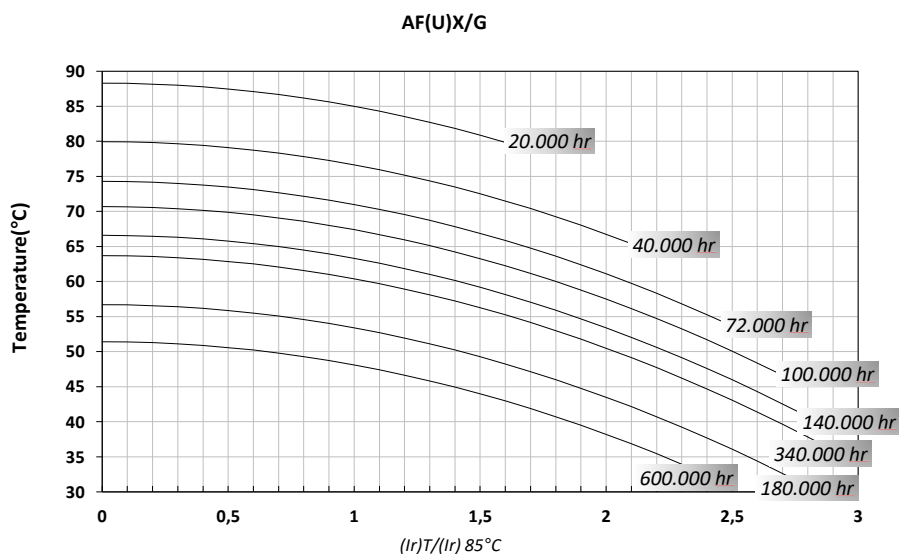
°C	40	55	65	75	85
Kt	1.65	1.50	1.40	1.20	1.00

Note: Superimposed alternating voltage summed to DC voltage must not exceed rated voltage, rated ripple current must not be exceeded and no reverse polarity is allowed

Ordering Code: Example – AFUX472M450DF1

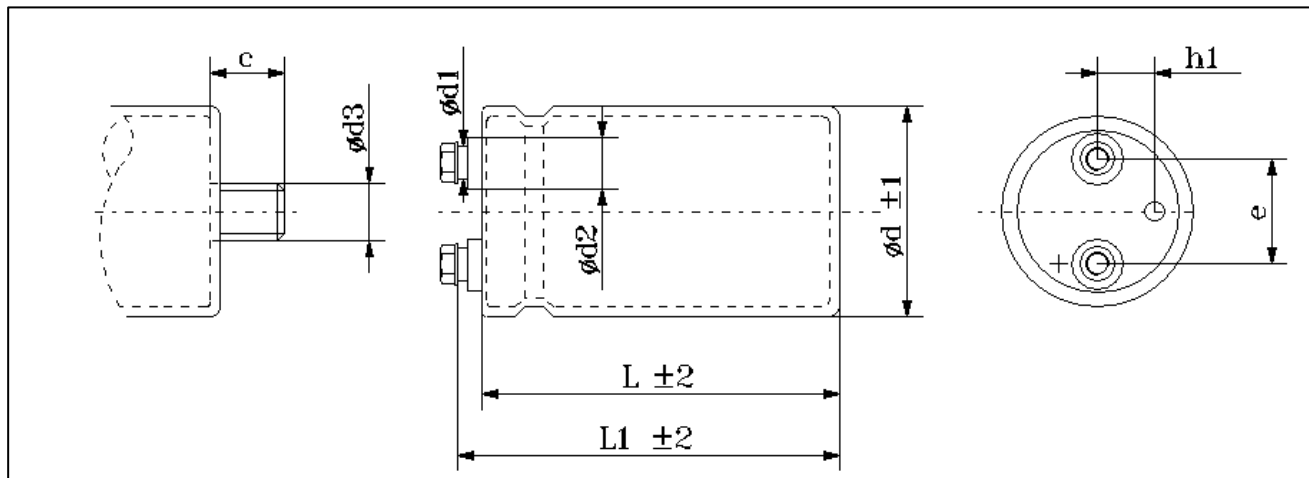
AF	(U)	X	472	M	450	DF	1
Series	U=mounting stud	Terminals	C with multiplying factor:	Tolerance	V_R	Size	1=sleeve 0=no sleeve
	Void=flat bottom		1=x10, 2=x100, 3=x1.000,				

Expected Lifetime Vs Temperature and Ripple Current



	Capacitance	Case	Diam	Height	Tanδ	ESRmax typ		Zmax	Iripple @100Hz		Ordering Code
	[uF]@100Hz		[mm]	[mm]	[%]@100Hz	[mΩ]@100Hz		[mΩ]@10KHz	[A]@55°C	[A]@85°C	(U) for mounting stud
350	2200	CC	63	105	0,06	43	35	33	15,1	10,1	AF(U)X222M350CC1
	3300	DF	76	145	0,06	29	23	22	23,7	15,8	AF(U)X332M350DF1
	4700	DF	76	145	0,06	20	16	15	28,3	18,9	AF(U)X472M350DF1
	6800	DF	76	145	0,06	14	11	11	34,1	22,7	AF(U)X682M350DF1
		DJ	76	222	0,06	14	11	11	41,3	27,5	AF(U)X682M350DJ1
	10000	DJ	76	222	0,06	10	8	7	50,1	33,4	AF(U)X103M350DJ1
		EF	90	145	0,06	10	8	7	45,4	30,3	AF(U)G103M350EF1
	15000	EJ	90	222	0,06	6	5	5	67,2	44,8	AF(U)G153M350EJ1
400	1500	DC	76	105	0,06	64	51	48	14,0	9,4	AF(U)X152M400DC1
	2200	DC	76	105	0,06	43	35	33	17,0	11,3	AF(U)X222M400DC1
	3300	DC	76	105	0,06	29	23	22	20,8	13,9	AF(U)X332M400DC1
		DF	76	145	0,06	29	23	22	23,9	16,0	AF(U)X332M400DF1
	4700	DC	76	145	0,06	20	16	15	24,8	16,6	AF(U)X472M400DC1
		DF	76	145	0,06	20	16	15	28,6	19,0	AF(U)X472M400DF1
	6800	DF	76	145	0,06	14	11	11	34,4	22,9	AF(U)X682M400DF1
		DJ	76	222	0,06	14	11	11	41,7	27,8	AF(U)X682M400DJ1
	10000	DJ	76	222	0,06	10	8	7	50,5	33,7	AF(U)X103M400DJ1
		EF	90	145	0,06	10	8	7	45,8	30,5	AF(U)G103M400EF1
	15000	EJ	90	222	0,06	6	5	5	67,8	45,2	AF(U)G153M400EJ1
450	1500	CC	63	105	0,06	64	51	48	12,6	8,4	AF(U)X152M450CC1
	2200	CC	63	105	0,06	43	35	33	15,3	10,2	AF(U)X222M450CC1
	3300	DC	76	105	0,06	29	23	22	20,8	13,9	AF(U)X332M450DC1
		DF	76	145	0,06	29	23	22	23,9	16,0	AF(U)X332M450DF1
	3900	DF	76	145	0,06	24	20	18	26,0	17,3	AF(U)X392M450DF1
	4700	DF	76	145	0,06	20	16	15	28,6	19,0	AF(U)X472M450DF1
	5600	DF	76	145	0,06	17	14	13	31,2	20,8	AF(U)X562M450DF1
	6800	EF	90	145	0,06	14	11	11	37,8	25,2	AF(U)G682M450EF1
		DJ	76	222	0,06	14	11	11	41,7	27,8	AF(U)X682M450DJ1
	10000	DJ	76	222	0,06	10	8	7	50,5	33,7	AF(U)X103M450DJ1
		EJ	90	222	0,06	10	8	7	55,4	36,9	AF(U)G103M450EJ1



Technical Drawing

Dimension, Quantity and Weight for Box

Case				Connections							Mounting Stud			Packaging	
Code	DxL (mm)	L1	h1	d1	d2	e	Terminal	Screw			Screw			Pcs Box	Weight Box (Kg).
							Code	Thread	Torque (Nm)	Length	d3	c	Torque (Nm)		
BB	51x83	89	13	13	18	22.2	X	M5	2,0	10	M12	16	10	30	5-7
BC	51x105	111	13	13	18	22.2	X	M5	2,0	10	M12	16	10	30	6-9
CC	63x105	111	16	13	18	28.6	X	M5	2,0	10	M12	16	10	20	6-8
CF	63x145	151	19	13	18	28.6	X	M5	2,0	10	M12	16	10	20	9-10
DC	76x105	111	19	13	18	31.8	X	M5	2,0	10	M12	16	10	12	6-8
DF	76x145	151	19	13	18	31.8	X	M5	2,0	10	M12	16	10	12	8-14
				18	23		G	M6	2,5						
DK	76x165	173	19	13	18	31.8	X	M5	2,0	10	M12	16	10	12	9-14
				18	23		G	M6	2,5						
DG	76x200	207	19	13	18	31.8	X	M5	2,0	10	M12	16	10	12	9-13
				18	23		G	M6	2,5						
DJ	76x222	227	19	13	18	31.8	X	M5	2,0	10	M12	16	10	8	9-12
				18	23		G	M6	2,5						
DL	76x240	245	19	13	18	31.8	X	M5	2,0	10	M12	16	10	12	9-13
				18	23		G	M6	2,5						
EC	90x105	111	19	18	23	31,8	G	M6	2,5	10	M12	16	10	6	7-9
EF	90x145	151	19	18	23	31,8	G	M6	2,5	10	M12	16	10	6	9-11
EG	90x200	207	19	18	23	31,8	G	M6	2,5	10	M12	16	10	6	9-11
EJ	90x222	227	19	18	23	31,8	G	M6	2,5	10	M12	16	10	6	8-12
EL	90x240	245	19	18	23	31,8	G	M6	2,5	10	M12	16	10	6	9-13

All dimensions in mm, torque in Nm, weight in kg



Parameters	U.M.	Symbol/Value	Notes
Expected lifetime	[hrs]	15.000	@rated voltage, temperature and ripple current
Climatic category		40/85/56	-40°C / +85°C / 85% Relative Humidity
Voltage	[V]	V_R	160 - 450V
Capacitance	[μF]	C	C_{t0} rated value at t=0hrs
Capacitance tolerance	%	M = 20 %	Other capacitance on request as indicated in the data book
Series resistance	[mΩ]	ESR	ESR_{t0} rated value at t=0hrs
Leakage Current	[mA]	$I_f = 0,004 \cdot C \cdot V$	I_{ft0} rated value at t=0hrs
I Ripple	[A]	I_R	Ripple current @ rated parameters
		$I_t = K_f \cdot K_t \cdot I_R$	I_t ripple current at a given T
		K_f	Frequency Correlation Factor See table below
		K_t	Temperature Correlation Factor See table below
End of Life values		$\Delta C/C_{t0} \leq 30\%$	
		$ESR \leq 3 \cdot ESR_{t0}$	
		$I_f \leq I_{ft0}$	
Surge Voltage	[V]	$V_{surge} = 1,1 \cdot V_R$	$\leq 450V$
		$V_{surge} = 1,05 \cdot V_R$	

Ripple Current Coefficient

Hz	50	100	120	200	300	400	500	1000
Kf	0.89	1.00	1.02	1.06	1.08	1.09	1.32	1.37

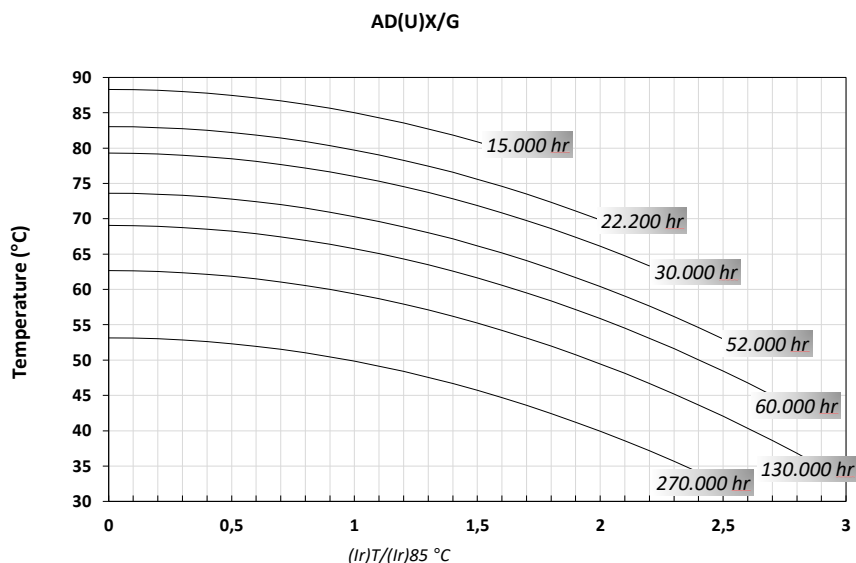
°C	40	55	65	75	85
Kt	1.55	1.40	1.20	1.10	1.00

Note: Superimposed alternating voltage summed to DC voltage must not exceed rated voltage, rated ripple current must not be exceeded and no reverse polarity is allowed

Ordering Code: Example – ADUX472M450DF1

AD	(U)	X	472	M	450	DF	1
Series	U=mounting stud	Terminals	C with multiplying factor:	Tolerance	V_R	Size	1=sleeve 0=no sleeve
	Void=flat bottom		1=x10, 2=x100, 3=x1.000,				

Expected Lifetime Vs Temperature and Ripple Current

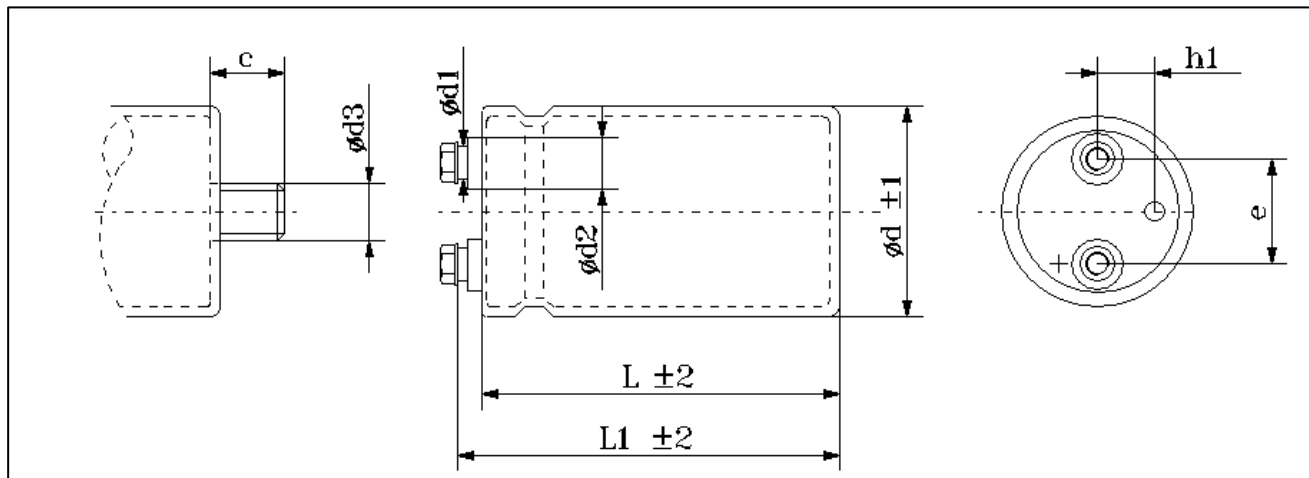


	Capacitance	Case	Diam	Height	Tanδ	ESRmax typ		Zmax	Iripple @100Hz		Ordering Code
	[uF]@100Hz		[mm]	[mm]	[%]@100Hz	[mΩ]@100Hz	[mΩ]@10KHz		[A]@55°C	[A]@85°C	(U) for mounting stud
160	4700	BC	51	105	0,09	30	24	23	14,9	10,6	AD(U)X472M160BC1
		CC	63	105	0,09	30	24	23	16,9	12	AD(U)X472M160CC1
	6800	DC	76	105	0,09	21	17	16	22,5	16,1	AD(U)X682M160DC1
	10000	DC	76	105	0,09	14	11	11	27,3	19,5	AD(U)X103M160DC1
	15000	DF	76	145	0,09	10	8	7	38,5	27,5	AD(U)X153M160DF1
		DF	76	145	0,09	6	5	5	46,6	33,3	AD(U)X223M160DF1
		EF	90	222	0,09	7	5	5	61,5	43,9	AD(U)G223M160EF1
200	3300	BC	51	105	0,08	39	31	29	13,2	9,4	AD(U)X332M200BC1
	4700	CC	63	105	0,08	27	22	20	17,8	12,7	AD(U)X472M200CC1
		DC	76	105	0,08	27	22	20	19,9	14,2	AD(U)X472M200DC1
	6800	DC	76	105	0,08	19	15	14	23,9	17,1	AD(U)X682M200DC1
	10000	DF	76	145	0,08	13	10	10	33,3	23,8	AD(U)X103M200DF1
	15000	DF	76	145	0,08	8	7	6	40,8	29,2	AD(U)X153M200DF1
		DF	76	145	0,08	6	5	4	49,4	35,3	AD(U)X223M200DF1
250	2200	BB	51	83	0,07	51	41	38	10,4	7,4	AD(U)X222M250BB1
		BC	51	105	0,07	51	41	38	11,5	8,2	AD(U)X222M250BC1
	3300	BC	51	105	0,07	34	27	25	14,1	10,1	AD(U)X332M250BC1
		CC	63	105	0,07	34	27	25	16	11,4	AD(U)X332M250CC1
	4700	DC	76	105	0,07	24	19	18	21,3	15,2	AD(U)X472M250DC1
	6800	DC	76	105	0,07	16	13	12	25,6	18,3	AD(U)X682M250DC1
	10000	DF	76	145	0,07	11	9	8	35,7	25,5	AD(U)X103M250DF1
		EC	90	105	0,07	11	9	8	34,2	24,4	AD(U)G103M250EC1
	15000	DF	76	145	0,07	7	6	6	43,7	31,2	AD(U)X153M250DF1
		EJ	90	222	0,07	7	6	6	57,6	41,1	AD(U)G153M250EJ1
350	4700	DC	76	105	0,06	20	16	15	23	16,4	AD(U)X472M350DC1
		DF	76	145	0,06	20	16	15	26,4	18,8	AD(U)X472M350DF1
	6800	DF	76	145	0,06	14	11	11	31,8	22,7	AD(U)X682M350DF1
		EC	90	105	0,06	14	11	11	30,5	21,8	AD(U)G682M350EC1
	10000	DF	76	145	0,06	10	8	7	38,6	27,5	AD(U)X103M350DF1
		DJ	76	222	0,06	10	8	7	46,4	33,1	AD(U)X103M350DJ1
		EC	90	105	0,06	10	8	7	37	26,4	AD(U)G103M350EC1
	15000	DJ	76	222	0,06	6	5	5	56,8	40,5	AD(U)X153M350DJ1
		EF	90	145	0,06	6	5	5	51,9	37	AD(U)G153M350EF1
		EJ	90	222	0,06	6	5	5	62,2	44,4	AD(U)G153M350EJ1
	20000	EG	90	200	0,06	5	4	4	68	48,5	AD(U)G203M350EG1
	22000	EJ	90	222	0,06	4	3	3	75,4	53,8	AD(U)G223M350EJ1
	25000	EL	90	240	0,06	4	3	3	83,2	59,5	AD(U)G253M350EL1
	27000	EJ	90	222	0,06	4	3	3	83,5	59,6	AD(U)G273M350EJ1
	30000	EL	90	240	0,06	3	3	2	91,2	65,1	AD(U)G303M350EL1



	Capacitance	Case	Diam	Height	Tanδ	ESRmax typ		Zmax	Iripple @100Hz		Ordering Code
	[uF]@100Hz		[mm]	[mm]	[%]@100Hz	[mΩ]@100Hz		[mΩ]@10KHz	[A]@55°C	[A]@85°C	(U) for mounting stud
400	3300	CC	63	105	0,06	29	23	22	17,5	12,5	AD(U)X332M400CC1
	3300	DC	76	105	0,06	29	23	22	19,4	13,9	AD(U)X332M400DC1
	3900	CC	63	105	0,06	24	20	18	19	13,6	AD(U)X392M400CC1
	3900	DC	76	105	0,06	24	20	18	21,1	15,1	AD(U)X392M400DC1
	4700	DC	76	105	0,06	20	16	15	23,2	16,6	AD(U)X472M400DC1
	4700	DF	76	145	0,06	20	16	15	26,7	19	AD(U)X472M400DF1
	6800	DF	76	145	0,06	14	11	11	32,1	22,9	AD(U)X682M400DF1
	8200	DF	76	145	0,06	12	9	9	35,2	25,2	AD(U)X822M400DF1
	10000	DF	76	145	0,06	10	8	7	38,9	27,8	AD(U)X103M400DF1
		DJ	76	222	0,06	10	8	7	47,1	33,7	AD(U)X103M400DJ1
		EF	90	145	0,06	10	8	7	42,8	30,5	AD(U)G103M400EF1
	15000	EJ	90	222	0,06	6	5	5	63,3	45,2	AD(U)G153M400EJ1
	20000	DL	76	240	0,06	5	4	4	69,1	49,4	AD(U)X203M400DL1
	20000	EL	90	240	0,06	5	4	4	75,7	54,1	AD(U)G203M400EL1
	23000	EG	90	200	0,06	4	3	3	74,8	53,4	AD(U)G233M400EG1
	24000	EL	90	240	0,06	4	3	3	82,9	59,2	AD(U)G243M400EL1
450	2200	CC	63	105	0,06	43	35	33	14,3	10,2	AD(U)X222M450CC1
		DC	76	105	0,06	43	35	33	15,9	11,3	AD(U)X222M450DC1
	3300	CC	63	105	0,06	29	23	22	17,5	12,5	AD(U)X332M450CC1
		DC	76	105	0,06	29	23	22	19,4	13,9	AD(U)X332M450DC1
		DF	76	145	0,06	29	23	22	22,3	16	AD(U)X332M450DF1
	3900	DC	76	105	0,06	24	20	18	21,1	15,1	AD(U)X392M450DC1
		DF	76	145	0,06	24	20	18	24,3	17,3	AD(U)X392M450DF1
	4700	DC	76	105	0,06	20	16	15	23,2	16,6	AD(U)X472M450DC1
		DF	76	145	0,06	20	16	15	26,7	19	AD(U)X472M450DF1
		EC	90	105	0,06	20	16	15	25,6	18,3	AD(U)G472M450EC1
	5600	DF	76	145	0,06	17	14	13	29,1	20,8	AD(U)X562M450DF1
	6800	DF	76	145	0,06	14	11	11	32,1	22,9	AD(U)X682M450DF1
		DJ	76	222	0,06	14	11	11	38,9	27,8	AD(U)X682M450DJ1
	8200	DF	76	145	0,06	12	9	9	35,2	25,2	AD(U)X822M450DF1
	10000	DJ	76	222	0,06	10	8	7	47,1	33,7	AD(U)X103M450DJ1
		EJ	90	222	0,06	10	8	7	51,7	36,9	AD(U)G103M450EJ1
	15000	EJ	90	222	0,06	6	5	5	63,3	45,2	AD(U)G153M450EJ1
	18000	EL	90	240	0,06	5	4	4	71,8	51,3	AD(U)G183M450EL1
	22000	EG	90	200	0,06	4	3	3	73,1	52,2	AD(U)G223M450EG1
	23000	EL	90	240	0,06	4	3	3	81,2	58	AD(U)G233M400EL1



Technical Drawing

Dimension, Quantity and Weight for Box

Case				Connections							Mounting Stud			Packaging	
Code	DxL (mm)	L1	h1	d1	d2	e	Terminal	Screw			Screw			Pcs Box	Weight Box (Kg).
							Code	Thread	Torque (Nm)	Length	d3	c	Torque (Nm)		
BB	51x83	89	13	13	18	22.2	X	M5	2,0	10	M12	16	10	30	5-7
BC	51x105	111	13	13	18	22.2	X	M5	2,0	10	M12	16	10	30	6-9
CC	63x105	111	16	13	18	28.6	X	M5	2,0	10	M12	16	10	20	6-8
CF	63x145	151	19	13	18	28.6	X	M5	2,0	10	M12	16	10	20	9-10
DC	76x105	111	19	13	18	31.8	X	M5	2,0	10	M12	16	10	12	6-8
DF	76x145	151	19	13	18	31.8	X	M5	2,0	10	M12	16	10	12	8-14
				18	23		G	M6	2,5						
DK	76x165	173	19	13	18	31.8	X	M5	2,0	10	M12	16	10	12	9-14
				18	23		G	M6	2,5						
DG	76x200	207	19	13	18	31.8	X	M5	2,0	10	M12	16	10	12	9-13
				18	23		G	M6	2,5						
DJ	76x222	227	19	13	18	31.8	X	M5	2,0	10	M12	16	10	8	9-12
				18	23		G	M6	2,5						
DL	76x240	245	19	13	18	31.8	X	M5	2,0	10	M12	16	10	12	9-13
				18	23		G	M6	2,5						
EC	90x105	111	19	18	23	31,8	G	M6	2,5	10	M12	16	10	6	7-9
EF	90x145	151	19	18	23	31,8	G	M6	2,5	10	M12	16	10	6	9-11
EG	90x200	207	19	18	23	31,8	G	M6	2,5	10	M12	16	10	6	9-11
EJ	90x222	227	19	18	23	31,8	G	M6	2,5	10	M12	16	10	6	8-12
EL	90x240	245	19	18	23	31,8	G	M6	2,5	10	M12	16	10	6	9-13

All dimensions in mm, torque in Nm, weight in kg



Parameters	U.M.	Symbol/Value	Notes
Expected lifetime	[hrs]	6.000	@rated voltage, temperature and ripple current
Climatic category		40/85/56	-40°C / +85°C / 85% Relative Humidity
Voltage	[V]	V_R	550 - 600V
Capacitance	[μF]	C	C_{10} rated value at t=0hrs
Capacitance tolerance	%	M = 20 %	Other capacitance on request as indicated in the data book
Series resistance	[mΩ]	ESR	ESR_{10} rated value at t=0hrs
Leakage Current	[mA]	$I_f = 0,004 \cdot C \cdot V$	I_{f10} rated value at t=0hrs
I Ripple	[A]	I_R	Ripple current @ rated parameters
		$I_t = K_f \cdot K_t \cdot I_R$	I_t ripple current at a given T
		K_f	Frequency Correlation Factor See table below
		K_t	Temperature Correlation Factor See table below
End of Life values		$\Delta C / C_{10} \leq 30\%$	
		$ESR \leq 3 \cdot ESR_{10}$	
		$I_f \leq I_{f10}$	
Surge Voltage	[V]	$V_{surge} = 1,1 \cdot V_R$	>500V
		$V_{surge} = 1,05 \cdot V_R$	

Ripple Current Coefficient

	Hz	50	100	120	200	300	400	500	>1000
Kf	V>500	0.78	1.00	1.02	1.06	1.08	1.09	1.32	1.37

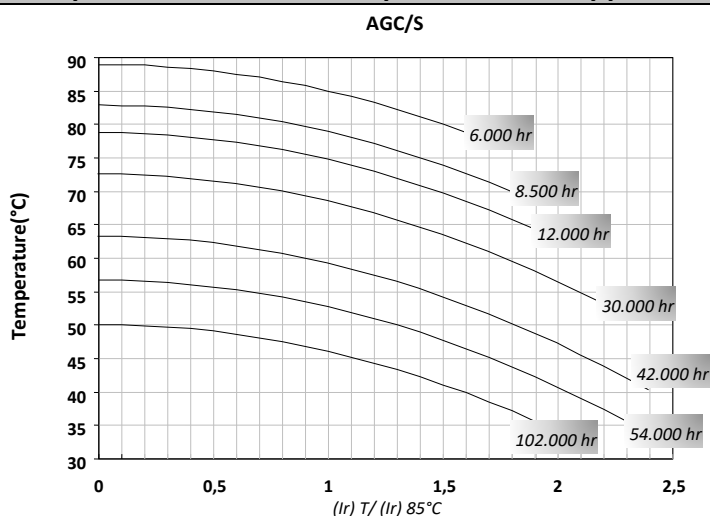
°C	40	55	65	75	85
Kt	1.80	1.65	1.45	1.25	1.00

Note: Superimposed alternating voltage summed to DC voltage must not exceed rated voltage, rated ripple current must not be exceeded and no reverse polarity is allowed

Ordering Code: Example – AGS681M550PG1

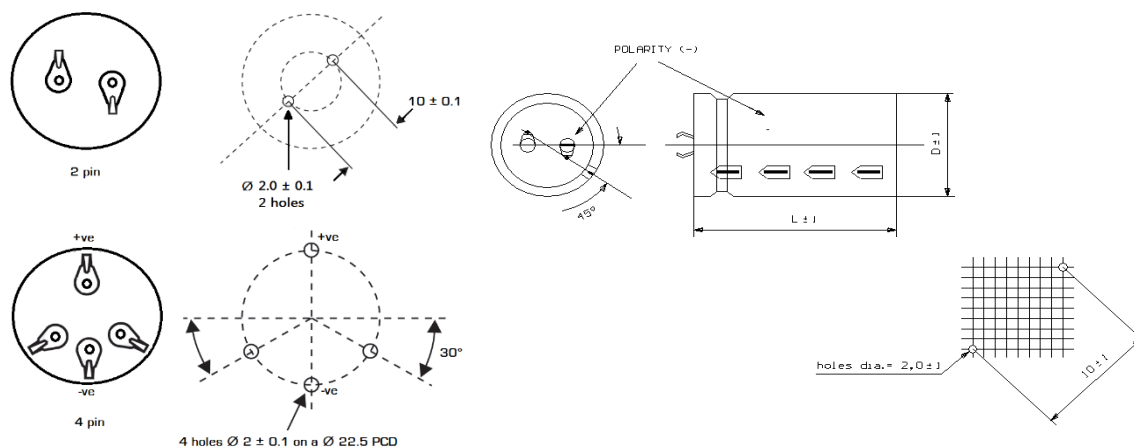
AGS	681	M	550	PG	1
Series	C with multiplying factor:	Tolerance	V_R	Size	1=sleeve 0=no sleeve
	1=x10, 2=x100, 3=x1.000,				

Expected Lifetime Vs Temperature and Ripple Current



	Capacitance	Case	Diam	Height	Tanδ	ESRmax typ		Zmax	Iripple @100Hz		Ordering Code
	[uF]@100Hz		[mm]	[mm]	[%]@100Hz	[mΩ]@100Hz		[mΩ]@10KHz	[A]@55°C	[A]@85°C	*=C, 2Pins I S, 4 Pins
550	150	MB	30	40	0,19	1066	888	800	1,8	1.10	AG*151M550MB1
	220	MC	30	50	0,19	758	633	568	2,1	1.30	AG*221M550MC1
	220	NB	35	40	0,19	767	639	575	2,1	1.30	AG*221M550NB1
	270	NC	35	50	0,19	602	499	452	2,6	1.60	AG*271M550NC1
	330	NN	35	60	0,19	492	410	369	3,2	1.95	AG*331M550NN1
	390	PC	40	50	0,19	440	367	330	3,5	2.15	AG*391M550PC1
	470	PN	40	60	0,19	365	304	273	4,0	2.45	AG*471M550PN1
	560	PN	40	60	0,19	330	275	247	4,2	2.55	AG*561M550PN1
	680	PG	40	100	0,19	233	194	175	5,9	3.60	AG*681M550PG1
	680	QE	45	60	0,19	266	221	199	5,0	3.05	AG*681M550QE1
	820	PG	40	100	0,19	210	175	157	6,4	3.85	AG*821M550PG1
	1000	QG	45	100	0,19	172	144	130	7,4	4.50	AG*102M550QG1
600	150	MB	30	40	0,15	1022	851	766	1,9	1.15	AG*151M600MB1
	220	NB	35	40	0,15	727	606	545	2,4	1.45	AG*221M600NB1
	270	NC	35	50	0,15	592	494	444	2,8	1.70	AG*271M600NC1
	330	NN	35	60	0,15	470	392	353	3,1	1.90	AG*331M600NN1
	330	PC	40	50	0,15	484	399	363	3,2	1.95	AG*331M600PC1
	390	PN	40	60	0,15	407	339	305	3,6	2.20	AG*391M600PN1
	470	PN	40	60	0,15	354	295	265	4,2	2.55	AG*471M600PN1
	560	QN	45	60	0,15	283	236	212	4,9	2.95	AG*561M600QN1
	680	PG	40	100	0,15	233	192	175	6,0	3.65	AG*681M600PG1
	820	PG	45	100	0,19	191	159	143	6,9	4.20	AG*821M600PG1



Technical Drawing

Dimension, Quantity and Weight for Box

Case		Connections			Packaging	
Code	DxL (mm)	PINS			Pcs/Box	Weight/Box (Kg)
		AGC	AGS	Lenght		
MB	30x40	2		6.3	254	4-6
MC	30x50	2		6.3	254	4-6
NB	35x40	2	4	6.3	100	6-8
NC	35x50	2	4	6.3	100	6-8
NN	35x60	2	4	6.3	100	5-7
NE	35x75	2	4	6.3	50	6-8
PB	40x40	2	4	6.3	126	9-10
PC	40x50	2	4	6.3	126	9-10
PN	40x60	2	4	6.3	63	9-10
PE	40x75		4	6.3	63	7-9
PG	40x100		4	6.3	63	9-10
PH	40x105		4	6.3	48	8-10
QC	45x50		4	6.3	96	6-8
QN	45x60		4	6.3	48	6-8
QE	45x75		4	6.3	48	7-9
QG	45x100		4	6.3	48	8-10
QH	45x105		4	6.3	48	8-10
RE	50x75		4	6.3	48	8-10
RG	50x100		4	6.3	48	8-10
RH	50x105		4	6.3	48	8-10

All dimensions in mm, torque in Nm, weight in kg



Parameters	U.M.	Symbol/Value	Notes
Expected lifetime	[hrs]	6.000	@rated voltage, temperature and ripple current
Climatic category		40/85/56	-40°C / +85°C / 85% Relative Humidity
Voltage	[V]	V_R	550 - 600V
Capacitance	[μF]	C	C_{10} rated value at t=0hrs
Capacitance tolerance	%	M = 20 %	Other capacitance on request as indicated in the data book
Series resistance	[mΩ]	ESR	ESR_{10} rated value at t=0hrs
Leakage Current	[mA]	$I_f = 0,004 \cdot C \cdot V$	I_{f10} rated value at t=0hrs
I Ripple	[A]	I_R	Ripple current @ rated parameters
		$I_t = K_f \cdot K_t \cdot I_R$	I_t ripple current at a given T
		K_f	Frequency Correlation Factor See table below
		K_t	Temperature Correlation Factor See table below
End of Life values		$\Delta C/C_{10} \leq 30\%$	
		$ESR \leq 3 \cdot ESR_{10}$	
		$I_f \leq I_{f10}$	
Surge Voltage	[V]	$V_{surge} = 1,1 \cdot V_R$	>=500V
		$V_{surge} = 1,05 \cdot V_R$	

Ripple Current Coefficient

Hz	50	100	120	200	300	400	500	1000
Kf	0.78	1.00	1.02	1.06	1.08	1.09	1.32	1.37

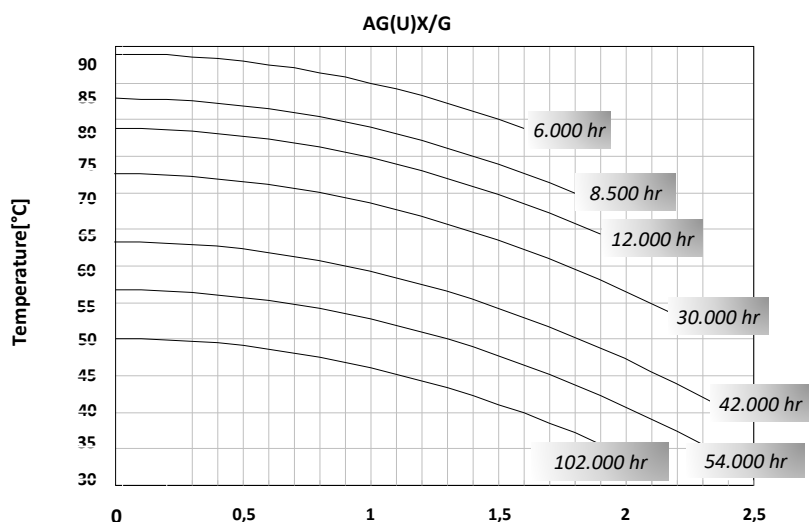
°C	40	55	65	75	85
Kt	1.80	1.65	1.45	1.25	1.00

Note: Superimposed alternating voltage summed to DC voltage must not exceed rated voltage, rated ripple current must not be exceeded and no reverse polarity is allowed

Ordering Code: Example – AGUX472M550DF1

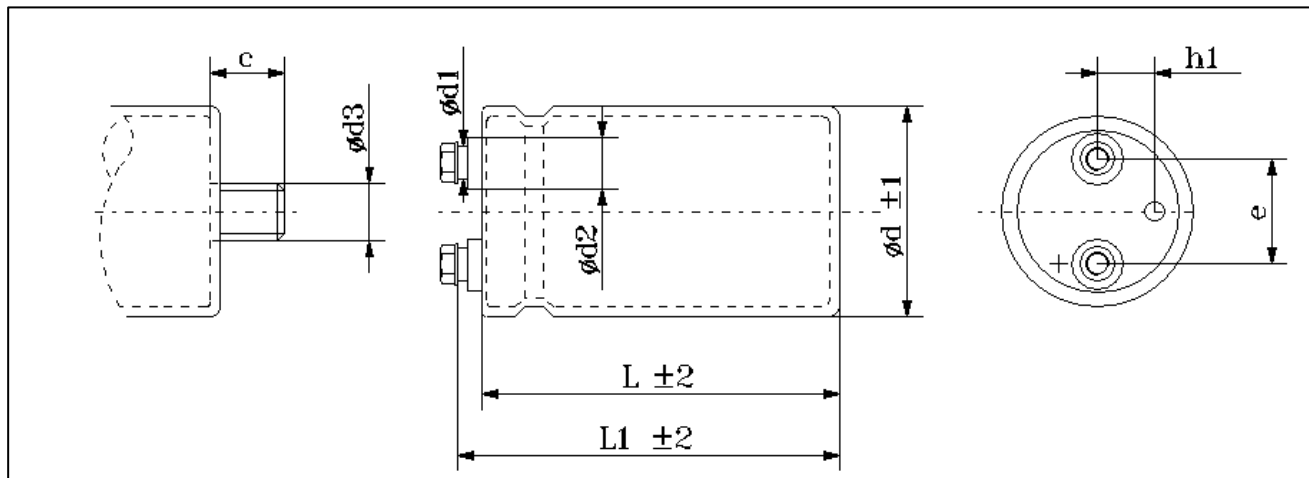
AG	(U)	X	472	M	550	DF	1
Series	U=mounting stud	Terminals	C with multiplying factor:	Tolerance	V_R	Size	1=sleeve 0=no sleeve
	Void=flat bottom		1=x10, 2=x100, 3=x1.000,				

Expected Lifetime Vs Temperature and Ripple Current



	Capacitance	Case	Diam	Height	Tanδ	ESRmax typ		Zmax	Iripple @100Hz		Ordering Code
	[uF]@100Hz		[mm]	[mm]	[%]@100Hz	[mΩ]@100Hz	[mΩ]@10KHz	[mΩ]@10KHz	[A]@55°C	[A]@85°C	(U) for mounting stud
550	1000	BB	51	83	0,18	201	167	150	6,9	4.2	AG(U)X102M550BB1
	1500	BC	51	105	0,18	141	118	106	9,2	5.6	AG(U)X152M550BC1
	2200	CC	63	105	0,18	98	79	73	12,4	7.5	AG(U)X222M550CC1
	3300	DC	76	105	0,18	68	56	51	17,3	10.5	AG(U)X332M550DC1
	4700	DF	76	145	0,18	32	27	24	27,2	16.5	AG(U)X472M550DF1
	5600	EF	90	145	0,18	26	21	20	33,5	20.3	AG(U)G562M550EF1
	6800	EF	90	145	0,18	23	18	17	36,5	22.1	AG(U)G682M550EF1
	6800	DJ	76	222	0,18	23	18	17	38,6	23.4	AG(U)X682M550DJ1
	8200	EJ	90	222	0,18	18	15	14	48,2	29.2	AG(U)G822M550EJ1
	10000	EJ	90	222	0,18	15	13	11	52,8	32.0	AG(U)G103M550EJ1
	12000	EL	90	240	0,18	14	11	10	58,1	35.2	AG(U)G123M550EL1
600	820	BB	51	83	0,15	212	177	159	6,8	4.10	AG(U)X821M600BB1
	1000	BC	51	105	0,15	165	137	124	8,4	5.07	AG(U)X102M600BC1
	1200	BC	51	105	0,15	144	120	108	9,0	5.43	AG(U)X122M600BC1
	1500	CC	63	105	0,15	126	105	95	10,9	6.59	AG(U)X152M600CC1
	2200	CC	63	105	0,15	94	78	71	12,6	7.63	AG(U)X222M600CC1
	3300	DC	76	105	0,15	60	49	44	20,1	12.2	AG(U)X332M600DC1
	3900	DF	76	145	0,15	35	29	27	25,9	15.7	AG(U)X392M600DF1
	4700	DF	76	145	0,15	31	26	23	27,7	16.8	AG(U)X472M600DF1
	5600	EF	90	145	0,15	25	21	19	35,5	21.5	AG(U)G562M600EF1
	6800	DJ	76	222	0,15	21	17	16	39,9	24.2	AG(U)X682M600DJ1
	8200	EJ	90	222	0,15	17	14	13	49,7	30.1	AG(U)G822M600EJ1
	10000	EL	90	240	0,15	14	12	10	56,4	34.2	AG(U)G103M600EL1



Technical Drawing

Dimension, Quantity and Weight for Box

Case				Connections							Mounting Stud			Packaging	
Code	DxL (mm)	L1	h1	d1	d2	e	Terminal	Screw			Screw			Pcs Box	Weight Box (Kg).
							Code	Thread	Torque (Nm)	Length	d3	c	Torque (Nm)		
BB	51x83	89	13	13	18	22.2	X	M5	2,0	10	M12	16	10	30	5-7
BC	51x105	111	13	13	18	22.2	X	M5	2,0	10	M12	16	10	30	6-9
CC	63x105	111	16	13	18	28.6	X	M5	2,0	10	M12	16	10	20	6-8
CF	63x145	151	19	13	18	28.6	X	M5	2,0	10	M12	16	10	20	9-10
DC	76x105	111	19	13	18	31.8	X	M5	2,0	10	M12	16	10	12	6-8
DF	76x145	151	19	13	18	31.8	X	M5	2,0	10	M12	16	10	12	8-14
				18	23		G	M6	2,5						
DK	76x165	173	19	13	18	31.8	X	M5	2,0	10	M12	16	10	12	9-14
				18	23		G	M6	2,5						
DG	76x200	207	19	13	18	31.8	X	M5	2,0	10	M12	16	10	12	9-13
				18	23		G	M6	2,5						
DJ	76x222	227	19	13	18	31.8	X	M5	2,0	10	M12	16	10	8	9-12
				18	23		G	M6	2,5						
DL	76x240	245	19	13	18	31.8	X	M5	2,0	10	M12	16	10	12	9-13
				18	23		G	M6	2,5						
EC	90x105	111	19	18	23	31,8	G	M6	2,5	10	M12	16	10	6	7-9
EF	90x145	151	19	18	23	31,8	G	M6	2,5	10	M12	16	10	6	9-11
EG	90x200	207	19	18	23	31,8	G	M6	2,5	10	M12	16	10	6	9-11
EJ	90x222	227	19	18	23	31,8	G	M6	2,5	10	M12	16	10	6	8-12
EL	90x240	245	19	18	23	31,8	G	M6	2,5	10	M12	16	10	6	9-13

All dimensions in mm, torque in Nm, weight in kg



Parameters	U.M.	Symbol/Value	Notes
Expected lifetime	[hrs]	6.000	@rated voltage, temperature and ripple current
Climatic category		40/85/56	-40°C / +85°C / 85% Relative Humidity
Voltage	[V]	V_R	550 - 600V
Capacitance	[μF]	C	C_{10} rated value at t=0hrs
Capacitance tolerance	%	M = 20 %	Other capacitance on request as indicated in the data book
Series resistance	[mΩ]	ESR	ESR_{10} rated value at t=0hrs
Leakage Current	[mA]	$I_f = 0,004 \cdot C \cdot V$	I_{f10} rated value at t=0hrs
I Ripple	[A]	I_R	Ripple current @ rated parameters
		$I_t = K_f \cdot K_t \cdot I_R$	I_t ripple current at a given T
		K_f	Frequency Correlation Factor See table below
		K_t	Temperature Correlation Factor See table below
End of Life values		$\Delta C / C_{10} \leq 30\%$	
		$ESR \leq 3 \cdot ESR_{10}$	
		$I_f \leq I_{f10}$	
Surge Voltage	[V]	$V_{surge} = 1,1 \cdot V_R$	>500V
		$V_{surge} = 1,05 \cdot V_R$	

Ripple Current Coefficient

	Hz	50	100	120	200	300	400	500	>1000
Kf	V>500	0.78	1.00	1.02	1.06	1.08	1.09	1.32	1.37

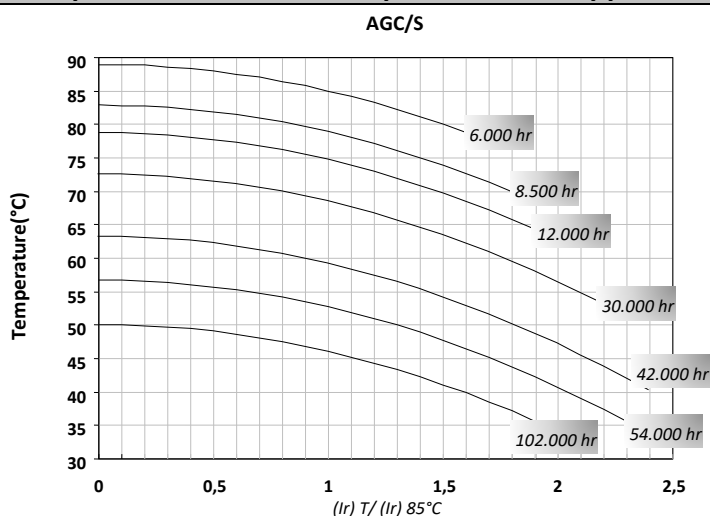
°C	40	55	65	75	85
Kt	1.80	1.65	1.45	1.25	1.00

Note: Superimposed alternating voltage summed to DC voltage must not exceed rated voltage, rated ripple current must not be exceeded and no reverse polarity is allowed

Ordering Code: Example – AGS681M550PG1

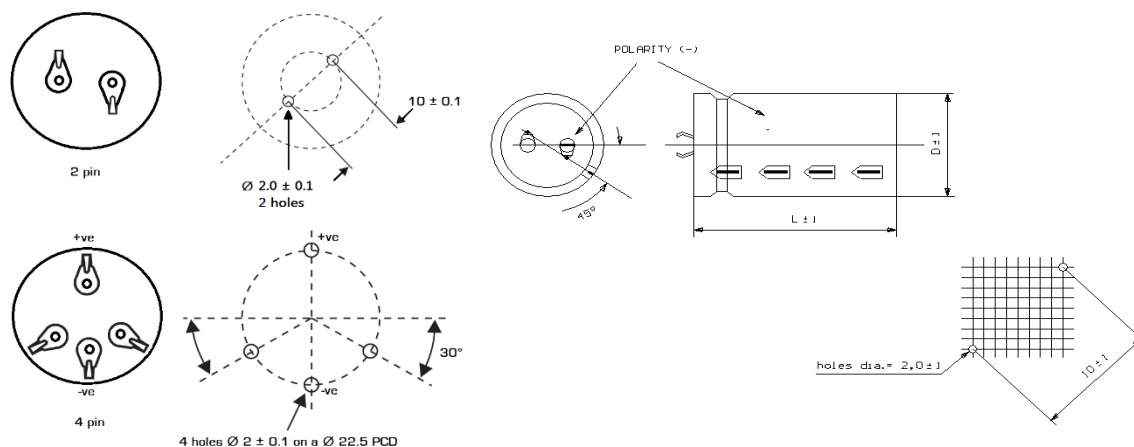
AGS	681	M	550	PG	1
Series	C with multiplying factor:	Tolerance	V_R	Size	1=sleeve 0=no sleeve
	1=x10, 2=x100, 3=x1.000,				

Expected Lifetime Vs Temperature and Ripple Current



	Capacitance	Case	Diam	Height	Tanδ	ESRmax typ		Zmax	Iripple @100Hz		Ordering Code
	[uF]@100Hz		[mm]	[mm]	[%]@100Hz	[mΩ]@100Hz		[mΩ]@10KHz	[A]@55°C	[A]@85°C	*=C, 2Pins I S, 4 Pins
550	150	MB	30	40	0,19	1066	888	800	1,8	1.10	AG*151M550MB1
	220	MC	30	50	0,19	758	633	568	2,1	1.30	AG*221M550MC1
	220	NB	35	40	0,19	767	639	575	2,1	1.30	AG*221M550NB1
	270	NC	35	50	0,19	602	499	452	2,6	1.60	AG*271M550NC1
	330	NN	35	60	0,19	492	410	369	3,2	1.95	AG*331M550NN1
	390	PC	40	50	0,19	440	367	330	3,5	2.15	AG*391M550PC1
	470	PN	40	60	0,19	365	304	273	4,0	2.45	AG*471M550PN1
	560	PN	40	60	0,19	330	275	247	4,2	2.55	AG*561M550PN1
	680	PG	40	100	0,19	233	194	175	5,9	3.60	AG*681M550PG1
	680	QE	45	60	0,19	266	221	199	5,0	3.05	AG*681M550QE1
	820	PG	40	100	0,19	210	175	157	6,4	3.85	AG*821M550PG1
	1000	QG	45	100	0,19	172	144	130	7,4	4.50	AG*102M550QG1
600	150	MB	30	40	0,15	1022	851	766	1,9	1.15	AG*151M600MB1
	220	NB	35	40	0,15	727	606	545	2,4	1.45	AG*221M600NB1
	270	NC	35	50	0,15	592	494	444	2,8	1.70	AG*271M600NC1
	330	NN	35	60	0,15	470	392	353	3,1	1.90	AG*331M600NN1
	330	PC	40	50	0,15	484	399	363	3,2	1.95	AG*331M600PC1
	390	PN	40	60	0,15	407	339	305	3,6	2.20	AG*391M600PN1
	470	PN	40	60	0,15	354	295	265	4,2	2.55	AG*471M600PN1
	560	QN	45	60	0,15	283	236	212	4,9	2.95	AG*561M600QN1
	680	PG	40	100	0,15	233	192	175	6,0	3.65	AG*681M600PG1
	820	PG	45	100	0,19	191	159	143	6,9	4.20	AG*821M600PG1



Technical Drawing

Dimension, Quantity and Weight for Box

Case		Connections			Packaging	
Code	DxL (mm)	PINS			Pcs/Box	Weight/Box (Kg)
		AGC	AGS	Lenght		
MB	30x40	2		6.3	254	4-6
MC	30x50	2		6.3	254	4-6
NB	35x40	2	4	6.3	100	6-8
NC	35x50	2	4	6.3	100	6-8
NN	35x60	2	4	6.3	100	5-7
NE	35x75	2	4	6.3	50	6-8
PB	40x40	2	4	6.3	126	9-10
PC	40x50	2	4	6.3	126	9-10
PN	40x60	2	4	6.3	63	9-10
PE	40x75		4	6.3	63	7-9
PG	40x100		4	6.3	63	9-10
PH	40x105		4	6.3	48	8-10
QC	45x50		4	6.3	96	6-8
QN	45x60		4	6.3	48	6-8
QE	45x75		4	6.3	48	7-9
QG	45x100		4	6.3	48	8-10
QH	45x105		4	6.3	48	8-10
RE	50x75		4	6.3	48	8-10
RG	50x100		4	6.3	48	8-10
RH	50x105		4	6.3	48	8-10

All dimensions in mm, torque in Nm, weight in kg



Parameters	U.M.	Symbol/Value	Notes
Expected lifetime	[hrs]	15.000	@rated voltage, temperature and ripple current
Climatic category		40/85/56	-40°C / +85°C / 85% Relative Humidity
Voltage	[V]	V_R	350 - 500V
Capacitance	[μF]	C	C_{10} rated value at t=0hrs
Capacitance tolerance	%	M = 20 %	Other capacitance on request as indicated in the data book
Series resistance	[mΩ]	ESR	ESR_{10} rated value at t=0hrs
Leakage Current	[mA]	$I_f = 0,004 \cdot C \cdot V$	I_{f10} rated value at t=0hrs
I Ripple	[A]	I_R	Ripple current @ rated parameters
		$I_t = K_f \cdot K_t \cdot I_R$	I_t ripple current at a given T
		K_f	Frequency Correlation Factor See table below
		K_t	Temperature Correlation Factor See table below
End of Life values		$\Delta C/C_{10} \leq 30\%$	
		$ESR \leq 3 \cdot ESR_{10}$	
		$I_f \leq I_{f10}$	
Surge Voltage	[V]	$V_{surge} = 1,1 \cdot V_R$	≤450V
		$V_{surge} = 1,05 \cdot V_R$	=500V

Ripple Current Coefficient

	D= Diameter	Hz	50	100	120	200	300	400	500	1000
Kf	D<63	V≤300	0.79	1.00	1.04	1.12	1.16	1.20	1.22	1.25
		V>300	0.76	1.00	1.04	1.17	1.28	1.35	1.39	1.45
	D≥63	V≤300	0.78	1.00	1.02	1.06	1.08	1.09	1.09	1.09
		V>300	0.72	1.00	1.03	1.14	1.24	1.29	1.32	1.37

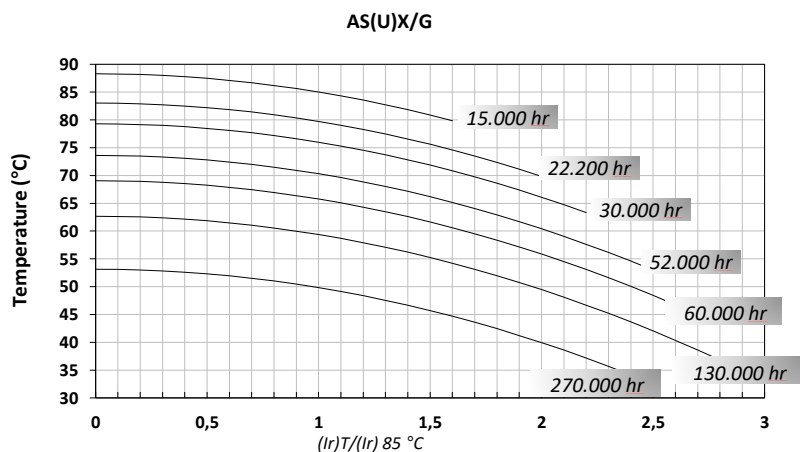
°C	40	55	65	75	85
Kt	2.10	1.80	1.60	1.30	1.00

Note: Superimposed alternating voltage summed to DC voltage must not exceed rated voltage, rated ripple current must not be exceeded and no reverse polarity is allowed

Ordering Code: Example – ASUX472M450DF1

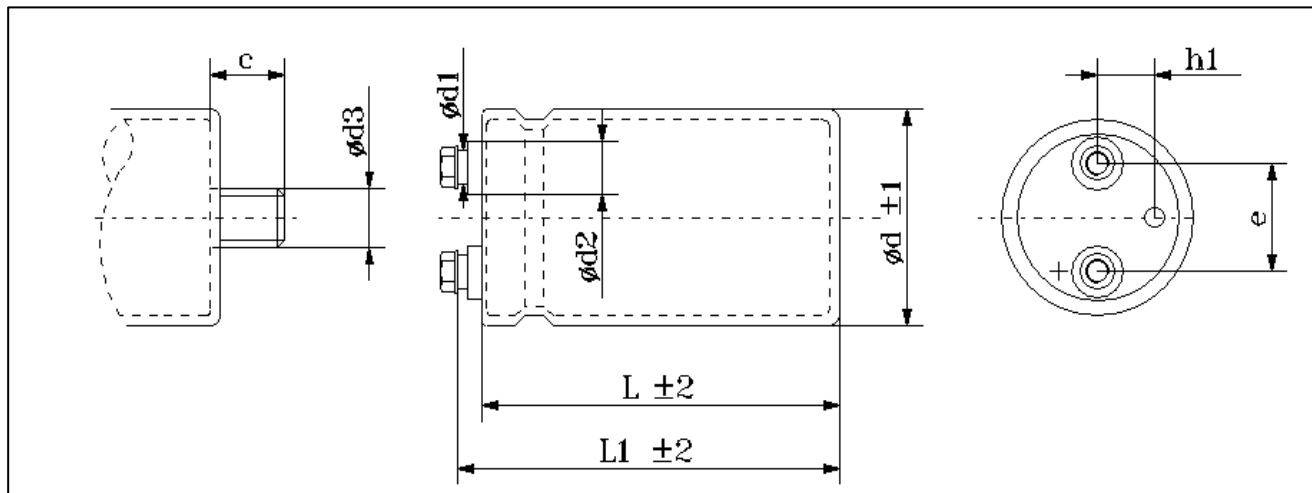
AS	(U)	X	472	M	450	DF	1
Series	U=mounting stud	Terminals	C with multiplying factor:	Tolerance	V_R	Size	1=sleeve 0=no sleeve
	Void=flat bottom		1=x10, 2=x100, 3=x1.000,				

Expected Lifetime Vs Temperature and Ripple Current



	Capacitance	Case	Diam	Height	Tanδ	ESRmax typ		Zmax	Iripple @100Hz		Ordering Code	
	[uF]@100Hz		[mm]	[mm]	[%]@100Hz	[mΩ]@100Hz	[mΩ]@10KHz		[A]@55°C	[A]@85°C	(U) for mounting stud	
350	680	BC	51	105	0,07	164	131	124	8,0	4,4	AS(U)M681M350BC1	
	1000	BC	51	105	0,07	108	87	85	10,0	5,4	AS(U)M102M350BC1	
	1500	CC	63	105	0,08	81	65	66	13,0	7,0	AS(U)M152M350CC1	
	2200	DC	76	105	0,09	62	50	51	16,0	8,9	AS(U)M222M350DC1	
	3300	DF	76	145	0,09	41	33	35	22,0	12,5	AS(U)M332M350DF1	
	4700	DF	76	145	0,07	24	19	24	27,0	14,9	AS(U)M472M350DF1	
	6800	DJ	76	222	0,10	23	19	20	39,0	21,7	AS(U)M682M350DJ1	
400	680	BC	51	105	0,10	234	187	151	7,0	4,0	AS(U)M681M400BC1	
	1000	CC	63	105	0,10	159	127	105	10,0	5,4	AS(U)M102M400CC1	
	1500	DC	76	105	0,10	106	85	72	13,0	7,4	AS(U)M152M400DC1	
	2200	DC	76	105	0,11	80	64	51	15,0	8,5	AS(U)M222M400DC1	
	2200	DF	76	145	0,10	72	58	51	18,0	10,2	AS(U)M222M400DF1	
	3300	DF	76	145	0,12	58	46	35	21,0	11,4	AS(U)M332M400DF1	
	4700	DF	76	145	0,12	41	33	35	24,8	13,5	AS(U)M472M400DF1	
450	6800	DJ	76	222	0,12	28	22	26	30,0	16,4	AS(U)M682M400DJ1	
	1500	CC	63	105	0,10	106	80	60	9,5	6,8	AS(U)M152M450CC1	
	2200	CC	63	105	0,12	87	65	49	10,5	7,5	AS(U)M222M450CC1	
	3300	DC	76	105	0,12	58	43	36	14,3	10,2	AS(U)M332M450DC1	
		DF	76	145	0,10	48	36	28	17,9	12,8	AS(U)M332M450DF1	
	4700	DF	76	145	0,12	41	30	24	19,5	13,9	AS(U)M472M450DF1	
		EC	90	105	0,12	41	30	25	21,8	15,6	AS(U)G472M450EC1	
	5600	DF	76	145	0,12	34	27	29	30,0	16,4	AS(U)M562M450DF1	
		DJ	76	222	0,13	37	30	28	31,0	17,2	AS(U)M562M450DJ1	
	6800	DJ	76	222	0,12	28	21	17	28,3	20,2	AS(U)M682M450DJ1	
EF		90	145	0,12	28	21	17	26,2	18,7	AS(U)G682M450EF1		
500	470	DJ	76	222	0,12	19	14	20	32,5	22,8	AS(U)M103M450DJ1	
		EJ	90	222	0,12	19	14	12	37,7	26,9	AS(U)G103M450EJ1	
	470	BB	51	83	0,10	339	271	254	5,2	2,9	AS(U)M471M500BB1	
		BC	51	105	0,10	339	271	254	5,8	3,2	AS(U)M471M500BC1	
		1000	BC	51	105	0,10	159	127	98	8,0	4,2	AS(U)M102M500BC1
		1500	DC	76	105	0,10	106	85	74	11,0	6,0	AS(U)M152M500DC1
		2200	DC	76	105	0,10	72	58	54	13,4	7,6	AS(U)M222M500DC1
			DF	76	145	0,10	72	58	47	15,0	8,3	AS(U)M222M500DF1
		3300	DF	76	145	0,10	48	39	27	16,0	9,1	AS(U)M332M500DF1
		3900	DF	76	145	0,10	41	32	22	18,3	11,2	AS(U)M392M500DF1
4400		DF	76	145	0,10	35	28	2	23,7	13,5	AS(U)M442M500DF1	
4700		DF	76	145	0,08	27	22	18	27,0	15,4	AS(U)M472M500DF1	
		EF	90	145	0,08	27	22	18	30,1	17,2	AS(U)G472M500EF1	
5600		EF	90	145	0,12	34	27	26	34,1	18,9	AS(U)G562M500EF1	
6800	EF	90	145	0,12	28	22	21	37,5	20,8	AS(U)G682M500EF1		
10000	EJ	90	222	0,12	19	15	14	54,4	30,2	AS(U)G103M500EJ1		



Technical Drawing

Dimension, Quantity and Weight for Box

Case				Connections							Mounting Stud			Packaging	
Code	DxL (mm)	L1	h1	d1	d2	e	Terminal	Screw			Screw			Pcs Box	Weight Box (Kg).
							Code	Thread	Torque (Nm)	Length	d3	c	Torque (Nm)		
BB	51x83	89	13	13	18	22.2	M	M5	2,0	10	M12	16	10	30	5-7
BC	51x105	111	13	13	18	22.2	M	M5	2,0	10	M12	16	10	30	6-9
CC	63x105	111	16	13	18	28.6	M	M5	2,0	10	M12	16	10	20	6-8
CF	63x145	151	19	13	18	28.6	M	M5	2,0	10	M12	16	10	20	9-10
DC	76x105	111	19	13	18	31.8	M	M5	2,0	10	M12	16	10	12	6-8
DF	76x145	151	19	13	18	31.8	M	M5	2,0	10	M12	16	10	12	8-14
				18	23		G	M6	2,5						
DK	76x165	173	19	13	18	31.8	M	M5	2,0	10	M12	16	10	12	9-14
				18	23		G	M6	2,5						
DG	76x200	207	19	13	18	31.8	M	M5	2,0	10	M12	16	10	12	9-13
				18	23		G	M6	2,5						
DJ	76x222	227	19	13	18	31.8	M	M5	2,0	10	M12	16	10	8	9-12
				18	23		G	M6	2,5						
DL	76x240	245	19	13	18	31.8	M	M5	2,0	10	M12	16	10	12	9-13
				18	23		G	M6	2,5						
EC	90x105	111	19	18	23	31,8	G	M6	2,5	10	M12	16	10	6	7-9
EF	90x145	151	19	18	23	31,8	G	M6	2,5	10	M12	16	10	6	9-11
EG	90x200	207	19	18	23	31,8	G	M6	2,5	10	M12	16	10	6	9-11
EJ	90x222	227	19	18	23	31,8	G	M6	2,5	10	M12	16	10	6	8-12
EL	90x240	245	19	18	23	31,8	G	M6	2,5	10	M12	16	10	6	9-13

All dimensions in mm, torque in Nm, weight in kg



Parameters	U.M.	Symbol/Value	Notes
Expected lifetime	[hrs]	5.000	@rated voltage, temperature and ripple current
Climatic category		40/85/56	-40°C / +85°C./ 85% Relative Humidity
Voltage	[V]	V_R	40 - 450V
Capacitance	[μF]	C	C_{10} rated value at t=0hrs
Capacitance tolerance	%	M = 20 %	Other capacitance on request as indicated in the data book
Series resistance	[mΩ]	ESR	ESR_{10} rated value at t=0hrs
Leakage Current	[mA]	$I_f = 0,004 * C * V$	I_{f10} rated value at t=0hrs
I Ripple	[A]	I_R	Ripple current @ rated parameters
		$I_t = K_f * K_t * I_R$	I_t ripple current at a given T
		K_f	Frequency Correlation Factor See table below
		K_t	Temperature Correlation Factor See table below
End of Life values		$\Delta C / C_{10} \leq 30\%$	
		$ESR \leq 3 * ESR_{10}$	
		$I_f \leq I_{f10}$	
Surge Voltage	[V]	$V_{surge} = 1,1 * V_R$	≤450V
		$V_{surge} = 1,05 * V_R$	

Ripple Current Coefficient

	Hz	50	100	300	400	500	>1000
Kf	V≤300	0.90	1.00	1.14	1.18	1.20	1.25
	V>300	0.88	1.00	1.20	1.25	1.35	1.40

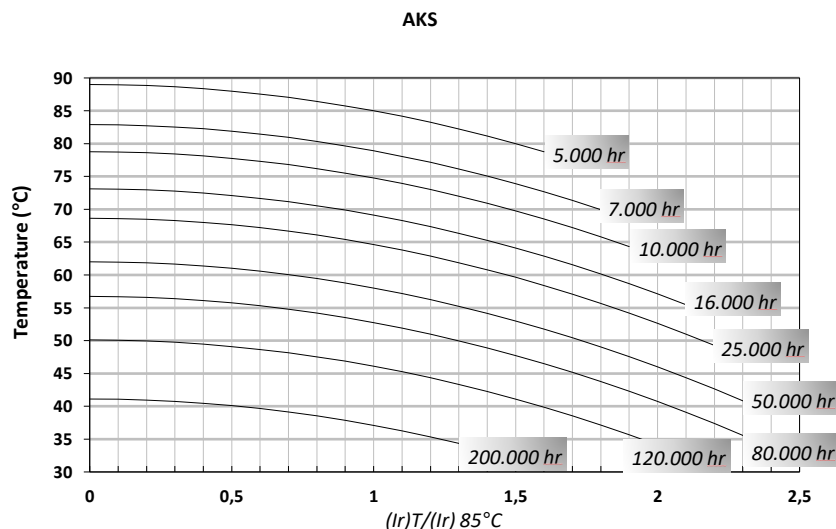
°C	40	55	65	75	85
Kt	2.30	1.90	1.70	1.40	1.00

Note: Superimposed alternating voltage summed to DC voltage must not exceed rated voltage, rated ripple current must not be exceeded and no reverse polarity is allowed

Ordering Code: Example – AKS331M450NB1

AKS	331	M	450	NB	1
Series	C with multiplying factor:	Tolerance	V_R	Size	1=sleeve 0=no sleeve
	1=x10, 2=x100, 3=x1.000,				

Expected Lifetime Vs Temperature and Ripple Current

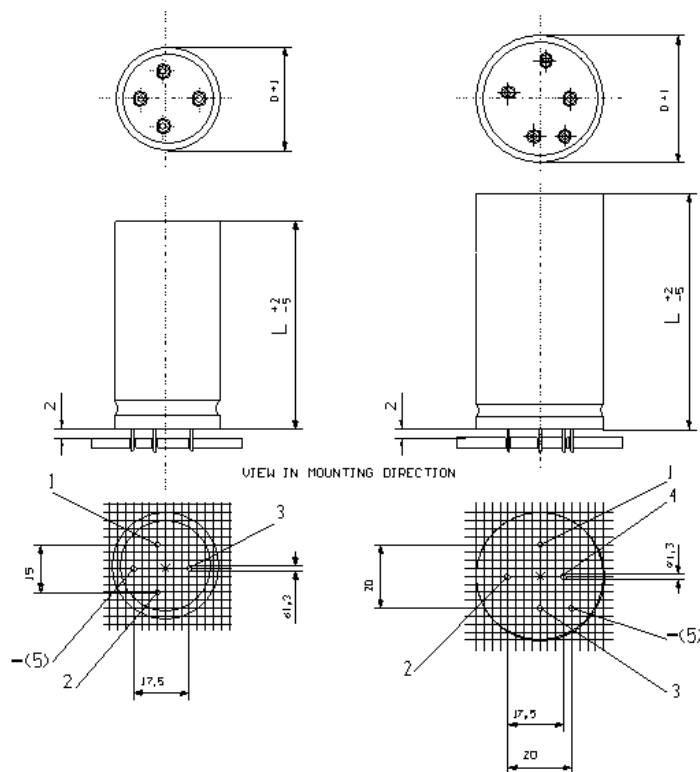


	Capacitance	Case	Diam	Height	Tan δ	ESRmax typ		Zmax	Iripple @100Hz		Ordering Code
	[μ F]@100Hz		[mm]	[mm]	[%]@100Hz	[m Ω]@100Hz	[m Ω]@10KHz		[A]@55°C	[A]@85°C	AKS
40	15000	NC	35	50	0,34	29	23	22	13,7	7,2	AKS153M040NC1
	22000	PC	40	50	0,40	23	19	17	16,5	8,7	AKS223M040PC1
	33000	PE	40	75	0,46	18	14	13	22,5	11,8	AKS333M040PE1
	47000	PG	40	100	0,55	15	12	11	27,9	14,7	AKS473M040PG1
63	10000	NC	35	50	0,26	33	26	25	12,8	6,7	AKS103M063NC1
		PC	40	50	0,24	31	24	23	14,4	7,6	AKS103M063PC1
	15000	PE	40	75	0,29	25	20	18	19,1	10,1	AKS153M063PE1
	22000	PG	40	100	0,32	19	15	14	25,0	13,2	AKS223M063PG1
100	3300	NC	35	50	0,11	42	34	32	11,3	6,0	AKS332M100NC1
	4700	PC	40	50	0,13	35	28	26	13,4	7,1	AKS472M100PC1
	6800	PE	40	75	0,13	24	19	18	19,2	10,1	AKS682M100PE1
	10000	PG	40	100	0,13	17	13	12	26,5	13,9	AKS103M100PG1
200	1500	NC	35	50	0,09	76	61	57	8,4	4,4	AKS152M200NC1
	2200	PC	40	50	0,09	52	42	39	11,0	5,8	AKS222M200PC1
	2200	PE	40	75	0,09	52	42	39	13,1	6,9	AKS222M200PE1
	3300	PG	40	100	0,09	35	28	26	18,3	9,6	AKS332M200PG1
250	1000	NC	35	50	0,09	115	92	86	6,9	3,6	AKS102M250NC1
	1500	PC	40	50	0,09	76	61	57	9,1	4,8	AKS152M250PC1
	1500	PE	40	75	0,09	76	61	57	10,8	5,7	AKS152M250PE1
	2200	PG	40	100	0,09	52	42	39	14,9	7,9	AKS222M250PG1
400	330	NB	35	40	0,10	386	309	290	3,6	1,9	AKS331M400NB1
	470	NC	35	50	0,10	271	217	203	4,7	2,5	AKS471M400NC1
	680	NN	35	60	0,10	187	150	141	6,2	3,3	AKS681M400NN1
		NE	35	75	0,10	187	150	141	6,8	3,6	AKS681M400NE1
		PC	40	50	0,10	187	150	141	6,2	3,2	AKS681M400PC1
		PN	40	60	0,10	187	150	141	6,7	3,5	AKS681M400PN1
	1000	NN	35	60	0,10	127	102	96	7,5	3,9	AKS102M400NN1
		NE	35	75	0,10	127	102	96	8,3	4,4	AKS102M400NE1
		PE	40	75	0,10	127	102	96	8,9	4,7	AKS102M400PE1
		PG	40	100	0,10	127	102	96	10,1	5,3	AKS102M400PG1
	1200	PG	40	100	0,10	106	85	80	11,1	5,8	AKS122M400PG1
	1500	PE	40	75	0,10	85	68	64	10,9	5,7	AKS152M400PE1
		QE	45	75	0,10	85	68	64	11,7	6,1	AKS152M400QE1



	Capacitance	Case	Diam	Height	Tan δ	ESRmax typ		Zmax	Iripple @100Hz		Ordering Code
	[μ F]@100Hz		[mm]	[mm]	[%]@100Hz	[m Ω]@100Hz	[m Ω]@10KHz		[A]@55°C	[A]@85°C	AKS
450	220	NB	30	40	0,12	695	556	521	2,5	1,3	AKS221M450NB1
		NC	35	50	0,12	695	556	521	3,0	1,6	AKS221M450NC1
	330	NC	35	50	0,12	463	371	347	3,6	1,9	AKS331M450NC1
	470	NC	35	50	0,12	325	260	244	4,3	2,3	AKS471M450NC1
	680	PC	40	50	0,12	225	180	169	5,6	3,0	AKS681M450PC1
		NE	35	75	0,12	225	180	169	6,2	3,3	AKS681M450NE1
		PE	40	75	0,12	225	180	169	6,7	3,5	AKS681M450PE1
	1000	NE	35	75	0,12	153	122	115	7,5	4,0	AKS102M450NE1
		PN	40	60	0,12	153	122	115	7,4	3,9	AKS102M450PN1
		PE	40	75	0,12	153	122	115	8,1	4,3	AKS102M450PE1
		PG	40	100	0,12	153	122	115	9,2	4,9	AKS102M450PG1
	1500	PG	40	100	0,12	102	82	76	11,3	6,0	AKS152M450PG1

Technical Drawing



Dimension, Quantity and Weight for Box

Case		Connections			Packaging	
Code	DxL (mm)	PINS			Code	DxL (mm)
		AKS		Lenght		
NB	35x40	4		6.3	100	6-8
NC	35x50	4		6.3	100	6-8
NN	35x60	4		6.3	100	5-7
NE	35x75	4		6.3	50	6-8
PB	40x40		5	6.3	126	9-10
PC	40x50		5	6.3	126	9-10
PN	40x60		5	6.3	63	9-10
PE	40x75		5	6.3	63	7-9
PG	40x100		5	6.3	63	9-10

All dimensions in mm, torque in Nm, weight in kg



Parameters	U.M.	Symbol/Value	Notes
Expected lifetime	[hrs]	8.000	@rated voltage, temperature and ripple current
Climatic category		40/105/56	-40°C / +105°C./ 85% Relative Humidity
Voltage	[V]	V_R	200-450
Capacitance	[μF]	C	C_{10} rated value at t=0hrs
Capacitance tolerance	%	M = 20 %	Other capacitance on request as indicated in the data book
Series resistance	[mΩ]	ESR	ESR_{10} rated value at t=0hrs
Leakage Current	[mA]	$I_f = 0,004 \cdot C \cdot V$	I_{f10} rated value at t=0hrs
I Ripple	[A]	I_R	Ripple current @ rated parameters
		$I_t = K_f \cdot K_t \cdot I_R$	I_t ripple current at a given T
		K_f	Frequency Correlation Factor See table below
		K_t	Temperature Correlation Factor See table below
End of Life values		$\Delta C/C_{10} \leq 30\%$	
		$ESR \leq 3 \cdot ESR_{10}$	
		$I_f \leq I_{f10}$	
Surge Voltage	[V]	$V_{surge} = 1,1 \cdot V_R$	≤450V
		$V_{surge} = 1,05 \cdot V_R$	

Ripple Current Coefficient

	Hz	50	100	300	400	500	>1000
Kf	V>160	0.88	1.00	1.20	1.25	1.35	1.40

°C	50	65	75	85	95	105
Kt	2.40	2.20	2.10	1.80	1.30	1.00

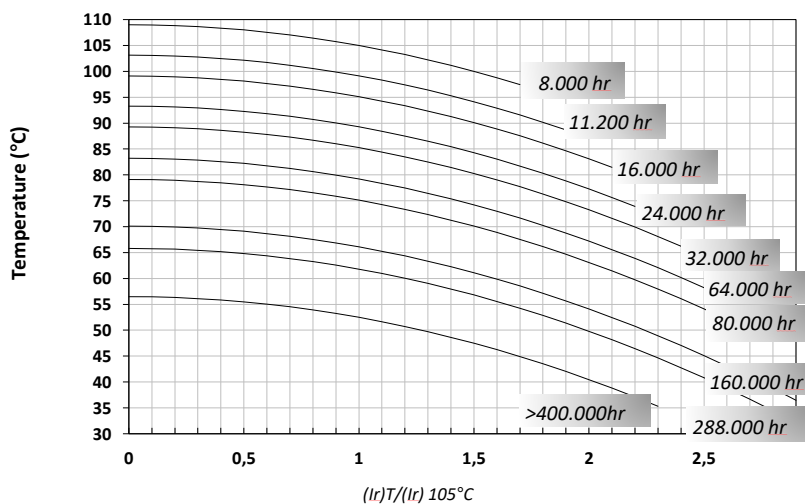
Note: Superimposed alternating voltage summed to DC voltage must not exceed rated voltage, rated ripple current must not be exceeded and no reverse polarity is allowed

Ordering Code: Example – ATC821M400PC1

ATC	821	M	400	PC	1
Series	C with multiplying factor:	Tolerance	V_R	Size	1=sleeve 0=no sleeve
	1=x10, 2=x100, 3=x1.000,				

Expected Lifetime Vs Temperature and Ripple Current

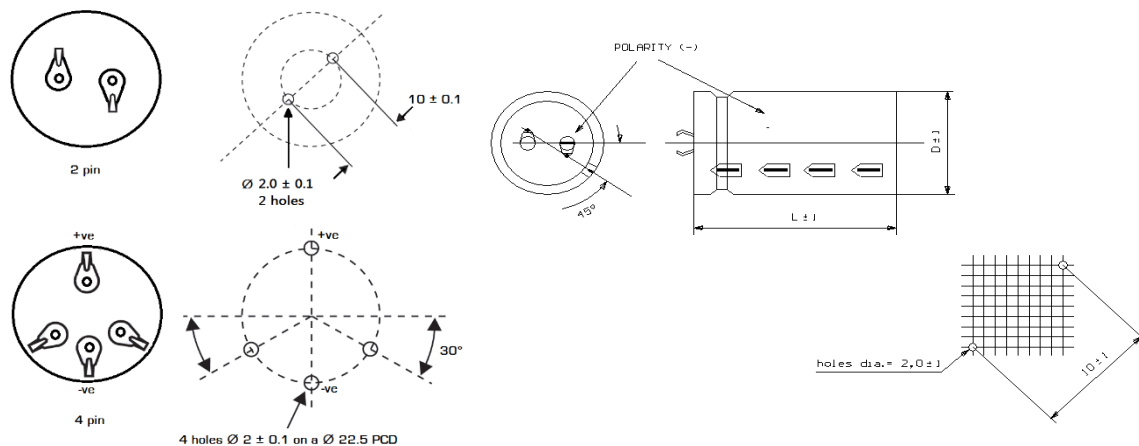
ATC/S



	Capacitance	Case	Diam	Height	Tanδ	ESRmax typ		Zmax	Iripple @100Hz		Ordering Code
	[μF]@100Hz		[mm]	[mm]	[%]@100Hz	[mΩ]@100Hz	[mΩ]@10KHz	[mΩ]@10KHz	[A]@85°C	[A]@105°C	*= C, 2 Pins S, 4 Pins
200	220	MB	30	40	0,08	463	371	347	2,2	1,2	AT*221M200MB1
	330	NB	35	40	0,08	309	247	232	3,0	1,7	AT*331M200NB1
	470	NC	35	50	0,08	217	173	163	3,9	2,2	AT*471M200NC1
	680	MC	30	50	0,08	150	120	112	4,3	2,4	AT*681M200MC1
		PC	40	50	0,08	150	120	112	5,1	2,8	AT*681M200PC1
	1000	NC	35	50	0,08	102	82	76	5,7	3,2	AT*102M200NC1
		PE	40	75	0,08	102	82	76	7,3	4,1	AT*102M200PE1
	1500	PC	40	50	0,08	68	54	51	7,5	4,2	AT*152M200PC1
		PG	40	100	0,08	68	54	51	10,2	5,7	AT*152M200PG1
	1800	PE	40	75	0,08	57	45	42	9,8	5,4	AT*182M200PE1
		QC	45	50	0,08	57	45	42	8,8	4,9	AT*182M200QC1
	2200	PG	40	100	0,08	46	37	35	12,3	6,9	AT*222M200PG1
		QE	45	75	0,08	46	37	35	11,6	6,4	AT*222M200QE1
	3300	QG	45	100	0,08	31	25	23	16,1	8,9	AT*332M200QG1
250	220	MB	30	40	0,08	463	371	347	2,2	1,2	AT*221M250MB1
		NB	35	40	0,08	463	371	347	2,4	1,3	AT*221M250NB1
	330	NC	35	50	0,08	309	247	232	3,3	1,8	AT*331M250NC1
	470	MC	30	50	0,08	217	173	163	3,6	2,0	AT*471M250MC1
	680	NC	35	50	0,08	150	120	112	4,7	2,6	AT*681M250NC1
	1000	NC	35	50	0,08	102	82	76	5,7	3,2	AT*102M250NC1
	1200	PC	40	50	0,08	85	68	64	6,7	3,7	AT*122M250PC1
		PE	40	75	0,08	68	54	51	8,9	5,0	AT*152M250PE1
	1500	QC	45	50	0,08	68	54	51	8,1	4,5	AT*152M250QC1
		PG	40	100	0,08	46	37	35	12,3	6,9	AT*222M250PG1
	2200	QE	45	75	0,08	46	37	35	11,6	6,4	AT*222M250QE1
		QG	45	100	0,08	38	30	28	14,6	8,1	AT*272M250QG1
400	220	MB	30	40	0,08	463	297	347	3,1	1,7	AT*221M400MB1
	330	MC	30	50	0,08	309	198	232	4,2	2,3	AT*331M400MC1
		NC	35	50	0,08	309	198	232	4,6	2,5	AT*331M400NC1
	470	NC	35	50	0,08	217	139	163	5,4	3,0	AT*471M400NC1
	680	NN	35	60	0,08	150	96	112	7,1	3,9	AT*681M400NN1
		NE	35	75	0,08	150	96	112	7,8	4,3	AT*681M400NE1
		PC	40	50	0,08	150	120	112	5,1	2,8	AT*681M400PC1
	820	PC	40	50	0,08	124	80	93	7,8	4,3	AT*821M400PC1
	1000	PN	40	60	0,08	102	65	76	9,3	5,1	AT*102M400PN1
		PE	40	75	0,08	102	65	76	10,2	5,7	AT*102M400PE1
		PG	40	100	0,08	102	65	76	11,6	6,5	AT*102M400PG1
		QC	45	50	0,08	102	65	76	9,2	5,1	AT*102M400QC1
	1200	PE	40	75	0,08	85	54	64	11,2	6,2	AT*122M400PE1
		QN	45	60	0,08	85	54	64	10,9	6,0	AT*122M400QN1

	Capacitance	Case	Diam	Height	Tanδ	ESRmax typ		Zmax	Iripple @100Hz		Ordering Code
	[μF]@100Hz		[mm]	[mm]	[%]@100Hz	[mΩ]@100Hz	[mΩ]@100Hz	[mΩ]@10KHz	[A]@85°C	[A]@105°C	*= C, 2 Pins S, 4 Pins
400	1500	PG	40	100	0,08	68	44	51	14,2	7,9	AT*152M400PG1
	1500	QE	45	75	0,08	68	44	51	13,4	7,4	AT*152M400QE1
	1800	QG	45	100	0,08	57	36	42	16,6	9,2	AT*182M400QG1
450	220	MB	30	40	0,09	521	297	391	3,1	1,7	AT*221M450MB1
	330	MC	30	50	0,09	347	198	261	4,2	2,3	AT*331M450MC1
		NB	35	40	0,09	347	198	261	4,2	2,3	AT*331M450NB1
	470	NC	35	50	0,09	244	139	183	5,4	3,0	AT*471M450NC1
		PB	40	40	0,09	244	139	183	5,4	3,0	AT*471M450PB1
	560	PC	40	50	0,09	205	117	154	6,4	3,6	AT*561M450PC1
	680	NE	35	75	0,09	169	96	126	7,8	4,3	AT*681M450NE1
	820	PE	40	75	0,09	140	80	105	9,2	5,1	AT*821M450PE1
		QC	45	50	0,09	140	80	105	8,3	4,6	AT*821M450QC1
	1000	PG	40	100	0,09	115	65	86	11,6	6,5	AT*102M450PG1
		QE	45	75	0,09	115	65	86	10,9	6,1	AT*102M450QE1
	1200	PG	40	100	0,09	96	54	72	12,7	7,1	AT*122M450PG1
	1500	QG	45	100	0,09	76	44	57	15,2	8,4	AT*152M450QG1

Technical Drawing



Dimension, Quantity and Weight for Box

Case		Connections			Packaging	
Code	DxL (mm)	PINS			Pcs/Box	Weight/Box (Kg)
		ATC	ATS	Lenght		
MB	30x40	2		6.3	254	4-6
MC	30x50	2		6.3	254	4-6
NB	35x40	2	4	6.3	100	6-8
NC	35x50	2	4	6.3	100	6-8
NN	35x60	2	4	6.3	100	5-7
NE	35x75	2	4	6.3	50	6-8
PB	40x40	2	4	6.3	126	9-10
PC	40x50	2	4	6.3	126	9-10
PN	40x60	2	4	6.3	63	9-10
PE	40x75		4	6.3	63	7-9
PG	40x100		4	6.3	63	9-10
PH	40x105		4	6.3	48	8-10
QC	45x50		4	6.3	96	6-8
QN	45x60		4	6.3	48	6-8
QE	45x75		4	6.3	48	7-9
QG	45x100		4	6.3	48	8-10
QH	45x105		4	6.3	48	8-10
RE	50x75		4	6.3	48	8-10
RG	50x100		4	6.3	48	8-10
RH	50x105		4	6.3	48	8-10

All dimensions in mm, torque in Nm, weight in kg



Parameters	U.M.	Symbol/Value	Notes
Expected lifetime	[hrs]	8.000	@rated voltage, temperature and ripple current
Climatic category		55/105/56	-55°C / +105°C / 85% Relative Humidity
Voltage	[V]	V_R	350 - 450
Capacitance	[μF]	C	C_{10} rated value at t=0hrs
Capacitance tolerance	%	M = 20 %	Other capacitance on request as indicated in the data book
Series resistance	[mΩ]	ESR	ESR_{10} rated value at t=0hrs
Leakage Current	[mA]	$I_f = 0,004 \cdot C \cdot V$	I_{f10} rated value at t=0hrs
I Ripple	[A]	I_R	Ripple current @ rated parameters
		$I_t = K_f \cdot K_t \cdot I_R$	I_t ripple current at a given T
		K_f	Frequency Correlation Factor See table below
		K_t	Temperature Correlation Factor See table below
End of Life values		$\Delta C/C_{10} \leq 30\%$	
		$ESR \leq 3 \cdot ESR_{10}$	
		$I_f \leq I_{f10}$	
Surge Voltage	[V]	$V_{surge} = 1,1 \cdot V_R$	≤450V
		$V_{surge} = 1,05 \cdot V_R$	

Ripple Current Coefficient

Hz	50	100	120	200	300	400	500	1000
Kf	0.78	1.00	1.02	1.06	1.08	1.09	1.32	1.37

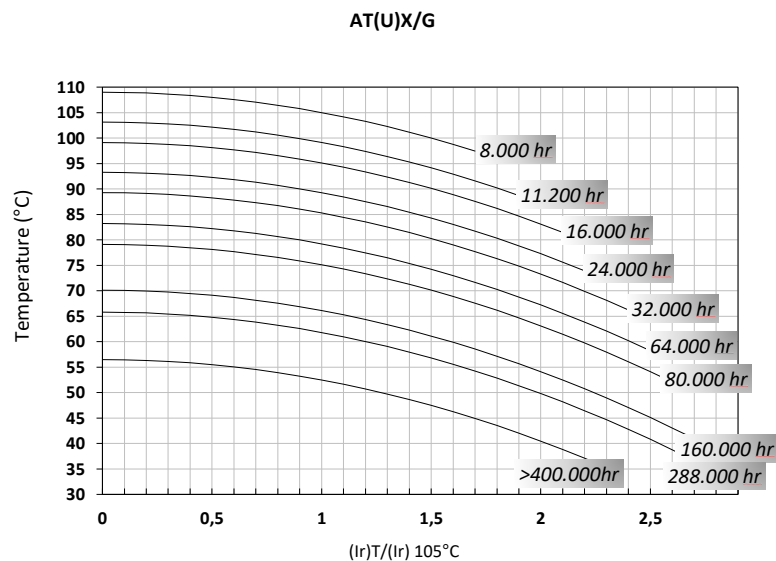
°C	40	55	65	75	85	95	105
Kt	2.50	2.40	2.20	2.00	1.80	1.30	1.00

Note: Superimposed alternating voltage summed to DC voltage must not exceed rated voltage, rated ripple current must not be exceeded and no reverse polarity is allowed

Ordering Code: Example – ATUX472M450DF1

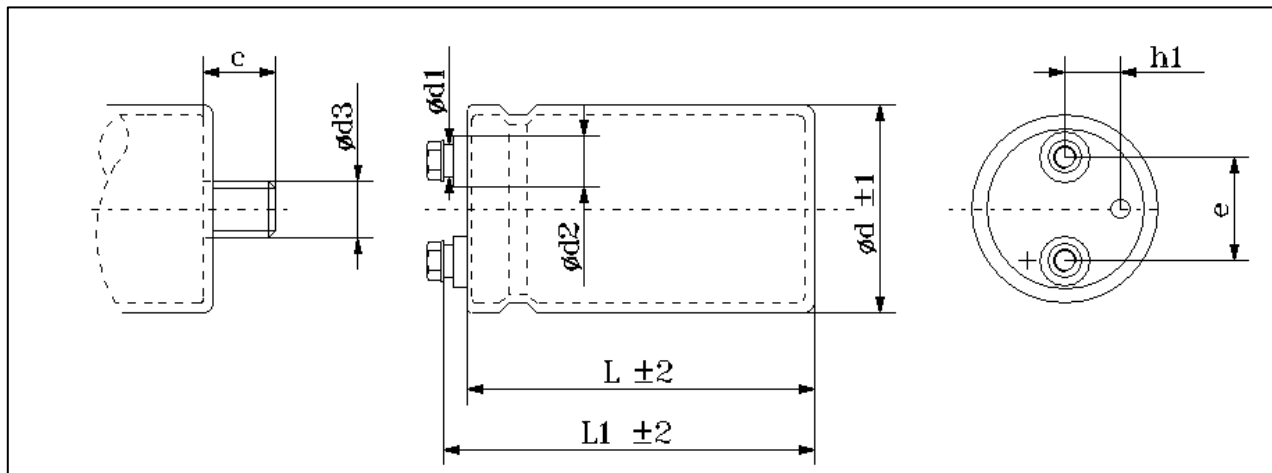
AT	(U)	X	472	M	450	DF	1
Series	U=mounting stud	Terminals	C with multiplying factor:	Tolerance	V_R	Size	1=sleeve 0=no sleeve
	Void=flat bottom		1=x10, 2=x100, 3=x1.000,				

Expected Lifetime Vs Temperature and Ripple Current



	Capacitance	Case	Diam	Height	Tanδ	ESRmax typ		Zmax	Iripple @100Hz		Ordering Code
	[uF]@100Hz		[mm]	[mm]	[%]@100Hz	[mΩ]@100Hz		[mΩ]@10KHz	[A]@55°C	[A]@105°C	(U) for mounting stud
350	2200	CC	63	105	0,06	43	35	33	19,8	8,2	AT(U)X222M350CC1
	2700	CC	63	105	0,06	35	28	27	21,9	9,1	AT(U)X272M350CC1
	3300	CC	63	105	0,06	29	23	22	24,2	10,1	AT(U)X332M350CC1
	3900	DC	76	145	0,06	24	20	18	33,7	14,0	AT(U)X392M350DC1
	4700	DF	76	145	0,06	20	16	15	37,0	15,4	AT(U)X472M350DF1
	6800	DF	76	145	0,06	14	11	11	44,5	18,6	AT(U)X682M350DF1
	8200	DF	76	145	0,06	12	9	9	48,9	20,4	AT(U)X822M350DF1
	10000	DJ	76	222	0,06	10	8	7	65,2	27,2	AT(U)X103M350DJ1
	12000	DJ	76	222	0,06	8	6	6	71,4	29,8	AT(U)X123M350DJ1
	15000	EJ	90	222	0,06	6	5	5	87,9	36,6	AT(U)G153M350EJ1
	18000	EJ	90	222	0,06	5	4	4	95,9	39,9	AT(U)G183M350EJ1
400	1000	CC	63	105	0,06	96	76	72	13,3	5,6	AT(U)X102M400CC1
	1500	CC	63	105	0,06	64	51	48	16,3	6,8	AT(U)X152M400CC1
	2200	CC	63	105	0,06	43	35	33	19,8	8,2	AT(U)X222M400CC1
	3300	CC	63	105	0,06	29	23	22	24,2	10,1	AT(U)X332M400CC1
	3900	DC	76	145	0,06	24	20	18	33,7	14,0	AT(U)X392M400DC1
	4700	DC	76	145	0,06	20	16	15	37,0	15,4	AT(U)X472M400DC1
	5600	DF	76	145	0,06	17	14	13	40,4	16,8	AT(U)X562M400DF1
	6800	DF	76	145	0,06	14	11	11	44,5	18,6	AT(U)X682M400DF1
	8200	DJ	76	222	0,06	12	9	9	59,3	24,7	AT(U)X822M400DJ1
	10000	DJ	76	222	0,06	10	8	7	65,5	27,3	AT(U)X103M400DJ1
	12000	EJ	90	222	0,06	8	6	6	78,6	32,7	AT(U)G123M400EJ1
450	1000	CC	63	105	0,06	96	76	72	13,3	5,6	AT(U)X102M450CC1
	1500	CC	63	105	0,06	64	51	48	16,3	6,8	AT(U)X152M450CC1
	2200	CC	63	105	0,06	43	35	33	19,8	8,2	AT(U)X222M450CC1
	3300	CC	63	105	0,06	29	23	22	24,2	10,1	AT(U)X332M450CC1
	3900	DC	76	145	0,06	24	20	18	33,7	14,0	AT(U)X392M450DC1
	4700	DC	76	145	0,06	20	16	15	37,0	15,4	AT(U)X472M450DC1
	5600	DF	76	145	0,06	17	14	13	40,4	16,8	AT(U)X562M450DF1
	6800	DF	76	145	0,06	14	11	11	44,5	18,6	AT(U)X682M450DF1
	8200	DJ	76	222	0,06	12	9	9	59,3	24,7	AT(U)X822M450DJ1
	10000	DJ	76	222	0,06	10	8	7	65,5	27,3	AT(U)X103M450DJ1



Technical Drawing

Dimension, Quantity and Weight for Box

Case				Connections							Mounting Stud			Packaging	
Code	DxL (mm)	L1	h1	d1	d2	e	Terminal	Screw			Screw			Pcs Box	Weight Box (Kg).
							Code	Thread	Torque (Nm)	Length	d3	c	Torque (Nm)		
BB	51x83	89	13	13	18	22.2	X	M5	2,0	10	M12	16	10	30	5-7
BC	51x105	111	13	13	18	22.2	X	M5	2,0	10	M12	16	10	30	6-9
CC	63x105	111	16	13	18	28.6	X	M5	2,0	10	M12	16	10	20	6-8
CF	63x145	151	19	13	18	28.6	X	M5	2,0	10	M12	16	10	20	9-10
DC	76x105	111	19	13	18	31.8	X	M5	2,0	10	M12	16	10	12	6-8
DF	76x145	151	19	13	18	31.8	X	M5	2,0	10	M12	16	10	12	8-14
				18	23		G	M6	2,5						
DK	76x165	173	19	13	18	31.8	X	M5	2,0	10	M12	16	10	12	9-14
				18	23		G	M6	2,5						
DG	76x200	207	19	13	18	31.8	X	M5	2,0	10	M12	16	10	12	9-13
				18	23		G	M6	2,5						
DJ	76x222	227	19	13	18	31.8	X	M5	2,0	10	M12	16	10	8	9-12
				18	23		G	M6	2,5						
DL	76x240	245	19	13	18	31.8	X	M5	2,0	10	M12	16	10	12	9-13
				18	23		G	M6	2,5						
EC	90x105	111	19	18	23	31,8	G	M6	2,5	10	M12	16	10	6	7-9
EF	90x145	151	19	18	23	31,8	G	M6	2,5	10	M12	16	10	6	9-11
EG	90x200	207	19	18	23	31,8	G	M6	2,5	10	M12	16	10	6	9-11
EJ	90x222	227	19	18	23	31,8	G	M6	2,5	10	M12	16	10	6	8-12
EL	90x240	245	19	18	23	31,8	G	M6	2,5	10	M12	16	10	6	9-13

All dimensions in mm, torque in Nm, weight in kg



Parameters	U.M.	Symbol/Value	Notes
Expected lifetime	[hrs]	8.000	@rated voltage, temperature and ripple current
Climatic category		40/105/56	-40°C / +105°C./ 85% Relative Humidity
Voltage	[V]	V_R	200 - 450V
Capacitance	[μF]	C	C_{10} rated value at t=0hrs
Capacitance tolerance	%	M = 20 %	Other capacitance on request as indicated in the data book
Series resistance	[mΩ]	ESR	ESR_{10} rated value at t=0hrs
Leakage Current	[mA]	$I_f = 0,004 \cdot C \cdot V$	I_{f10} rated value at t=0hrs
I Ripple	[A]	I_R	Ripple current @ rated parameters
		$I_t = K_f \cdot K_t \cdot I_R$	I_t ripple current at a given T
		K_f	Frequency Correlation Factor See table below
		K_t	Temperature Correlation Factor See table below
End of Life values		$\Delta C/C_{10} \leq 30\%$	
		$ESR \leq 3 \cdot ESR_{10}$	
		$I_f \leq I_{f10}$	
Surge Voltage	[V]	$V_{surge} = 1,1 \cdot V_R$	≤450V
		$V_{surge} = 1,05 \cdot V_R$	

Ripple Current Coefficient

	Hz	50	100	300	400	500	>1000
Kf	V>160	0.88	1.00	1.20	1.25	1.35	1.40

°C	50	65	75	85	95	105
Kt	2.40	2.20	2.10	1.80	1.30	1.00

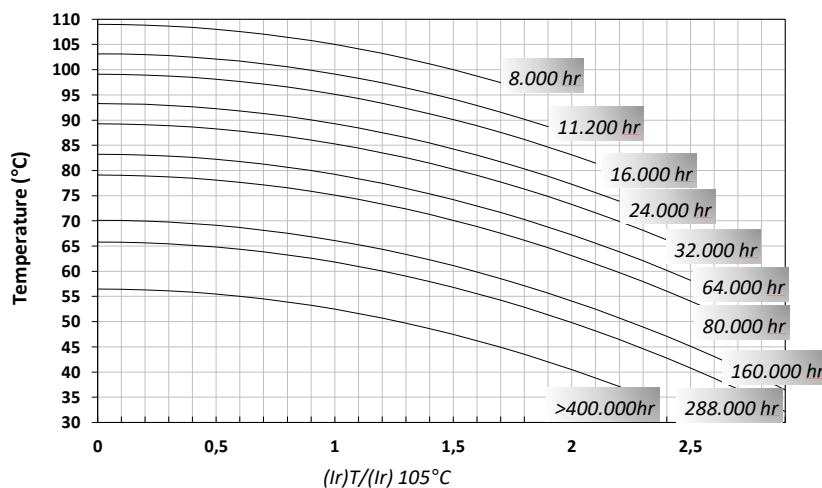
Note: Superimposed alternating voltage summed to DC voltage must not exceed rated voltage, rated ripple current must not be exceeded and no reverse polarity is allowed

Ordering Code: Example – ATK681M450NB1

ATK	681	M	450	NB	1
Series	C with multiplying factor:	Tolerance	V_R	Size	1=sleeve 0=no sleeve
	1=x10, 2=x100, 3=x1.000,				

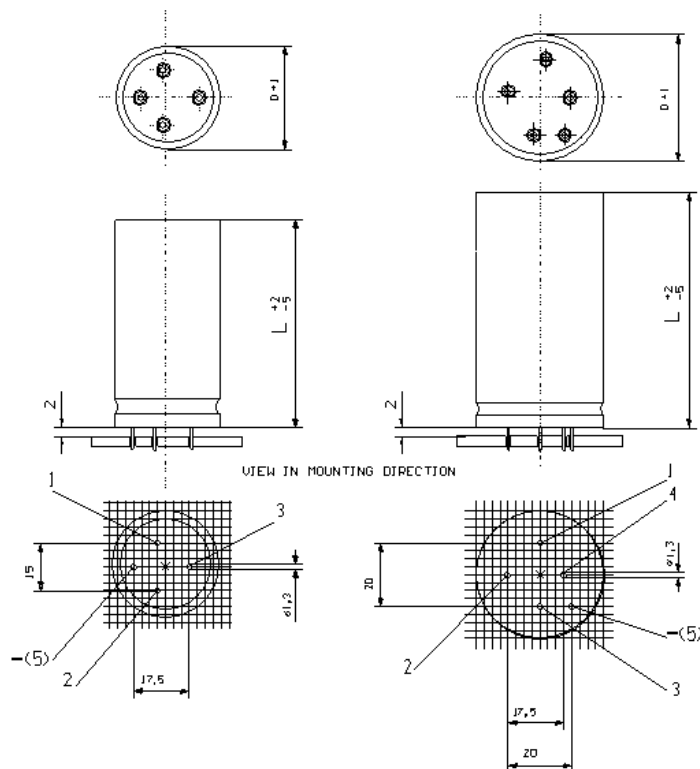
Expected Lifetime Vs Temperature and Ripple Current

ATK



	Capacitance	Case	Diam	Height	Tanδ	ESRmax typ		Zmax	Iripple @100Hz		Ordering Code
	[μF]@100Hz		[mm]	[mm]	[%]@100Hz	[mΩ]@100Hz	[mΩ]@10KHz	[mΩ]@10KHz	[A]@85°C	[A]@105°C	ATK
200	220	NB	35	40	0,08	463	371	347	2,2	1,2	ATK221M200NB1
	330	NB	35	40	0,08	309	247	232	3,0	1,7	ATK331M200NB1
	470	NC	35	50	0,08	217	173	163	3,9	2,2	ATK471M200NC1
	680	PC	40	50	0,08	150	120	112	5,1	2,8	ATK681M200PC1
	1000	PE	40	75	0,08	102	82	76	7,3	4,1	ATK102M200PE1
	1500	PG	40	100	0,08	68	54	51	10,2	5,7	ATK152M200PG1
250	220	NB	30	40	0,08	463	371	347	2,2	1,2	ATK221M250NB1
	330	NC	35	50	0,08	309	247	232	3,3	1,8	ATK331M250NC1
	680	PC	40	50	0,08	150	120	112	5,1	2,8	ATK681M250PC1
	1800	PE	40	75	0,08	57	45	42	9,8	5,4	ATK182M250PE1
	2200	PG	40	100	0,08	46	37	35	12,3	6,9	ATK222M250PG1
400	100	NB	35	40	0,08	1019	815	764	1,5	0,8	ATK101M400NB1
	150	NB	35	40	0,08	679	544	510	2,0	1,1	ATK151M400NB1
	220	NC	35	50	0,08	463	371	347	2,7	1,5	ATK221M400NC1
	330	NC	35	50	0,08	309	247	232	3,3	1,8	ATK331M400NC1
		PC	40	50	0,08	309	247	232	3,5	2,0	ATK331M400PC1
	470	PC	40	50	0,08	217	173	163	4,2	2,3	ATK471M400PC1
	680	NN	35	60	0,08	150	120	112	5,1	2,8	ATK681M400NN1
		NE	35	75	0,08	150	120	112	5,6	3,1	ATK681M400NE1
		PN	40	60	0,08	150	120	112	5,5	3,0	ATK681M400PN1
		PE	40	75	0,08	150	120	112	6,0	3,3	ATK681M400PE1
	1000	NE	35	75	0,08	102	82	76	6,8	3,8	ATK102M400NE1
		PE	40	75	0,08	102	82	76	7,3	4,1	ATK102M400PE1
		PG	40	100	0,08	102	82	76	8,3	4,6	ATK102M400PG1
450	220	NB	35	40	0,09	521	417	391	2,1	1,2	ATK221M450NB1
	330	NC	35	50	0,09	347	278	261	2,8	1,6	ATK331M450NC1
		NB	35	40	0,09	347	278	261	2,8	1,6	ATK331M450NB1
	470	NC	35	50	0,09	244	195	183	3,7	2,0	ATK471M450NC1
		PB	40	40	0,09	244	195	183	3,6	2,0	ATK471M450PB1
	560	PC	40	50	0,09	205	164	154	4,3	2,4	ATK561M450PC1
	680	NE	35	75	0,09	169	135	126	5,3	2,9	ATK681M450NE1
		PE	40	75	0,09	169	135	126	5,7	3,2	ATK681M450PE1
	820	PE	40	75	0,09	140	112	105	6,2	3,5	ATK821M450PE1
	1000	PG	40	100	0,09	115	92	86	7,8	4,4	ATK102M450PG1
	1200	PG	40	100	0,09	96	76	72	8,6	4,8	ATK122M450PG1



Technical Drawing

Dimension, Quantity and Weight for Box

Case		Connections			Packaging	
Code	DxL (mm)	PINS			Code	DxL (mm)
		ATK		Lenght		
NB	35x40	4		6.3	100	6-8
NC	35x50	4		6.3	100	6-8
NN	35x60	4		6.3	100	5-7
NE	35x75	4		6.3	50	6-8
PB	40x40		5	6.3	126	9-10
PC	40x50		5	6.3	126	9-10
PN	40x60		5	6.3	63	9-10
PE	40x75		5	6.3	63	7-9
PG	40x100		5	6.3	63	9-10

All dimensions in mm, torque in Nm, weight in kg



Parameters	U.M.	Symbol/Value	Notes
Expected lifetime	[hrs]	3.000	@rated voltage, temperature and ripple current
Climatic category		40/105/56	-40°C / +105°C / 85% Relative Humidity
Voltage	[V]	V_R	500 - 550V
Capacitance	[μF]	C	C_{10} rated value at t=0hrs
Capacitance tolerance	%	M = 20 %	Other capacitance on request as indicated in the data book
Series resistance	[mΩ]	ESR	ESR_{10} rated value at t=0hrs
Leakage Current	[mA]	$I_f = 0,004 \cdot C \cdot V$	I_{f10} rated value at t=0hrs
I Ripple	[A]	I_R	Ripple current @ rated parameters
		$I_t = K_f \cdot K_t \cdot I_R$	I_t ripple current at a given T
		K_f	Frequency Correlation Factor See table below
		K_t	Temperature Correlation Factor See table below
End of Life values		$\Delta C/C_{10} \leq 30\%$	
		$ESR \leq 3 \cdot ESR_{10}$	
		$I_f \leq I_{f10}$	
Surge Voltage	[V]	$V_{surge} = 1,1 \cdot V_R$	$\geq 500V$
		$V_{surge} = 1,05 \cdot V_R$	

Ripple Current Coefficient

Hz	50	100	120	200	300	400	500	1000
Kf	0.78	1.00	1.02	1.06	1.08	1.09	1.32	1.37

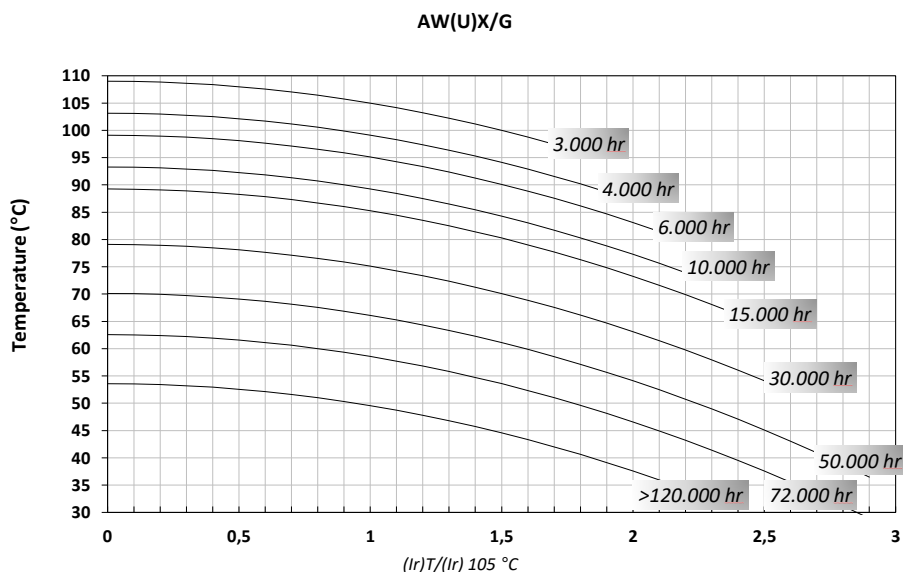
°C	40	55	65	75	85	95	105
Kt	2.50	2.40	2.20	2.00	1.80	1.30	1.00

Note: Superimposed alternating voltage summed to DC voltage must not exceed rated voltage, rated ripple current must not be exceeded and no reverse polarity is allowed

Ordering Code: Example – AWUX472M500DF1

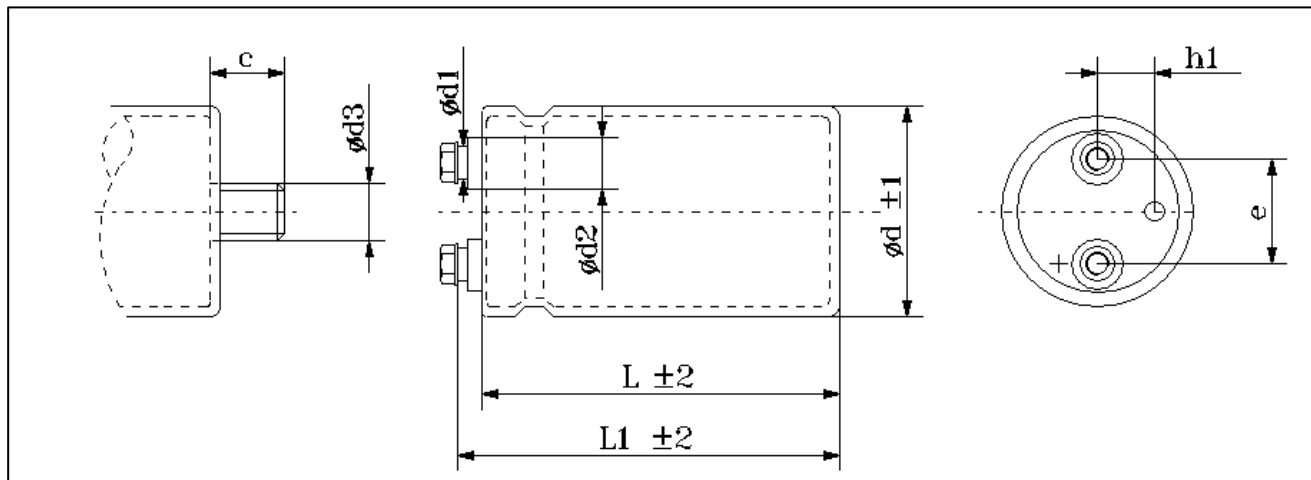
AW	(U)	X	472	M	500	DF	1
Series	U=mounting stud	Terminals	C with multiplying factor:	Tolerance	V_R	Size	1=sleeve 0=no sleeve
	Void=flat bottom		1=x10, 2=x100, 3=x1.000,				

Expected Lifetime Vs Temperature and Ripple Current



	Capacitance	Case	Diam	Height	Tanδ	ESRmax typ		Zmax	Iripple @100Hz		Ordering Code
	[uF]@100Hz		[mm]	[mm]	[%]@100Hz	[mΩ]@100Hz		[mΩ]@10KHz	[A]@55°C	[A]@85°C	(U) for mounting stud
500	1000	BB	51	83	0,18	201	167	150	4.2	2,3	AW(U)X102M500BB1
	1500	BC	51	105	0,18	141	118	106	5.6	3,1	AW(U)X152M500BC1
	2200	CC	63	105	0,18	98	79	73	7.5	4,2	AW(U)X222M500CC1
	3300	DC	76	105	0,18	68	56	51	10.5	5,8	AW(U)X332M500DC1
	4700	DF	76	145	0,18	32	27	24	16.5	9,2	AW(U)X472M500DF1
	5600	EF	90	145	0,18	26	21	20	20.3	11,3	AW(U)G562M500EF1
	6800	EF	90	145	0,18	23	18	17	22.1	12,3	AW(U)G682M500EF1
	6800	DJ	76	222	0,18	23	18	17	23.4	13,0	AW(U)X682M500DJ1
	8200	EJ	90	222	0,18	18	15	14	29.2	16,2	AW(U)G822M500EJ1
	10000	EJ	90	222	0,18	15	13	11	32.0	17,8	AW(U)G103M500EJ1
	12000	EL	90	240	0,18	14	11	10	35.2	19,6	AW(U)G123M500EL1
550	820	BB	51	83	0,15	212	177	159	4.10	2,3	AW(U)X821M550BB1
	1000	BC	51	105	0,15	165	137	124	5.07	2,8	AW(U)X102M550BC1
	1200	BC	51	105	0,15	144	120	108	5.43	3,0	AW(U)X122M550BC1
	1500	CC	63	105	0,15	126	105	95	6.59	3,7	AW(U)X152M550CC1
	2200	CC	63	105	0,15	94	78	71	7.63	4,2	AW(U)X222M550CC1
	3300	DC	76	105	0,15	60	49	44	12.2	6,8	AW(U)X332M550DC1
	3900	DF	76	145	0,15	35	29	27	15.7	8,7	AW(U)X392M550DF1
	4700	DF	76	145	0,15	31	26	23	16.8	9,3	AW(U)X472M550DF1
	5600	EF	90	145	0,15	25	21	19	21.5	11,9	AW(U)G562M550EF1
	6800	DJ	76	222	0,15	21	17	16	24.2	13,4	AW(U)X682M550DJ1
	8200	EJ	90	222	0,15	17	14	13	30.1	16,7	AW(U)G822M550EJ1
	10000	EL	90	240	0,15	14	12	10	34.2	19,0	AW(U)G103M550EL1



Technical Drawing

Dimension, Quantity and Weight for Box

Case				Connections							Mounting Stud			Packaging	
Code	DxL (mm)	L1	h1	d1	d2	e	Terminal	Screw			Screw			Pcs Box	Weight Box (Kg).
							Code	Thread	Torque (Nm)	Length	d3	c	Torque (Nm)		
BB	51x83	89	13	13	18	22.2	X	M5	2,0	10	M12	16	10	30	5-7
BC	51x105	111	13	13	18	22.2	X	M5	2,0	10	M12	16	10	30	6-9
CC	63x105	111	16	13	18	28.6	X	M5	2,0	10	M12	16	10	20	6-8
CF	63x145	151	19	13	18	28.6	X	M5	2,0	10	M12	16	10	20	9-10
DC	76x105	111	19	13	18	31.8	X	M5	2,0	10	M12	16	10	12	6-8
DF	76x145	151	19	13	18	31.8	X	M5	2,0	10	M12	16	10	12	8-14
				18	23		G	M6	2,5						
DK	76x165	173	19	13	18	31.8	X	M5	2,0	10	M12	16	10	12	9-14
				18	23		G	M6	2,5						
DG	76x200	207	19	13	18	31.8	X	M5	2,0	10	M12	16	10	12	9-13
				18	23		G	M6	2,5						
DJ	76x222	227	19	13	18	31.8	X	M5	2,0	10	M12	16	10	8	9-12
				18	23		G	M6	2,5						
DL	76x240	245	19	13	18	31.8	X	M5	2,0	10	M12	16	10	12	9-13
				18	23		G	M6	2,5						
EC	90x105	111	19	18	23	31,8	G	M6	2,5	10	M12	16	10	6	7-9
EF	90x145	151	19	18	23	31,8	G	M6	2,5	10	M12	16	10	6	9-11
EG	90x200	207	19	18	23	31,8	G	M6	2,5	10	M12	16	10	6	9-11
EJ	90x222	227	19	18	23	31,8	G	M6	2,5	10	M12	16	10	6	8-12
EL	90x240	245	19	18	23	31,8	G	M6	2,5	10	M12	16	10	6	9-13

All dimensions in mm, torque in Nm, weight in kg



Parameters	U.M.	Symbol/Value	Notes
Expected lifetime	[hrs]	8.000	@rated voltage, temperature and ripple current
Climatic category		40/105/56	-40°C / +105°C./ 85% Relative Humidity
Voltage	[V]	V_R	200-450
Capacitance	[μF]	C	C_{10} rated value at t=0hrs
Capacitance tolerance	%	M = 20 %	Other capacitance on request as indicated in the data book
Series resistance	[mΩ]	ESR	ESR_{10} rated value at t=0hrs
Leakage Current	[mA]	$I_f = 0,004 \cdot C \cdot V$	I_{f10} rated value at t=0hrs
I Ripple	[A]	I_R	Ripple current @ rated parameters
		$I_t = K_f \cdot K_t \cdot I_R$	I_t ripple current at a given T
		K_f	Frequency Correlation Factor See table below
		K_t	Temperature Correlation Factor See table below
End of Life values		$\Delta C/C_{10} \leq 30\%$	
		$ESR \leq 3 \cdot ESR_{10}$	
		$I_f \leq I_{f10}$	
Surge Voltage	[V]	$V_{surge} = 1,1 \cdot V_R$	≤450V
		$V_{surge} = 1,05 \cdot V_R$	

Ripple Current Coefficient

	Hz	50	100	300	400	500	>1000
Kf	V>160	0.88	1.00	1.20	1.25	1.35	1.40

°C	50	65	75	85	95	105
Kt	2.40	2.20	2.10	1.80	1.30	1.00

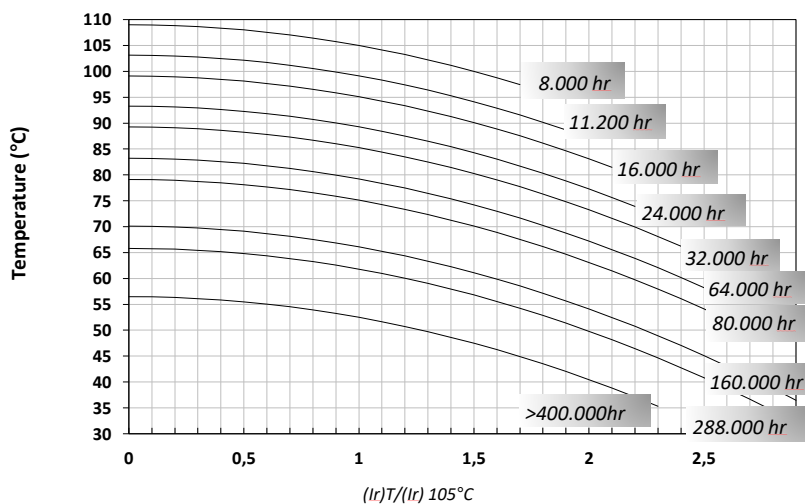
Note: Superimposed alternating voltage summed to DC voltage must not exceed rated voltage, rated ripple current must not be exceeded and no reverse polarity is allowed

Ordering Code: Example – ATC821M400PC1

ATC	821	M	400	PC	1
Series	C with multiplying factor: 1=x10, 2=x100, 3=x1.000,	Tolerance	V_R	Size	1=sleeve 0=no sleeve

Expected Lifetime Vs Temperature and Ripple Current

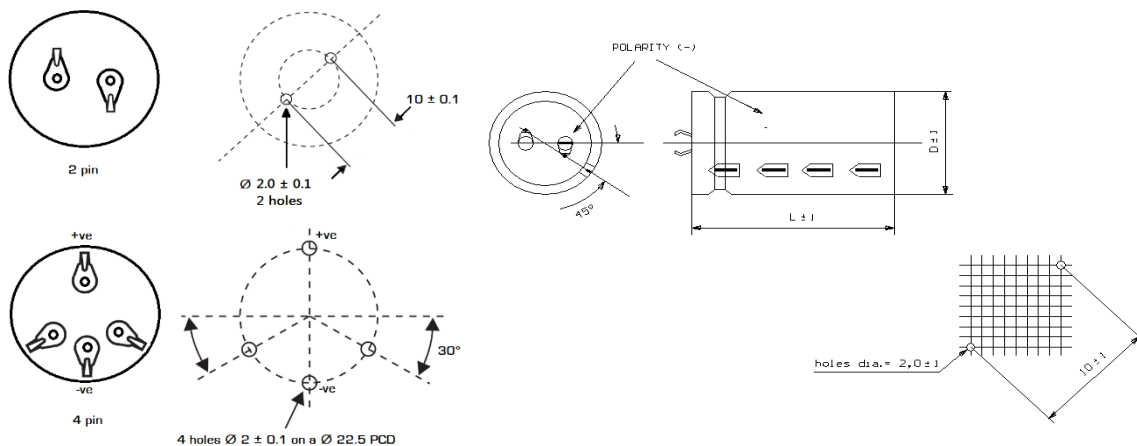
ATC/S



	Capacitance	Case	Diam	Height	Tanδ	ESRmax typ		Zmax	Iripple @100Hz		Ordering Code
	[μF]@100Hz		[mm]	[mm]	[%]@100Hz	[mΩ]@100Hz	[mΩ]@10KHz	[mΩ]@10KHz	[A]@85°C	[A]@105°C	*= C, 2 Pins S, 4 Pins
200	220	MB	30	40	0,08	463	371	347	2,2	1,2	AT*221M200MB1
	330	NB	35	40	0,08	309	247	232	3,0	1,7	AT*331M200NB1
	470	NC	35	50	0,08	217	173	163	3,9	2,2	AT*471M200NC1
	680	MC	30	50	0,08	150	120	112	4,3	2,4	AT*681M200MC1
		PC	40	50	0,08	150	120	112	5,1	2,8	AT*681M200PC1
	1000	NC	35	50	0,08	102	82	76	5,7	3,2	AT*102M200NC1
		PE	40	75	0,08	102	82	76	7,3	4,1	AT*102M200PE1
	1500	PC	40	50	0,08	68	54	51	7,5	4,2	AT*152M200PC1
		PG	40	100	0,08	68	54	51	10,2	5,7	AT*152M200PG1
	1800	PE	40	75	0,08	57	45	42	9,8	5,4	AT*182M200PE1
		QC	45	50	0,08	57	45	42	8,8	4,9	AT*182M200QC1
	2200	PG	40	100	0,08	46	37	35	12,3	6,9	AT*222M200PG1
		QE	45	75	0,08	46	37	35	11,6	6,4	AT*222M200QE1
250	220	MB	30	40	0,08	463	371	347	2,2	1,2	AT*221M250MB1
		NB	35	40	0,08	463	371	347	2,4	1,3	AT*221M250NB1
	330	NC	35	50	0,08	309	247	232	3,3	1,8	AT*331M250NC1
	470	MC	30	50	0,08	217	173	163	3,6	2,0	AT*471M250MC1
	680	NC	35	50	0,08	150	120	112	4,7	2,6	AT*681M250NC1
	1000	NC	35	50	0,08	102	82	76	5,7	3,2	AT*102M250NC1
	1200	PC	40	50	0,08	85	68	64	6,7	3,7	AT*122M250PC1
		PE	40	75	0,08	68	54	51	8,9	5,0	AT*152M250PE1
	1500	QC	45	50	0,08	68	54	51	8,1	4,5	AT*152M250QC1
		PG	40	100	0,08	46	37	35	12,3	6,9	AT*222M250PG1
	2200	QE	45	75	0,08	46	37	35	11,6	6,4	AT*222M250QE1
	2700	QG	45	100	0,08	38	30	28	14,6	8,1	AT*272M250QG1
400	220	MB	30	40	0,08	463	297	347	3,1	1,7	AT*221M400MB1
	330	MC	30	50	0,08	309	198	232	4,2	2,3	AT*331M400MC1
		NC	35	50	0,08	309	198	232	4,6	2,5	AT*331M400NC1
	470	NC	35	50	0,08	217	139	163	5,4	3,0	AT*471M400NC1
	680	NN	35	60	0,08	150	96	112	7,1	3,9	AT*681M400NN1
		NE	35	75	0,08	150	96	112	7,8	4,3	AT*681M400NE1
		PC	40	50	0,08	150	120	112	5,1	2,8	AT*681M400PC1
	820	PC	40	50	0,08	124	80	93	7,8	4,3	AT*821M400PC1
	1000	PN	40	60	0,08	102	65	76	9,3	5,1	AT*102M400PN1
		PE	40	75	0,08	102	65	76	10,2	5,7	AT*102M400PE1
		PG	40	100	0,08	102	65	76	11,6	6,5	AT*102M400PG1
		QC	45	50	0,08	102	65	76	9,2	5,1	AT*102M400QC1
	1200	PE	40	75	0,08	85	54	64	11,2	6,2	AT*122M400PE1
		QN	45	60	0,08	85	54	64	10,9	6,0	AT*122M400QN1

	Capacitance	Case	Diam	Height	Tanδ	ESRmax typ		Zmax	Iripple @100Hz		Ordering Code
	[μF]@100Hz		[mm]	[mm]	[%]@100Hz	[mΩ]@100Hz	[mΩ]@100Hz	[mΩ]@10KHz	[A]@85°C	[A]@105°C	*= C, 2 Pins S, 4 Pins
400	1500	PG	40	100	0,08	68	44	51	14,2	7,9	AT*152M400PG1
	1500	QE	45	75	0,08	68	44	51	13,4	7,4	AT*152M400QE1
	1800	QG	45	100	0,08	57	36	42	16,6	9,2	AT*182M400QG1
450	220	MB	30	40	0,09	521	297	391	3,1	1,7	AT*221M450MB1
	330	MC	30	50	0,09	347	198	261	4,2	2,3	AT*331M450MC1
		NB	35	40	0,09	347	198	261	4,2	2,3	AT*331M450NB1
	470	NC	35	50	0,09	244	139	183	5,4	3,0	AT*471M450NC1
		PB	40	40	0,09	244	139	183	5,4	3,0	AT*471M450PB1
	560	PC	40	50	0,09	205	117	154	6,4	3,6	AT*561M450PC1
	680	NE	35	75	0,09	169	96	126	7,8	4,3	AT*681M450NE1
	820	PE	40	75	0,09	140	80	105	9,2	5,1	AT*821M450PE1
		QC	45	50	0,09	140	80	105	8,3	4,6	AT*821M450QC1
	1000	PG	40	100	0,09	115	65	86	11,6	6,5	AT*102M450PG1
		QE	45	75	0,09	115	65	86	10,9	6,1	AT*102M450QE1
	1200	PG	40	100	0,09	96	54	72	12,7	7,1	AT*122M450PG1
	1500	QG	45	100	0,09	76	44	57	15,2	8,4	AT*152M450QG1

Technical Drawing



Dimension, Quantity and Weight for Box

Case		Connections			Packaging	
Code	DxL (mm)	PINS			Pcs/Box	Weight/Box (Kg)
		ATC	ATS	Lenght		
MB	30x40	2		6.3	254	4-6
MC	30x50	2		6.3	254	4-6
NB	35x40	2	4	6.3	100	6-8
NC	35x50	2	4	6.3	100	6-8
NN	35x60	2	4	6.3	100	5-7
NE	35x75	2	4	6.3	50	6-8
PB	40x40	2	4	6.3	126	9-10
PC	40x50	2	4	6.3	126	9-10
PN	40x60	2	4	6.3	63	9-10
PE	40x75		4	6.3	63	7-9
PG	40x100		4	6.3	63	9-10
PH	40x105		4	6.3	48	8-10
QC	45x50		4	6.3	96	6-8
QN	45x60		4	6.3	48	6-8
QE	45x75		4	6.3	48	7-9
QG	45x100		4	6.3	48	8-10
QH	45x105		4	6.3	48	8-10
RE	50x75		4	6.3	48	8-10
RG	50x100		4	6.3	48	8-10
RH	50x105		4	6.3	48	8-10

All dimensions in mm, torque in Nm, weight in kg



Parameters	U.M.	Symbol/Value	Notes
Expected lifetime	[hrs]	3.000	@rated voltage, temperature and ripple current
Climatic category		40/105/56	-40°C / +105°C./ 85% Relative Humidity
Voltage	[V]	V_R	500 - 550V
Capacitance	[μF]	C	C_{10} rated value at t=0hrs
Capacitance tolerance	%	M = 20 %	Other capacitance on request as indicated in the data book
Series resistance	[mΩ]	ESR	ESR_{10} rated value at t=0hrs
Leakage Current	[mA]	$I_f = 0,004 \cdot C \cdot V$	I_{f10} rated value at t=0hrs
I Ripple	[A]	I_R	Ripple current @ rated parameters
		$I_t = K_f \cdot K_t \cdot I_R$	I_t ripple current at a given T
		K_f	Frequency Correlation Factor See table below
		K_t	Temperature Correlation Factor See table below
End of Life values		$\Delta C/C_{10} \leq 30\%$	
		$ESR \leq 3 \cdot ESR_{10}$	
		$I_f \leq I_{f10}$	
Surge Voltage	[V]	$V_{surge} = 1,1 \cdot V_R$	=500
		$V_{surge} = 1,05 \cdot V_R$	>500V

Ripple Current Coefficient

	Hz	50	100	120	200	300	400	500	>1000
Kf	V>=500	0.78	1.00	1.02	1.06	1.08	1.09	1.32	1.37

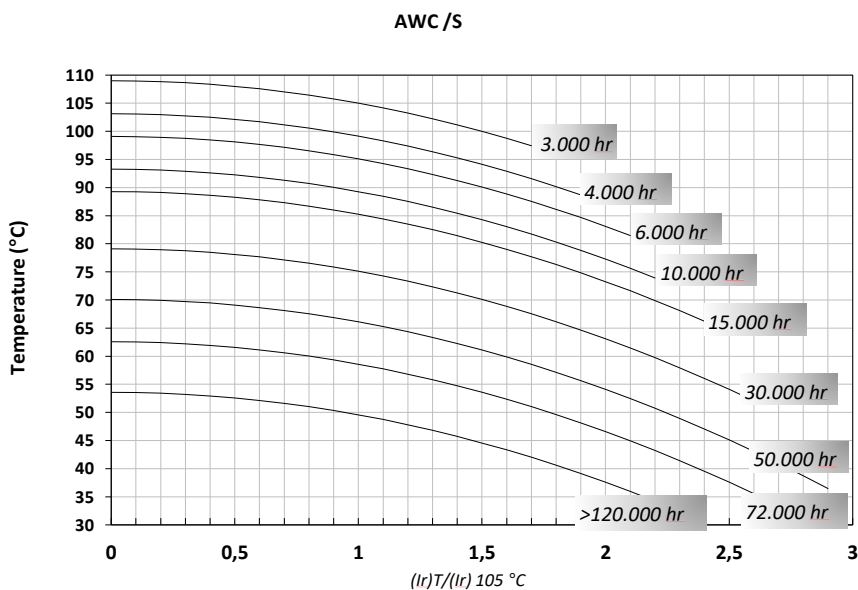
°C	40	55	65	75	85	95	105
Kt	2.50	2.40	2.20	2.00	1.80	1.30	1.00

Note: Superimposed alternating voltage summed to DC voltage must not exceed rated voltage, rated ripple current must not be exceeded and no reverse polarity is allowed

Ordering Code: Example – AWC561M500PN1

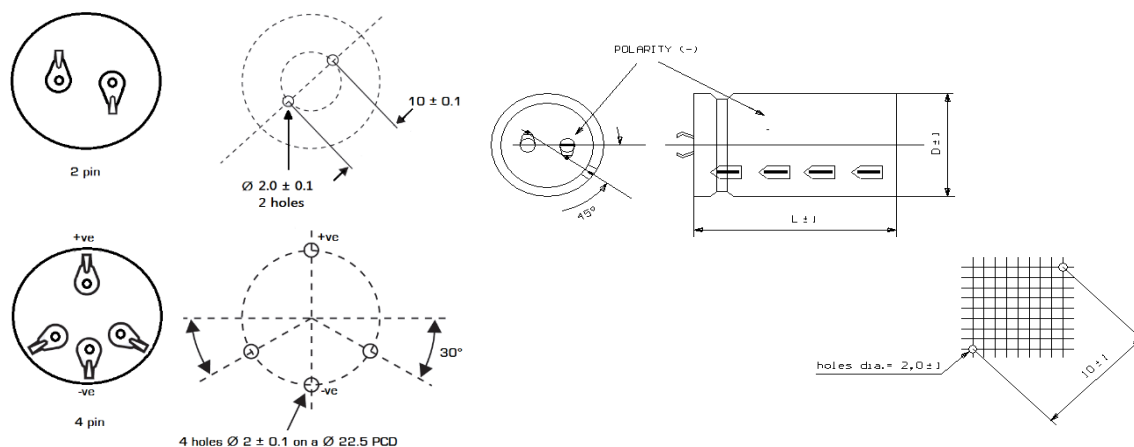
AWC	561	M	500	PN	1
Series	C with multiplying factor:	Tolerance	V_R	Size	1=sleeve 0=no sleeve
	1=x10, 2=x100, 3=x1.000,				

Expected Lifetime Vs Temperature and Ripple Current



	Capacitance	Case	Diam	Height	Tan δ	ESRmax typ		Zmax	Iripple @100Hz		Ordering Code
	[μ F]@100Hz		[mm]	[mm]	[%]@100Hz	[m Ω]@100Hz		[m Ω]@10KHz	[A]@85°C	[A]@105°C	*= C, 2 Pins S, 4 Pins
500	150	MB	30	40	0,19	1066	888	800	1.10	0,6	AW*151M500MB1
	220	MC	30	50	0,19	758	633	568	1.30	0,7	AW*221M500MC1
	220	NB	35	40	0,19	767	639	575	1.30	0,7	AW*221M500NB1
	270	NC	35	50	0,19	602	499	452	1.60	0,9	AW*271M500NC1
	330	NN	35	60	0,19	492	410	369	1.95	1,1	AW*331M500NN1
	390	PC	40	50	0,19	440	367	330	2.15	1,2	AW*391M500PC1
	470	PN	40	60	0,19	365	304	273	2.45	1,4	AW*471M500PN1
	560	PN	40	60	0,19	330	275	247	2.55	1,4	AW*561M500PN1
	680	PG	40	100	0,19	233	194	175	3.60	2,0	AW*681M500PG1
	680	QE	45	60	0,19	266	221	199	3.05	1,7	AW*681M500QE1
	820	PG	40	100	0,19	210	175	157	3.85	2,1	AW*821M500PG1
550	150	MB	30	40	0,15	1022	851	766	1.15	0,6	AW*151M550MB1
	220	NB	35	40	0,15	727	606	545	1.45	0,8	AW*221M550NB1
	270	NC	35	50	0,15	592	494	444	1.70	0,9	AW*271M550NC1
	330	NN	35	60	0,15	470	392	353	1.90	1,1	AW*331M550NN1
	330	PC	40	50	0,15	484	399	363	1.95	1,1	AW*331M550PC1
	390	PN	40	60	0,15	407	339	305	2.20	1,2	AW*391M550PN1
	470	PN	40	60	0,15	354	295	265	2.55	1,4	AW*471M550PN1
	560	QN	45	60	0,15	283	236	212	2.95	1,6	AW*561M550QN1
	680	PG	40	100	0,15	233	192	175	3.65	2,0	AW*681M550PG1
	820	PG	45	100	0,15	191	159	143	4.20	2.3	AW*821M550PG1



Technical Drawing

Dimension, Quantity and Weight for Box

Case		Connections			Packaging	
Code	DxL (mm)	PINS			Pcs/Box	Weight/Box (Kg)
		AWC	AWS	Lenght		
MB	30x40	2		6.3	254	4-6
MC	30x50	2		6.3	254	4-6
NB	35x40	2	4	6.3	100	6-8
NC	35x50	2	4	6.3	100	6-8
NN	35x60	2	4	6.3	100	5-7
NE	35x75	2	4	6.3	50	6-8
PB	40x40	2	4	6.3	126	9-10
PC	40x50	2	4	6.3	126	9-10
PN	40x60	2	4	6.3	63	9-10
PE	40x75		4	6.3	63	7-9
PG	40x100		4	6.3	63	9-10
PH	40x105		4	6.3	48	8-10
QC	45x50		4	6.3	96	6-8
QN	45x60		4	6.3	48	6-8
QE	45x75		4	6.3	48	7-9
QG	45x100		4	6.3	48	8-10
QH	45x105		4	6.3	48	8-10
RE	50x75		4	6.3	48	8-10
RG	50x100		4	6.3	48	8-10
RH	50x105		4	6.3	48	8-10

All dimensions in mm, torque in Nm, weight in kg



Parameters	U.M.	Symbol/Value	Notes
Expected lifetime	[hrs]	3.000	@rated voltage, temperature and ripple current
Climatic category		40/105/56	-40°C / +105°C./ 85% Relative Humidity
Voltage	[V]	V_R	500 - 550V
Capacitance	[μF]	C	C_{10} rated value at t=0hrs
Capacitance tolerance	%	M = 20 %	Other capacitance on request as indicated in the data book
Series resistance	[mΩ]	ESR	ESR_{10} rated value at t=0hrs
Leakage Current	[mA]	$I_f = 0,004 \cdot C \cdot V$	I_{f10} rated value at t=0hrs
I Ripple	[A]	I_R	Ripple current @ rated parameters
		$I_t = K_f \cdot K_t \cdot I_R$	I_t ripple current at a given T
		K_f	Frequency Correlation Factor See table below
		K_t	Temperature Correlation Factor See table below
End of Life values		$\Delta C/C_{10} \leq 30\%$	
		$ESR \leq 3 \cdot ESR_{10}$	
		$I_f \leq I_{f10}$	
Surge Voltage	[V]	$V_{surge} = 1,1 \cdot V_R$	=500
		$V_{surge} = 1,05 \cdot V_R$	>500V

Ripple Current Coefficient

	Hz	50	100	120	200	300	400	500	>1000
Kf	V>=500	0.78	1.00	1.02	1.06	1.08	1.09	1.32	1.37

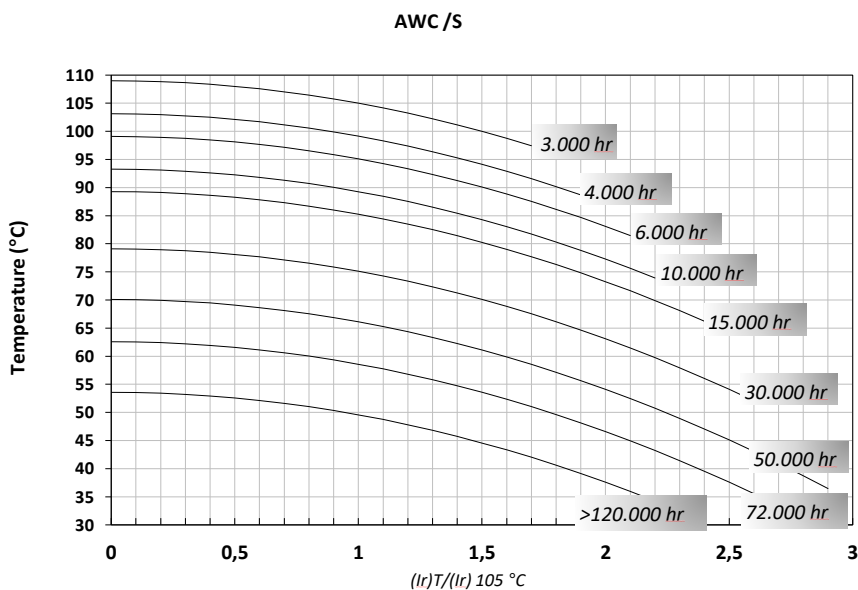
°C	40	55	65	75	85	95	105
Kt	2.50	2.40	2.20	2.00	1.80	1.30	1.00

Note: Superimposed alternating voltage summed to DC voltage must not exceed rated voltage, rated ripple current must not be exceeded and no reverse polarity is allowed

Ordering Code: Example – AWC561M500PN1

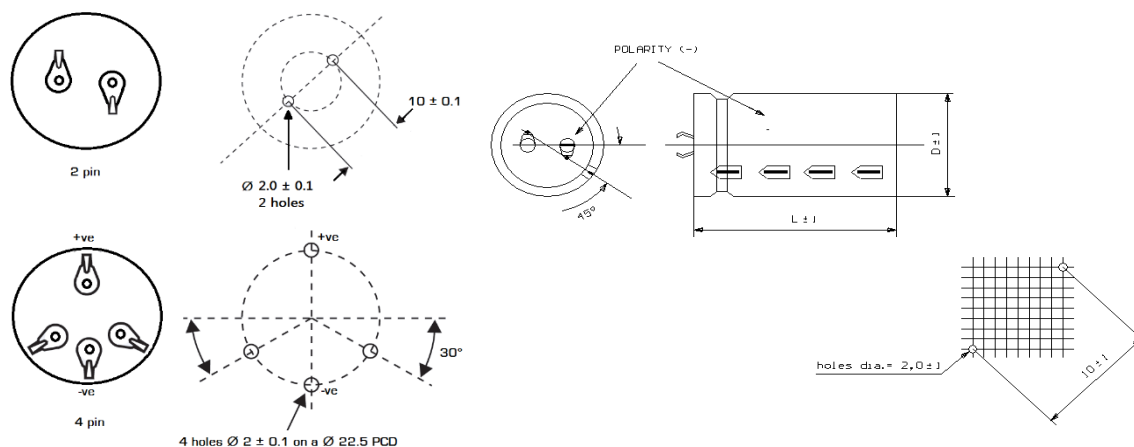
AWC	561	M	500	PN	1
Series	C with multiplying factor:	Tolerance	V_R	Size	1=sleeve 0=no sleeve
	1=x10, 2=x100, 3=x1.000,				

Expected Lifetime Vs Temperature and Ripple Current



	Capacitance	Case	Diam	Height	Tan δ	ESRmax typ		Zmax	Iripple @100Hz		Ordering Code
	[μ F]@100Hz		[mm]	[mm]	[%]@100Hz	[m Ω]@100Hz		[m Ω]@10KHz	[A]@85°C	[A]@105°C	*= C, 2 Pins S, 4 Pins
500	150	MB	30	40	0,19	1066	888	800	1.10	0,6	AW*151M500MB1
	220	MC	30	50	0,19	758	633	568	1.30	0,7	AW*221M500MC1
	220	NB	35	40	0,19	767	639	575	1.30	0,7	AW*221M500NB1
	270	NC	35	50	0,19	602	499	452	1.60	0,9	AW*271M500NC1
	330	NN	35	60	0,19	492	410	369	1.95	1,1	AW*331M500NN1
	390	PC	40	50	0,19	440	367	330	2.15	1,2	AW*391M500PC1
	470	PN	40	60	0,19	365	304	273	2.45	1,4	AW*471M500PN1
	560	PN	40	60	0,19	330	275	247	2.55	1,4	AW*561M500PN1
	680	PG	40	100	0,19	233	194	175	3.60	2,0	AW*681M500PG1
	680	QE	45	60	0,19	266	221	199	3.05	1,7	AW*681M500QE1
	820	PG	40	100	0,19	210	175	157	3.85	2,1	AW*821M500PG1
	1000	QG	45	100	0,19	172	144	130	4.50	2,5	AW*102M500QG1
550	150	MB	30	40	0,15	1022	851	766	1.15	0,6	AW*151M550MB1
	220	NB	35	40	0,15	727	606	545	1.45	0,8	AW*221M550NB1
	270	NC	35	50	0,15	592	494	444	1.70	0,9	AW*271M550NC1
	330	NN	35	60	0,15	470	392	353	1.90	1,1	AW*331M550NN1
	330	PC	40	50	0,15	484	399	363	1.95	1,1	AW*331M550PC1
	390	PN	40	60	0,15	407	339	305	2.20	1,2	AW*391M550PN1
	470	PN	40	60	0,15	354	295	265	2.55	1,4	AW*471M550PN1
	560	QN	45	60	0,15	283	236	212	2.95	1,6	AW*561M550QN1
	680	PG	40	100	0,15	233	192	175	3.65	2,0	AW*681M550PG1
	820	PG	45	100	0,15	191	159	143	4.20	2.3	AW*821M550PG1



Technical Drawing

Dimension, Quantity and Weight for Box

Case		Connections			Packaging	
Code	DxL (mm)	PINS			Pcs/Box	Weight/Box (Kg)
		AWC	AWS	Lenght		
MB	30x40	2		6.3	254	4-6
MC	30x50	2		6.3	254	4-6
NB	35x40	2	4	6.3	100	6-8
NC	35x50	2	4	6.3	100	6-8
NN	35x60	2	4	6.3	100	5-7
NE	35x75	2	4	6.3	50	6-8
PB	40x40	2	4	6.3	126	9-10
PC	40x50	2	4	6.3	126	9-10
PN	40x60	2	4	6.3	63	9-10
PE	40x75		4	6.3	63	7-9
PG	40x100		4	6.3	63	9-10
PH	40x105		4	6.3	48	8-10
QC	45x50		4	6.3	96	6-8
QN	45x60		4	6.3	48	6-8
QE	45x75		4	6.3	48	7-9
QG	45x100		4	6.3	48	8-10
QH	45x105		4	6.3	48	8-10
RE	50x75		4	6.3	48	8-10
RG	50x100		4	6.3	48	8-10
RH	50x105		4	6.3	48	8-10

All dimensions in mm, torque in Nm, weight in kg



Parameters	U.M.	Symbol/Value	Notes
Expected lifetime	[hrs]	10.000	@rated voltage, temperature and ripple current
Climatic category		40/85/56	-40°C / +85°C / 85% Relative Humidity
Voltage	[V]	V_R	40 - 500V
Capacitance	[μF]	C	C_{10} rated value at t=0hrs
Capacitance tolerance	%	M = 20 %	Other capacitance on request as indicated in the data book
Series resistance	[mΩ]	ESR	ESR_{10} rated value at t=0hrs
Leakage Current	[mA]	$I_f = 0,004 \cdot C \cdot V$	I_{f10} rated value at t=0hrs
I Ripple	[A]	I_R	Ripple current @ rated parameters
		$I_t = K_f \cdot K_t \cdot I_R$	I_t ripple current at a given T
		K_f	Frequency Correlation Factor See table below
		K_t	Temperature Correlation Factor See table below
End of Life values		$\Delta C/C_{10} \leq 30\%$	
		$ESR \leq 3 \cdot ESR_{10}$	
		$I_f \leq I_{f10}$	
Surge Voltage	[V]	$V_{surge} = 1,1 \cdot V_R$	≤450V
		$V_{surge} = 1,05 \cdot V_R$	=500V

Ripple Current Coefficient

	D= Diameter	Hz	50	100	120	200	300	400	500	1000
Kf	D<63	V≤300	0.79	1.00	1.04	1.12	1.16	1.20	1.22	1.25
		V>300	0.76	1.00	1.04	1.17	1.28	1.35	1.39	1.45
	D≥63	V≤300	0.78	1.00	1.02	1.06	1.08	1.09	1.09	1.09
		V>300	0.72	1.00	1.03	1.14	1.24	1.29	1.32	1.37

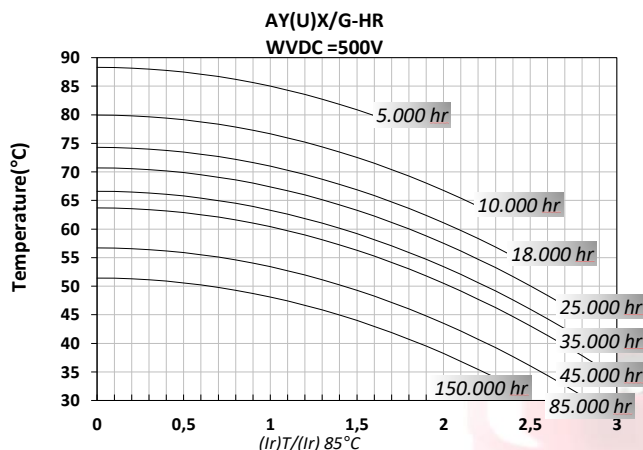
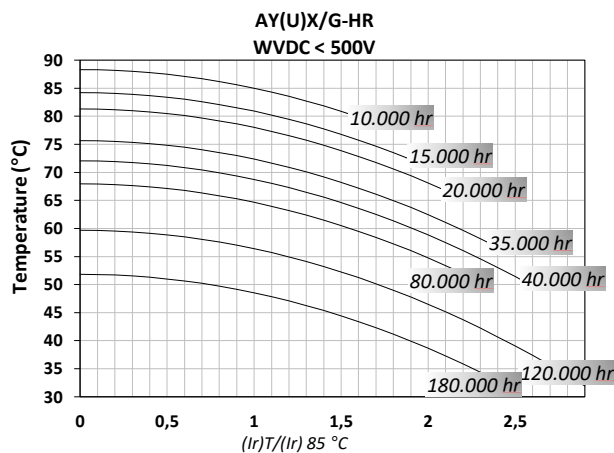
°C	40	55	65	75	85
Kt	1.65	1.50	1.40	1.20	1.00

Note: Superimposed alternating voltage summed to DC voltage must not exceed rated voltage, rated ripple current must not be exceeded and no reverse polarity is allowed

Ordering Code: Example – AYUX-HR472M450DF1

AY	(U)	X	472	M	450	DF	1
Series	U=mounting stud	Terminals	C with multiplying factor:	Tolerance	V_R	Size	1=sleeve 0=no sleeve
	Void=flat bottom		1=x10, 2=x100, 3=x1.000,				

Expected Lifetime Vs Temperature and Ripple Current

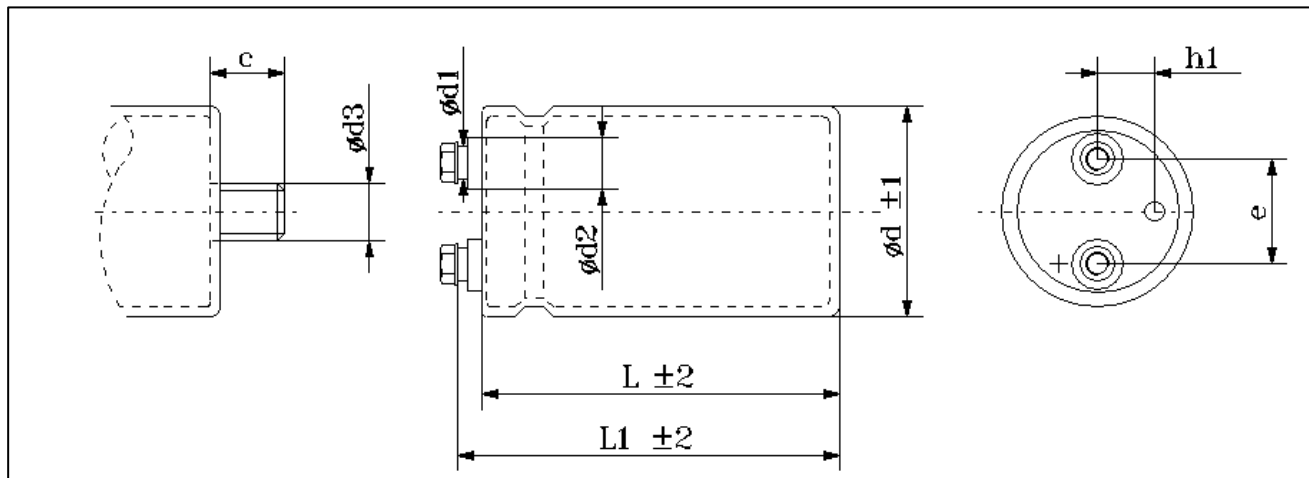


	Capacitance	Case	Diam	Height	Tan δ	ESRmax typ		Zmax	Iripple @100Hz		Ordering Code
	[uF]@100Hz		[mm]	[mm]	[%]@100Hz	[m Ω]@100Hz	[m Ω]@10KHz	[m Ω]@10KHz	[A]@55°C	[A]@85°C	(U) for mounting stud
40	10000	AA	35	59	0,27	43	34	32	7,3	5,2	AY(U)X-HR103M040AA1
	15000	AB	35	83	0,35	37	30	28	13,4	9,6	AY(U)X-HR153M040AB1
	22000	AC	35	105	0,42	30	24	23	16,6	11,8	AY(U)X-HR223M040AC1
	33000	BB	51	83	0,45	22	17	16	21,7	15,5	AY(U)X-HR333M040BB1
	47000	BB	51	83	0,48	16	13	12	25,1	17,9	AY(U)X-HR473M040BB1
		BC	51	105	0,51	17	14	13	27,0	19,3	AY(U)X-HR473M040BC1
	100000	CC	63	105	0,70	11	9	8	38,1	27,2	AY(U)X-HR104M040CC1
	150000	DC	76	105	0,90	10	8	7	45,8	32,7	AY(U)X-HR154M040DC1
63	22000	BB	51	83	0,26	19	15	14	17,1	12,2	AY(U)X-HR223M063BB1
		BC	51	105	0,24	17	14	13	19,7	14,1	AY(U)X-HR223M063BC1
	33000	BC	51	105	0,28	14	11	10	22,3	15,9	AY(U)X-HR333M063BC1
		CC	63	105	0,27	13	10	10	25,8	18,4	AY(U)X-HR333M063CC1
	47000	CC	63	105	0,30	10	8	8	29,2	20,9	AY(U)X-HR473M063CC1
	68000	DC	76	105	0,36	8	7	6	35,4	25,3	AY(U)X-HR683M063DC1
	100000	DF	76	145	0,40	6	5	5	47,1	33,7	AY(U)X-HR104M063DF1
100	10000	BB	51	83	0,12	19	15	14	16,9	12,1	AY(U)X-HR103M100BB1
		BC	51	105	0,1	16	13	12	20,6	14,7	AY(U)X-HR103M100BC1
	15000	BC	51	105	0,11	12	9	9	24,0	17,1	AY(U)X-HR153M100BC1
	22000	CC	63	105	0,15	11	9	8	28,3	20,2	AY(U)X-HR223M100CC1
		DC	76	105	0,14	10	8	8	32,5	23,2	AY(U)X-HR223M100DC1
	33000	DC	76	105	0,18	9	7	7	35,2	25,1	AY(U)X-HR333M100DC1
		DF	76	145	0,16	8	6	6	42,8	30,6	AY(U)X-HR333M100DF1
	47000	DF	76	145	0,18	6	5	5	48,1	34,4	AY(U)X-HR473M100DF1
160	4700	BC	51	105	0,1	34	27	25	14,1	10,1	AY(U)X-HR472M160BC1
		CC	63	105	0,09	30	24	23	16,9	12,0	AY(U)X-HR472M160CC1
	6800	DC	76	105	0,1	23	19	18	21,4	15,3	AY(U)X-HR682M160DC1
	10000	DC	76	105	0,11	18	14	13	24,8	17,7	AY(U)X-HR103M160DC1
	15000	DF	76	145	0,12	13	10	10	33,3	23,8	AY(U)X-HR153M160DF1
	22000	DF	76	145	0,15	11	9	8	36,1	25,8	AY(U)X-HR223M160DF1
		EF	90	222	0,14	10	8	8	49,1	35,1	AY(U)G-HR223M160EF1
200	3300	BC	51	105	0,10	48	39	36	11,8	8,4	AY(U)X-HR332M200BC1
	4700	CC	63	105	0,10	34	27	25	16,0	11,4	AY(U)X-HR472M200CC1
		DC	76	105	0,09	30	24	23	18,8	13,4	AY(U)X-HR472M200DC1
	6800	DC	76	105	0,10	23	19	18	21,4	15,3	AY(U)X-HR682M200DC1
	10000	DF	76	145	0,11	18	14	13	28,4	20,3	AY(U)X-HR103M200DF1
	15000	DF	76	145	0,12	13	10	10	33,3	23,8	AY(U)X-HR153M200DF1
	22000	DF	76	145	0,12	9	7	7	40,3	28,8	AY(U)X-HR223M200DF1
		DK	76	165	0,12	9	7	7	42,7	30,5	AY(U)X-HR223M200DK1
	33000	DK	76	165	0,12	6	5	4	52,3	37,4	AY(U)X-HR333M200DK1

	Capacitance	Case	Diam	Height	Tan δ	ESRmax typ		Zmax	Iripple @100Hz		Ordering Code
	[uF]@100Hz		[mm]	[mm]	[%]@100Hz	[m Ω]@100Hz	[m Ω]@10KHz	[m Ω]@10KHz	[A]@55°C	[A]@85°C	(U) for mounting stud
250	2200	BB	51	83	0,09	65	52	49	9,2	6,5	AY(U)X-HR222M250BB1
		BC	51	105	0,08	58	46	43	10,8	7,7	AY(U)X-HR222M250BC1
	3300	BC	51	105	0,10	48	39	36	11,8	8,4	AY(U)X-HR332M250BC1
	3300	CC	63	105	0,09	43	35	33	14,1	10,1	AY(U)X-HR332M250CC1
	4700	DC	76	105	0,10	34	27	25	17,8	12,7	AY(U)X-HR472M250DC1
	6800	DC	76	105	0,10	23	19	18	21,4	15,3	AY(U)X-HR682M250DC1
	10000	DF	76	145	0,10	16	13	12	29,8	21,3	AY(U)X-HR103M250DF1
		EC	90	105	0,10	16	13	12	28,6	20,5	AY(U)G-HR103M250EC1
	15000	DF	76	145	0,10	11	8	8	36,5	26,1	AY(U)X-HR153M250DF1
350	3300	CC	63	105	0,09	43	35	33	14,1	10,1	AY(U)X-HR332M350CC1
		DC	76	105	0,08	39	31	29	16,7	11,9	AY(U)X-HR332M350DC1
	4700	DC	76	105	0,09	30	24	23	18,8	13,4	AY(U)X-HR472M350DC1
		DF	76	145	0,08	27	22	20	22,8	16,3	AY(U)X-HR472M350DF1
	6800	DF	76	145	0,08	19	15	14	27,5	19,6	AY(U)X-HR682M350DF1
		DJ	76	222	0,09	21	17	16	31,2	22,3	AY(U)X-HR682M350DJ1
		EC	90	105	0,11	26	21	19	22,5	16,1	AY(U)G-HR682M350EC1
	10000	DF	76	145	0,11	18	14	13	28,4	20,3	AY(U)X-HR103M350DF1
		DJ	76	222	0,10	16	13	12	35,9	25,6	AY(U)X-HR103M350DJ1
		EC	90	105	0,10	16	13	12	28,6	20,5	AY(U)G-HR103M350EC1
	15000	DF	76	145	0,10	11	8	8	36,5	26,1	AY(U)X-HR153M350DF1
		DJ	76	222	0,10	11	8	8	44,0	31,4	AY(U)X-HR153M350DJ1
		EF	90	145	0,12	13	10	10	36,6	26,2	AY(U)G-HR153M350EF1
		EJ	90	222	0,12	13	10	10	44,0	31,4	AY(U)G-HR153M350EJ1
	18000	EF	90	145	0,12	11	8	8	40,1	28,7	AY(U)G-HR183M350EF1
	22000	EJ	90	222	0,12	9	7	7	53,3	38,1	AY(U)G-HR223M350EJ1
	27000	EJ	90	222	0,12	7	6	5	59,0	42,2	AY(U)G-HR273M350EJ1
400	1500	BB	51	83	0,10	106	85	80	7,2	5,1	AY(U)X-HR152M400BB1
		BC	51	105	0,10	106	85	80	8,0	5,7	AY(U)X-HR152M400BC1
	2200	BC	51	105	0,10	72	58	54	9,6	6,9	AY(U)X-HR222M400BC1
		CC	63	105	0,09	65	52	49	11,5	8,2	AY(U)X-HR222M400CC1
		DC	76	105	0,08	58	46	43	13,6	9,7	AY(U)X-HR222M400DC1
	3300	CC	63	105	0,09	43	35	33	14,1	10,1	AY(U)X-HR332M400CC1
		DC	76	105	0,09	43	35	33	15,7	11,2	AY(U)X-HR332M400DC1
		DF	76	145	0,09	43	35	33	18,0	12,9	AY(U)X-HR332M400DF1
	4700	DC	76	105	0,10	34	27	25	17,8	12,7	AY(U)X-HR472M400DC1
		DF	76	145	0,09	30	24	23	21,5	15,4	AY(U)X-HR472M400DF1
	6800	DF	76	145	0,08	19	15	14	27,5	19,6	AY(U)X-HR682M400DF1
	10000	DJ	76	222	0,11	18	14	13	34,2	24,5	AY(U)X-HR103M400DJ1
		EF	90	145	0,11	18	14	13	31,2	22,3	AY(U)G-HR103M400EF1
	15000	EJ	90	222	0,08	8	7	6	53,9	38,5	AY(U)G-HR153M400EJ1
	18000	EJ	90	222	0,08	7	6	5	59,0	42,2	AY(U)G-HR183M400EJ1
	18000	EL	90	240	0,08	7	6	5	60,0	43,4	AY(U)G-HR183M400EL1

	Capacitance	Case	Diam	Height	Tan δ	ESRmax typ		Zmax	Iripple @100Hz		Ordering Code
	[uF]@100Hz		[mm]	[mm]	[%]@100Hz	[m Ω]@100Hz		[m Ω]@10KHz	[A]@55°C	[A]@85°C	(U) for mounting stud
450	1000	BB	51	83	0,12	191	153	143	5,4	3,8	AY(U)X-HR102M450BB1
	1500	BB	51	83	0,11	117	93	88	6,8	4,9	AY(U)X-HR152M450BB1
		BC	51	105	0,10	106	85	80	8,0	5,7	AY(U)X-HR152M450BC1
	2200	CC	63	105	0,12	87	69	65	10,0	7,1	AY(U)X-HR222M450CC1
		DC	76	105	0,11	80	64	60	11,6	8,3	AY(U)X-HR222M450DC1
	3300	DC	76	105	0,12	58	46	43	13,6	9,7	AY(U)X-HR332M450DC1
		DF	76	145	0,1	48	39	36	17,1	12,2	AY(U)X-HR332M450DF1
	4700	DF	76	145	0,12	41	33	30	18,6	13,3	AY(U)X-HR472M450DF1
		EC	90	105	0,11	37	30	28	18,7	13,4	AY(U)G-HR472M450EC1
	6800	DF	76	145	0,13	30	24	23	21,6	15,4	AY(U)X-HR682M450DF1
		DJ	76	222	0,12	28	22	21	27,0	19,3	AY(U)X-HR682M450DJ1
	10000	DJ	76	222	0,12	19	15	14	32,8	23,4	AY(U)X-HR103M450DJ1
		EJ	90	222	0,12	19	15	14	35,9	25,7	AY(U)G-HR103M450EJ1
500	15000	EJ	90	222	0,13	14	11	10	42,3	30,2	AY(U)G-HR153M450EJ1
	15000	EL	90	240	0,13	14	11	10	44,0	31,3	AY(U)G-HR153M450EL1
	1000	BC	51	105	0,13	207	166	155	5,7	4,1	AY(U)X-HR102M500BC1
	1500	DC	76	105	0,13	138	110	104	8,8	6,3	AY(U)X-HR152M500DC1
	2200	CC	63	105	0,13	94	75	71	9,6	6,9	AY(U)X-HR222M500CC1
		DC	76	105	0,13	94	75	71	10,7	7,6	AY(U)X-HR222M500DC1
		DF	76	145	0,13	94	75	71	12,3	8,8	AY(U)X-HR222M500DF1
	3300	DF	76	145	0,12	58	46	43	15,6	11,2	AY(U)X-HR332M500DF1
	3900	DF	76	145	0,12	49	39	37	17,0	12,1	AY(U)X-HR392M500DF1
	4400	DF	76	145	0,12	43	35	33	18,0	12,9	AY(U)X-HR442M500DF1
	4700	DF	76	145	0,12	41	33	30	18,6	13,3	AY(U)X-HR472M500DF1
	5600	DF	76	145	0,12	34	27	26	20,4	14,5	AY(U)X-HR562M500DF1
	6800	DJ	76	222	0,12	28	22	21	26,9	19,2	AY(U)X-HR682M500DJ1
	10000	EJ	90	222	0,12	19	15	14	35,8	25,6	AY(U)G-HR103M500EJ1
	10000	EL	90	240	0,12	19	15	14	36,2	26,0	AY(U)G-HR103M500EL1



Technical Drawing

Dimension, Quantity and Weight for Box

Case				Connections							Mounting Stud			Packaging	
Code	DxL (mm)	L1	h1	d1	d2	e	Terminal	Screw			Screw			Pcs Box	Weight Box (Kg).
							Code	Thread	Torque (Nm)	Length	d3	c	Torque (Nm)		
BB	51x83	89	13	13	18	22.2	X	M5	2,0	10	M12	16	10	30	5-7
BC	51x105	111	13	13	18	22.2	X	M5	2,0	10	M12	16	10	30	6-9
CC	63x105	111	16	13	18	28.6	X	M5	2,0	10	M12	16	10	20	6-8
CF	63x145	151	19	13	18	28.6	X	M5	2,0	10	M12	16	10	20	9-10
DC	76x105	111	19	13	18	31.8	X	M5	2,0	10	M12	16	10	12	6-8
DF	76x145	151	19	13	18	31.8	X	M5	2,0	10	M12	16	10	12	8-14
				18	23		G	M6	2,5						
DK	76x165	173	19	13	18	31.8	X	M5	2,0	10	M12	16	10	12	9-14
				18	23		G	M6	2,5						
DG	76x200	207	19	13	18	31.8	X	M5	2,0	10	M12	16	10	12	9-13
				18	23		G	M6	2,5						
DJ	76x222	227	19	13	18	31.8	X	M5	2,0	10	M12	16	10	8	9-12
				18	23		G	M6	2,5						
DL	76x240	245	19	13	18	31.8	X	M5	2,0	10	M12	16	10	12	9-13
				18	23		G	M6	2,5						
EC	90x105	111	19	18	23	31,8	G	M6	2,5	10	M12	16	10	6	7-9
EF	90x145	151	19	18	23	31,8	G	M6	2,5	10	M12	16	10	6	9-11
EG	90x200	207	19	18	23	31,8	G	M6	2,5	10	M12	16	10	6	9-11
EJ	90x222	227	19	18	23	31,8	G	M6	2,5	10	M12	16	10	6	8-12
EL	90x240	245	19	18	23	31,8	G	M6	2,5	10	M12	16	10	6	9-13

All dimensions in mm, torque in Nm, weight in kg



Parameters	U.M.	Symbol/Value	Notes
Expected lifetime	[hrs]	5.000	@rated voltage, temperature and ripple current
Climatic category		40/105/56	-40°C / +105°C / 85% Relative Humidity
Voltage	[V]	V_R	200 - 450V
Capacitance	[μF]	C	C_{10} rated value at t=0hrs
Capacitance tolerance	%	M = 20 %	Other capacitance on request as indicated in the data book
Series resistance	[mΩ]	ESR	ESR_{10} rated value at t=0hrs
Leakage Current	[mA]	$I_f = 0,004 \cdot C \cdot V$	I_{f10} rated value at t=0hrs
I Ripple	[A]	I_R	Ripple current @ rated parameters
		$I_t = K_f \cdot K_t \cdot I_R$	I_t ripple current at a given T
		K_f	Frequency Correlation Factor See table below
		K_t	Temperature Correlation Factor See table below
End of Life values		$\Delta C/C_{10} \leq 30\%$	
		$ESR \leq 3 \cdot ESR_{10}$	
		$I_f \leq I_{f10}$	
Surge Voltage	[V]	$V_{surge} = 1,1 \cdot V_R$	≤450V
		$V_{surge} = 1,05 \cdot V_R$	

Ripple Current Coefficient

Hz	50	100	120	200	300	400	500	1000
Kf	0.78	1.00	1.02	1.06	1.08	1.09	1.32	1.37

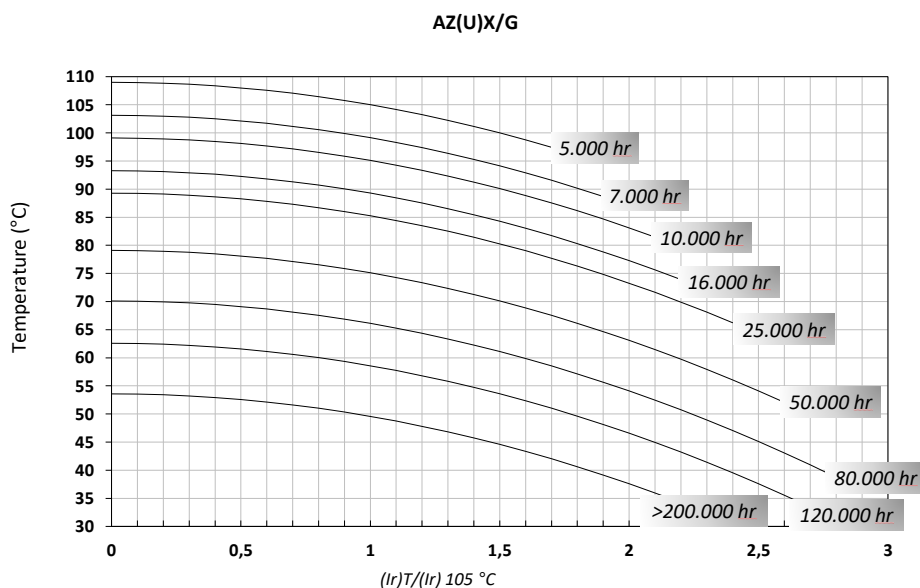
°C	40	55	65	75	85	95	105
Kt	2.50	2.40	2.20	2.00	1.80	1.30	1.00

Note: Superimposed alternating voltage summed to DC voltage must not exceed rated voltage, rated ripple current must not be exceeded and no reverse polarity is allowed

Ordering Code: Example – AZUX472M450DF1

AZ	(U)	X	472	M	450	DF	1
Series	U=mounting stud	Terminals	C with multiplying factor:	Tolerance	V_R	Size	1=sleeve 0=no sleeve
	Void=flat bottom		1=x10, 2=x100, 3=x1.000,				

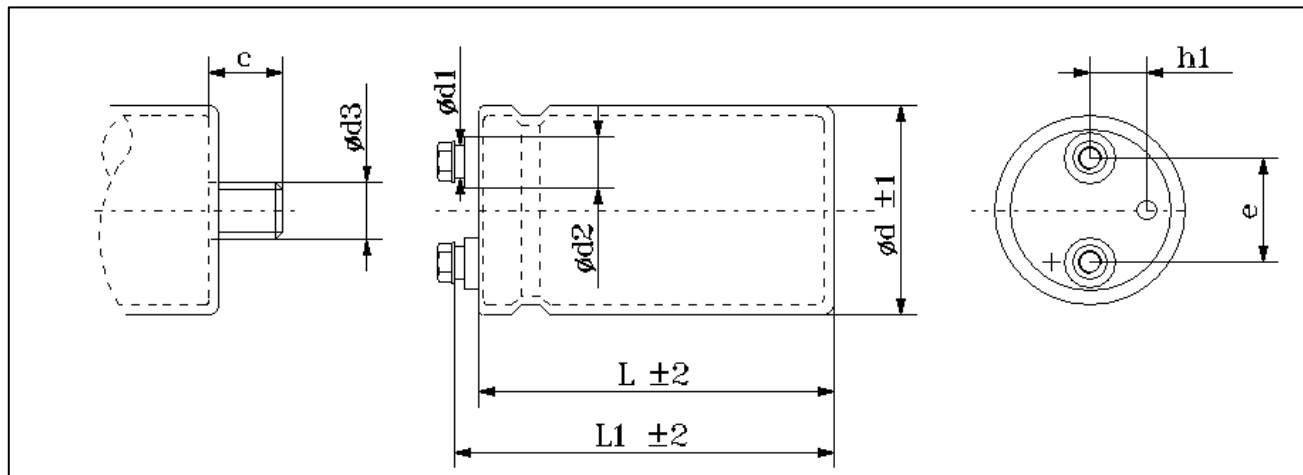
Expected Lifetime Vs Temperature and Ripple Current



	Capacitance	Case	Diam	Height	Tanδ	ESRmax typ		Zmax	Iripple @100Hz		Ordering Code
	[uF]@100Hz		[mm]	[mm]	[%]@100Hz	[mΩ]@100Hz	[mΩ]@10KHz		[A]@55°C	[A]@85°C	(U) for mounting stud
200	2200	BC	51	105	0,09	65	52	49	13,0	5,4	AZ(U)X222M200BC1
	3300	CC	63	105	0,09	43	35	33	17,9	7,5	AZ(U)X332M200CC1
	4700	CC	63	105	0,09	30	24	23	21,4	11,0	AZ(U)X472M200CC1
	4700	DC	76	105	0,09	30	23	23	23,9	10,0	AZ(U)X472M200DC1
	6800	DF	76	145	0,09	21	17	16	32,9	13,7	AZ(U)X682M200DF1
	10000	DF	76	145	0,09	14	11	13	39,9	16,6	AZ(U)X103M200DF1
250	2200	BC	51	105	0,07	51	41	38	16,3	6,8	AZ(U)X222M250BC1
	3300	BC	51	105	0,07	34	27	25	19,9	8,3	AZ(U)X332M250BC1
		CC	63	105	0,07	34	27	25	22,4	9,3	AZ(U)X332M250CC1
	4700	DC	76	105	0,07	24	19	18	29,8	12,4	AZ(U)X472M250DC1
		DF	76	145	0,07	24	19	18	34,3	14,3	AZ(U)X472M250DF1
	6800	DF	76	145	0,07	16	13	12	41,2	17,2	AZ(U)X682M250DF1
	10000	DF	76	145	0,07	11	9	8	50,0	20,8	AZ(U)X103M250DF1
		DJ	76	222	0,07	11	9	8	60,6	25,2	AZ(U)X103M250DJ1
	15000	DJ	76	222	0,07	7	6	6	74,2	30,9	AZ(U)X153M250DJ1
		EF	90	145	0,07	7	6	6	67,3	28,1	AZ(U)G153M250EF1
350	22000	EJ	90	222	0,07	5	4	4	98,5	41,0	AZ(U)G223M250EJ1
	1500	BC	51	105	0,06	64	51	48	14,8	6,2	AZ(U)X152M350BC1
	2200	CC	63	105	0,06	43	35	33	20,1	8,4	AZ(U)X222M350CC1
	3300	CC	63	105	0,06	29	23	22	24,6	10,3	AZ(U)X332M350CC1
		DC	76	105	0,06	29	23	22	27,4	11,4	AZ(U)X332M350DC1
	3900	DC	76	105	0,06	24	20	18	29,8	12,4	AZ(U)X392M350DC1
	4700	DC	76	105	0,06	20	16	15	32,7	13,6	AZ(U)X472M350DC1
		DF	76	145	0,06	20	16	1	37,6	15,7	AZ(U)X472M350DF1
	5600	DF	76	145	0,06	17	14	13	41,1	17,1	AZ(U)X562M350DF1
	6800	DF	76	145	0,06	14	11	11	45,3	18,9	AZ(U)X682M350DF1
		DJ	76	222	0,06	14	11	11	54,9	22,9	AZ(U)X682M350DJ1
	8200	DF	76	145	0,06	12	9	9	49,7	20,7	AZ(U)X822M350DF1
	10000	DJ	76	222	0,06	10	8	7	66,6	27,7	AZ(U)X103M350DJ1
		EF	90	145	0,06	10	8	7	60,4	25,2	AZ(U)G103M350EF1
	15000	EJ	90	222	0,06	6	5	5	89,4	37,2	AZ(U)G153M350EJ1
400	680	BC	51	105	0,06	141	112	105	9,9	4,1	AZ(U)X681M400BC1
	1000	BC	51	105	0,06	96	76	72	12,1	5,0	AZ(U)X102M400BC1
	1500	BC	51	105	0,06	64	51	48	14,8	6,2	AZ(U)X152M400BC1
	2200	CC	63	105	0,06	43	35	33	20,1	8,4	AZ(U)X222M400CC1
		DC	76	105	0,06	43	35	33	22,4	9,3	AZ(U)X222M400DC1
	3300	DC	76	105	0,06	29	23	22	27,4	11,4	AZ(U)X332M400DC1
		DF	76	145	0,06	29	23	22	31,5	13,1	AZ(U)X332M400DF1
	3900	DF	76	145	0,06	24	20	18	34,3	14,3	AZ(U)X392M400DF1
	4700	DF	76	145	0,06	20	16	15	37,6	15,7	AZ(U)X472M400DF1
	5600	DF	76	145	0,06	17	14	13	41,1	17,1	AZ(U)X562M400DF1
	6800	DF	76	145	0,06	14	11	11	45,3	18,9	AZ(U)X682M400DF1
		DJ	76	222	0,06	14	11	11	54,9	22,9	AZ(U)X682M400DJ1
	10000	EF	90	145	0,06	10	8	7	60,4	25,2	AZ(U)G103M400EF1
		DJ	76	222	0,06	10	8	7	66,6	27,7	AZ(U)X103M400DJ1
	15000	EJ	90	222	0,06	6	5	5	89,4	37,2	AZ(U)G153M400EJ1

	Capacitance	Case	Diam	Height	Tanδ	ESRmax typ		Zmax	Iripple @100Hz		Ordering Code
	[uF]@100Hz		[mm]	[mm]	[%]@100Hz	[mΩ]@100Hz		[mΩ]@10KHz	[A]@55°C	[A]@85°C	(U) for mounting stud
450	1000	BC	51	105	0,06	96	76	72	12,1	5,0	AZ(U)X102M450BC1
	1500	CC	63	105	0,06	64	51	48	16,6	6,9	AZ(U)X152M450CC1
	2200	DC	76	105	0,06	43	35	33	22,4	9,3	AZ(U)X222M450DC1
		DF	76	145	0,06	43	35	33	25,8	10,7	AZ(U)X222M450DF1
	3300	DF	76	145	0,06	29	23	22	31,5	13,1	AZ(U)X332M450DF1
	3900	DF	76	145	0,06	24	20	18	34,3	14,3	AZ(U)X392M450DF1
	4700	DF	76	145	0,06	20	16	15	37,6	15,7	AZ(U)X472M450DF1
	5600	DF	76	145	0,06	17	14	13	41,1	17,1	AZ(U)X562M450DF1
	6800	DJ	76	222	0,06	14	11	11	54,9	22,9	AZ(U)X682M450DJ1
		EF	90	145	0,06	14	11	11	49,8	20,8	AZ(U)G682M450EF1
	10000	DJ	76	222	0,06	10	8	7	66,6	27,7	AZ(U)X103M450DJ1
		EG	90	200	0,06	10	8	7	69,6	29,0	AZ(U)G103M450EG1
		EJ	90	222	0,06	10	8	7	73,0	30,4	AZ(U)G103M450EJ1
	12000	EL	90	240	0,06	8	6	6	82,8	34,5	AZ(U)G123M450EL1



Technical Drawing

Dimension, Quantity and Weight for Box

Case				Connections							Mounting Stud			Packaging	
Code	DxL (mm)	L1	h1	d1	d2	e	Terminal	Screw			Screw			Pcs Box	Weight Box (Kg).
							Code	Thread	Torque (Nm)	Length	d3	c	Torque (Nm)		
BB	51x83	89	13	13	18	22.2	X	M5	2,0	10	M12	16	10	30	5-7
BC	51x105	111	13	13	18	22.2	X	M5	2,0	10	M12	16	10	30	6-9
CC	63x105	111	16	13	18	28.6	X	M5	2,0	10	M12	16	10	20	6-8
CF	63x145	151	19	13	18	28.6	X	M5	2,0	10	M12	16	10	20	9-10
DC	76x105	111	19	13	18	31.8	X	M5	2,0	10	M12	16	10	12	6-8
DF	76x145	151	19	13	18	31.8	X	M5	2,0	10	M12	16	10	12	8-14
				18	23		G	M6	2,5						
DK	76x165	173	19	13	18	31.8	X	M5	2,0	10	M12	16	10	12	9-14
				18	23		G	M6	2,5						
DG	76x200	207	19	13	18	31.8	X	M5	2,0	10	M12	16	10	12	9-13
				18	23		G	M6	2,5						
DJ	76x222	227	19	13	18	31.8	X	M5	2,0	10	M12	16	10	8	9-12
				18	23		G	M6	2,5						
DL	76x240	245	19	13	18	31.8	X	M5	2,0	10	M12	16	10	12	9-13
				18	23		G	M6	2,5						
EC	90x105	111	19	18	23	31,8	G	M6	2,5	10	M12	16	10	6	7-9
EF	90x145	151	19	18	23	31,8	G	M6	2,5	10	M12	16	10	6	9-11
EG	90x200	207	19	18	23	31,8	G	M6	2,5	10	M12	16	10	6	9-11
EJ	90x222	227	19	18	23	31,8	G	M6	2,5	10	M12	16	10	6	8-12
EL	90x240	245	19	18	23	31,8	G	M6	2,5	10	M12	16	10	6	9-13

All dimensions in mm, torque in Nm, weight in kg

Parameters	U.M.	Symbol/Value	Notes
Expected lifetime	[hrs]	5.000	@rated voltage, temperature and ripple current
Climatic category		40/105/56	-40°C / +105°C./ 85% Relative Humidity
Voltage	[V]	V_R	200-450
Capacitance	[μF]	C	C_{10} rated value at t=0hrs
Capacitance tolerance	%	M = 20 %	Other capacitance on request as indicated in the data book
Series resistance	[mΩ]	ESR	ESR_{10} rated value at t=0hrs
Leakage Current	[mA]	$I_f = 0,004 \cdot C \cdot V$	I_{f10} rated value at t=0hrs
I Ripple	[A]	I_R	Ripple current @ rated parameters
		$I_t = K_f \cdot K_t \cdot I_R$	I_t ripple current at a given T
		K_f	Frequency Correlation Factor See table below
		K_t	Temperature Correlation Factor See table below
End of Life values		$\Delta C/C_{10} \leq 30\%$	
		$ESR \leq 3 \cdot ESR_{10}$	
		$I_f \leq I_{f10}$	
Surge Voltage	[V]	$V_{surge} = 1,1 \cdot V_R$	≤450V
		$V_{surge} = 1,05 \cdot V_R$	

Ripple Current Coefficient

	Hz	50	100	300	400	500	>1000
Kf	V>160	0.88	1.00	1.20	1.25	1.35	1.40

°C	50	65	75	85	95	105
Kt	2.40	2.20	2.10	1.80	1.30	1.00

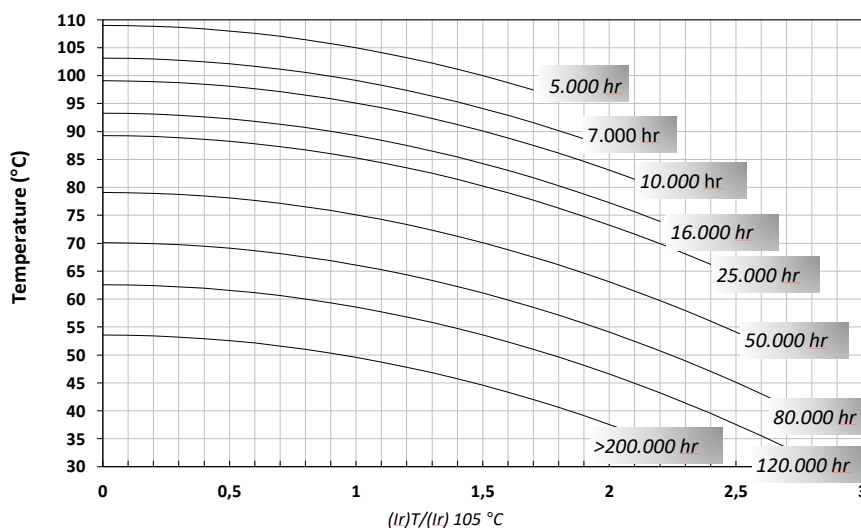
Note: Superimposed alternating voltage summed to DC voltage must not exceed rated voltage, rated ripple current must not be exceeded and no reverse polarity is allowed

Ordering Code: Example – AZC471M450NC1

AZC	471	M	450	NC	1
Series	C with multiplying factor: 1=x10, 2=x100, 3=x1.000,	Tolerance	V_R	Size	1=sleeve 0=no sleeve

Expected Lifetime Vs Temperature and Ripple Current

AZC - AZS

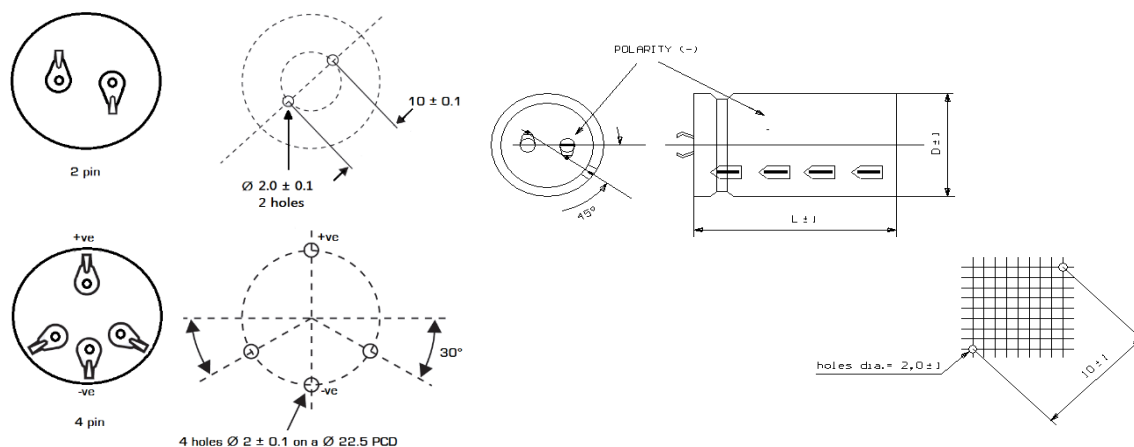


	Capacitance	Case	Diam	Height	Tanδ	ESRmax typ		Zmax	Iripple @100Hz		Ordering Code
	[μF]@100Hz		[mm]	[mm]	[%]@100Hz	[mΩ]@100Hz	[mΩ]@10KHz	[mΩ]@10KHz	[A]@85°C	[A]@105°C	*= C, 2 Pins S, 4 Pins
200	470	MB	30	40	0,10	271	217	203	3,9	1,6	AZ*471M200MB1
	680	MB	30	40	0,10	187	150	141	4,7	1,9	AZ*681M200MB1
	1000	MC	30	50	0,10	127	102	96	6,2	2,6	AZ*102M200MC1
		NB	35	40	0,10	127	102	96	6,2	2,6	AZ*102M200NB1
	1500	NC	35	50	0,10	85	68	64	8,3	3,5	AZ*152M200NC1
	2200	NE	35	75	0,10	58	46	43	12,0	5,0	AZ*222M200NE1
		QC	45	50	0,10	58	46	43	11,6	4,8	AZ*222M200QC1
	3300	PG	40	100	0,10	39	31	29	18,0	7,5	AZ*332M200PG1
		QE	45	75	0,10	39	31	29	16,9	7,0	AZ*332M200QE1
	3900	QG	45	100	0,10	33	26	24	20,9	8,7	AZ*392M200QG1
250	470	MB	30	40	0,10	271	217	203	3,9	1,6	AZ*471M250MB1
	680	MC	30	50	0,10	187	150	141	5,1	2,1	AZ*681M250MC1
		NB	35	40	0,10	187	150	141	5,1	2,1	AZ*681M250NB1
	1000	NB	35	40	0,10	127	102	96	6,2	2,6	AZ*102M250NB1
		NC	35	50	0,10	127	102	96	6,8	2,8	AZ*102M250NC1
	1500	NE	35	75	0,10	85	68	64	9,9	4,1	AZ*152M250NE1
		PC	40	50	0,10	85	68	64	9,0	3,7	AZ*152M250PC1
		PE	40	75	0,10	85	68	64	10,7	4,4	AZ*152M250PE1
	2200	PG	40	100	0,10	58	46	43	14,7	6,1	AZ*222M250PG1
400	220	MB	30	40	0,10	579	347	434	3,8	1,6	AZ*221M400MB1
	330	MB	30	40	0,10	386	232	290	4,7	1,9	AZ*331M400MB1
	470	MC	30	50	0,10	271	163	203	6,1	2,6	AZ*471M400MC1
		NB	35	40	0,10	271	163	203	6,1	2,5	AZ*471M400NB1
		NC	35	50	0,10	271	163	203	6,7	2,8	AZ*471M400NC1
	560	NC	35	50	0,10	227	136	171	7,3	3,1	AZ*561M400NC1
	680	NC	35	50	0,10	187	112	141	8,1	3,4	AZ*681M400NC1
		NN	35	60	0,10	187	112	141	8,7	3,6	AZ*681M400NN1
		NE	35	75	0,10	187	112	141	9,6	4,0	AZ*681M400NE1
		PC	40	50	0,10	187	112	141	8,7	3,6	AZ*681M400PC1
	820	NN	35	60	0,10	155	93	117	9,6	4,0	AZ*821M400NN1
		PN	40	60	0,10	155	93	117	10,3	4,3	AZ*821M400PN1



	Capacitance	Case	Diam	Height	Tanδ	ESRmax typ		Zmax	Iripple @100Hz		Ordering Code
	[μF]@100Hz		[mm]	[mm]	[%]@100Hz	[mΩ]@100Hz	[mΩ]@10KHz	[mΩ]@10KHz	[A]@85°C	[A]@105°C	*= C, 2 Pins S, 4 Pins
400	1000	NN	35	60	0,10	127	76	96	10,6	4,4	AZ*102M400NN1
		NE	35	75	0,10	127	76	96	11,7	4,9	AZ*102M400NE1
		PN	40	60	0,10	127	76	96	11,4	4,8	AZ*102M400PN1
		PE	40	75	0,10	127	76	96	12,6	5,2	AZ*102M400PE1
		QC	45	50	0,10	127	76	96	11,3	4,7	AZ*102M400QC1
		QN	45	60	0,10	127	76	96	12,2	5,1	AZ*102M400QN1
	1200	PE	40	75	0,10	106	64	80	13,8	5,7	AZ*122M400PE1
		PG	40	100	0,10	106	64	80	15,7	6,5	AZ*122M400PG1
	1500	PG	40	100	0,10	85	51	64	17,5	7,3	AZ*152M400PG1
		QN	45	60	0,10	85	51	64	15,0	6,2	AZ*152M400QN1
	1500	QE	45	75	0,10	85	51	64	16,5	6,9	AZ*152M400QE1
	1800	QG	45	100	0,10	71	42	53	20,5	8,5	AZ*182M400QG1
	2200	QG	45	100	0,10	58	35	43	22,6	9,4	AZ*222M400QG1
	3300	RG	50	100	0,10	39	23	29	29,4	12,2	AZ*332M400RG1
450	220	MB	30	40	0,10	579	347	434	3,8	1,6	AZ*221M450MB1
	330	MC	30	50	0,10	386	232	290	5,1	2,1	AZ*331M450MC1
		NB	35	40	0,10	386	232	290	5,1	2,1	AZ*331M450NB1
	470	NB	35	40	0,10	271	163	203	6,1	2,5	AZ*471M450NB1
		NC	35	50	0,10	271	163	203	6,7	2,8	AZ*471M450NC1
	560	NC	35	50	0,10	227	136	171	7,3	3,1	AZ*561M450NC1
		NE	35	75	0,10	227	136	171	8,7	3,6	AZ*561M450NE1
		PC	40	50	0,10	227	136	171	7,9	3,3	AZ*561M450PC1
	680	NC	35	50	0,10	187	112	141	8,1	3,4	AZ*681M450NC1
		NN	35	60	0,10	187	112	141	8,7	3,6	AZ*681M450NN1
		NE	35	75	0,10	187	112	141	9,6	4,0	AZ*681M450NE1
		PE	40	75	0,10	187	112	141	10,4	4,3	AZ*681M450PE1
		QC	45	50	0,10	187	112	141	9,3	3,9	AZ*681M450QC1
	820	NN	35	60	0,10	155	93	117	9,6	4,0	AZ*821M450NN1
		NE	35	75	0,10	155	93	117	10,6	4,4	AZ*821M450NE1
	1000	PN	40	60	0,10	127	76	96	11,4	4,8	AZ*102M450PN1
		PE	40	75	0,10	127	76	96	12,6	5,2	AZ*102M450PE1
		PG	40	100	0,10	127	76	96	14,3	6,0	AZ*102M450PG1
		QE	45	75	0,10	127	76	96	13,4	5,6	AZ*102M450QE1
	1200	PG	40	100	0,10	106	64	80	15,7	6,5	AZ*122M450PG1
	1500	QG	45	100	0,10	85	51	64	18,7	7,8	AZ*152M450QG1
	2200	QG	45	100	0,10	58	35	43	22,6	9,4	AZ*272M450RG1
	2700	RG	50	100	0,10	47	28	35	26,6	11,1	AZ*272M450RG1
	4700	RH	50	105	0,10	27	16	20	35,1	14,6	AZ*472M450RH1



Technical Drawing

Dimension, Quantity and Weight for Box

Case		Connections			Packaging	
Code	DxL (mm)	PINS			Pcs/Box	Weight/Box (Kg)
		AZC	AZS	Lenght		
MB	30x40	2		6.3	254	4-6
MC	30x50	2		6.3	254	4-6
NB	35x40	2	4	6.3	100	6-8
NC	35x50	2	4	6.3	100	6-8
NN	35x60	2	4	6.3	100	5-7
NE	35x75	2	4	6.3	50	6-8
PB	40x40	2	4	6.3	126	9-10
PC	40x50	2	4	6.3	126	9-10
PN	40x60	2	4	6.3	63	9-10
PE	40x75		4	6.3	63	7-9
PG	40x100		4	6.3	63	9-10
PH	40x105		4	6.3	48	8-10
QC	45x50		4	6.3	96	6-8
QN	45x60		4	6.3	48	6-8
QE	45x75		4	6.3	48	7-9
QG	45x100		4	6.3	48	8-10
QH	45x105		4	6.3	48	8-10
RE	50x75		4	6.3	48	8-10
RG	50x100		4	6.3	48	8-10
RH	50x105		4	6.3	48	8-10

All dimensions in mm, torque in Nm, weight in kg



Parameters	U.M.	Symbol/Value	Notes
Expected lifetime	[hrs]	5.000	@rated voltage, temperature and ripple current
Climatic category		40/105/56	-40°C / +105°C./ 85% Relative Humidity
Voltage	[V]	V_R	200-450
Capacitance	[μF]	C	C_{10} rated value at t=0hrs
Capacitance tolerance	%	M = 20 %	Other capacitance on request as indicated in the data book
Series resistance	[mΩ]	ESR	ESR_{10} rated value at t=0hrs
Leakage Current	[mA]	$I_f = 0,004 \cdot C \cdot V$	I_{f10} rated value at t=0hrs
I Ripple	[A]	I_R	Ripple current @ rated parameters
		$I_t = K_f \cdot K_t \cdot I_R$	I_t ripple current at a given T
		K_f	Frequency Correlation Factor See table below
		K_t	Temperature Correlation Factor See table below
End of Life values		$\Delta C/C_{10} \leq 30\%$	
		$ESR \leq 3 \cdot ESR_{10}$	
		$I_f \leq I_{f10}$	
Surge Voltage	[V]	$V_{surge} = 1,1 \cdot V_R$	≤450V
		$V_{surge} = 1,05 \cdot V_R$	

Ripple Current Coefficient

	Hz	50	100	300	400	500	>1000
Kf	V>160	0.88	1.00	1.20	1.25	1.35	1.40

°C	50	65	75	85	95	105
Kt	2.40	2.20	2.10	1.80	1.30	1.00

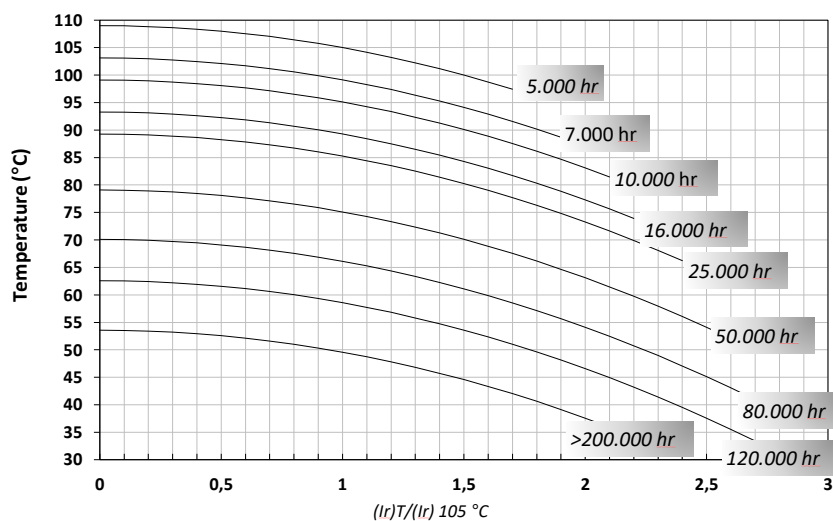
Note: Superimposed alternating voltage summed to DC voltage must not exceed rated voltage, rated ripple current must not be exceeded and no reverse polarity is allowed

Ordering Code: Example – AZF471M450NC1

AZF	471	M	450	NC	1
Series	C with multiplying factor:	Tolerance	V_R	Size	1=sleeve 0=no sleeve
	1=x10, 2=x100, 3=x1.000,				

Expected Lifetime Vs Temperature and Ripple Current

AZF

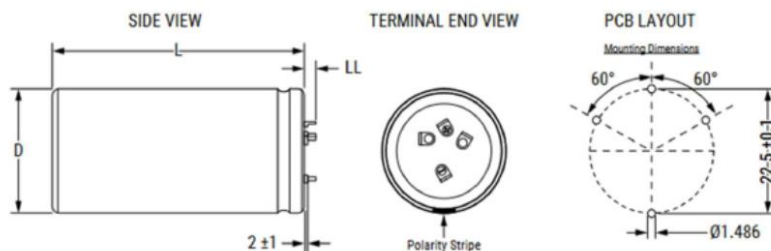


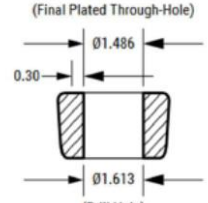
	Capacitance	Case	Diam	Height	Tanδ	ESRmax typ		Zmax	Iripple @100Hz		Ordering Code
	[μF]@100Hz		[mm]	[mm]	[%]@100Hz	[mΩ]@100Hz	[mΩ]@10KHz	[mΩ]@10KHz	[A]@85°C	[A]@105°C	AZF
200	1000	NB	35	40	0,10	127	102	96	6,2	2,6	AZF102M200NB1
	1500	NC	35	50	0,10	85	68	64	8,3	3,5	AZF152M200NC1
	2200	NE	35	75	0,10	58	46	43	12,0	5,0	AZF222M200NE1
		QC	45	50	0,10	58	46	43	11,6	4,8	AZF222M200QC1
	3300	PG	40	100	0,10	39	31	29	18,0	7,5	AZF332M200PG1
		QE	45	75	0,10	39	31	29	16,9	7,0	AZF332M200QE1
	3900	QG	45	100	0,10	33	26	24	20,9	8,7	AZF392M200QG1
250	680	NB	35	40	0,10	187	150	141	5,1	2,1	AZF681M250NB1
	1000	NB	35	40	0,10	127	102	96	6,2	2,6	AZF102M250NB1
		NC	35	50	0,10	127	102	96	6,8	2,8	AZF102M250NC1
	1500	NE	35	75	0,10	85	68	64	9,9	4,1	AZF152M250NE1
		PC	40	50	0,10	85	68	64	9,0	3,7	AZF152M250PC1
		PE	40	75	0,10	85	68	64	10,7	4,4	AZF152M250PE1
	2200	PG	40	100	0,10	58	46	43	14,7	6,1	AZF222M250PG1
400	220	MB	30	40	0,10	579	347	434	3,8	1,6	AZF221M400MB1
	330	MB	30	40	0,10	386	232	290	4,7	1,9	AZF331M400MB1
	470	MC	30	50	0,10	271	163	203	6,1	2,6	AZF471M400MC1
		NB	35	40	0,10	271	163	203	6,1	2,5	AZF471M400NB1
		NC	35	50	0,10	271	163	203	6,7	2,8	AZF471M400NC1
	560	NC	35	50	0,10	227	136	171	7,3	3,1	AZF561M400NC1
	680	NC	35	50	0,10	187	112	141	8,1	3,4	AZF681M400NC1
		NN	35	60	0,10	187	112	141	8,7	3,6	AZF681M400NN1
		NE	35	75	0,10	187	112	141	9,6	4,0	AZF681M400NE1
		PC	40	50	0,10	187	112	141	8,7	3,6	AZF681M400PC1
	820	NN	35	60	0,10	155	93	117	9,6	4,0	AZF821M400NN1
		PN	40	60	0,10	155	93	117	10,3	4,3	AZF821M400PN1



	Capacitance	Case	Diam	Height	Tanδ	ESRmax typ		Zmax	Iripple @100Hz		Ordering Code
	[μF]@100Hz		[mm]	[mm]	[%]@100Hz	[mΩ]@100Hz	[mΩ]@10KHz	[mΩ]@10KHz	[A]@85°C	[A]@105°C	AZF
400	1000	NN	35	60	0,10	127	76	96	10,6	4,4	AZF102M400NN1
		NE	35	75	0,10	127	76	96	11,7	4,9	AZF102M400NE1
		PN	40	60	0,10	127	76	96	11,4	4,8	AZF102M400PN1
		PE	40	75	0,10	127	76	96	12,6	5,2	AZF102M400PE1
		QC	45	50	0,10	127	76	96	11,3	4,7	AZF102M400QC1
		QN	45	60	0,10	127	76	96	12,2	5,1	AZF102M400QN1
	1200	PE	40	75	0,10	106	64	80	13,8	5,7	AZF122M400PE1
		PG	40	100	0,10	106	64	80	15,7	6,5	AZF122M400PG1
	1500	PG	40	100	0,10	85	51	64	17,5	7,3	AZF152M400PG1
		QN	45	60	0,10	85	51	64	15,0	6,2	AZF152M400QN1
	1500	QE	45	75	0,10	85	51	64	16,5	6,9	AZF152M400QE1
	1800	QG	45	100	0,10	71	42	53	20,5	8,5	AZF182M400QG1
	2200	QG	45	100	0,10	58	35	43	22,6	9,4	AZF222M400QG1
	3300	RG	50	100	0,10	39	23	29	29,4	12,2	AZF332M400RG1
450	330	NB	35	40	0,10	386	232	290	5,1	2,1	AZF331M450NB1
	470	NB	35	40	0,10	271	163	203	6,1	2,5	AZF471M450NB1
		NC	35	50	0,10	271	163	203	6,7	2,8	AZF471M450NC1
	560	NC	35	50	0,10	227	136	171	7,3	3,1	AZF561M450NC1
		NE	35	75	0,10	227	136	171	8,7	3,6	AZF561M450NE1
		PC	40	50	0,10	227	136	171	7,9	3,3	AZF561M450PC1
	680	NC	35	50	0,10	187	112	141	8,1	3,4	AZF681M450NC1
		NN	35	60	0,10	187	112	141	8,7	3,6	AZF681M450NN1
		NE	35	75	0,10	187	112	141	9,6	4,0	AZF681M450NE1
		PE	40	75	0,10	187	112	141	10,4	4,3	AZF681M450PE1
		QC	45	50	0,10	187	112	141	9,3	3,9	AZF681M450QC1
	820	NN	35	60	0,10	155	93	117	9,6	4,0	AZF821M450NN1
		NE	35	75	0,10	155	93	117	10,6	4,4	AZF821M450NE1
	1000	PN	40	60	0,10	127	76	96	11,4	4,8	AZF102M450PN1
		PE	40	75	0,10	127	76	96	12,6	5,2	AZF102M450PE1
		PG	40	100	0,10	127	76	96	14,3	6,0	AZF102M450PG1
		QE	45	75	0,10	127	76	96	13,4	5,6	AZF102M450QE1
	1200	PG	40	100	0,10	106	64	80	15,7	6,5	AZF122M450PG1
	1500	QG	45	100	0,10	85	51	64	18,7	7,8	AZF152M450QG1
	2200	QG	45	100	0,10	58	35	43	22,6	9,4	AZF272M450RG1
	2700	RG	50	100	0,10	47	28	35	26,6	11,1	AZF272M450RG1
	4700	RH	50	105	0,10	27	16	20	35,1	14,6	AZF472M450RH1



Technical Drawing


PCB Thickness: 1.57 mm Minimum		
DRILL	Ø1.613 ± 0.025	
COPPER THICKNESS	0.025 minimum	
FINAL PLATED THROUGH-HOLE DIAMETER	Ø1.486 ± 0.076	
Pin Insertion Force: 125 N (28 lbf) maximum Pin Retention Force: 62 N (14 lbf) minimum		

Vibrations Tests				Requirements
D ≤ 40 mm	0.75 mm displacement amplitude or 10 G maximum acceleration. Vibration applied for three directions 2-hour sessions at 10 – 500 Hz (Capacitor clamped by body)	D > 40 mm	0.35 mm displacement amplitude or 5 G maximum acceleration. Vibration applied for three directions 0.5-hour sessions at 10 – 55 Hz (Capacitor clamped by body)	No leakage of electrolyte or other visible damage. Deviations in capacitance from initial measurements must not exceed Δ C/C ± 5%

Dimension, Quantity and Weight for Box

Case		Connections		Packaging	
Code	DxL (mm)	PINS		Code	DxL (mm)
		AZF	Lenght		
NB	35x40	4	6.3	100	6-8
NC	35x50	4	6.3	100	6-8
NN	35x60	4	6.3	100	5-7
NE	35x75	4	6.3	50	6-8
PB	40x40	4	6.3	126	9-10
PC	40x50	4	6.3	126	9-10
PN	40x60	4	6.3	63	9-10
PE	40x75	4	6.3	63	7-9
PG	40x100	4	6.3	63	9-10
PH	40x105	4	6.3	63	9-10
QC	45x50	4	6.3	96	6-8
QN	45x60	4	6.3	48	6-8
QE	45x75	4	6.3	48	7-9
QG	45x100	4	6.3	48	8-10
QH	45x105	4	6.3	48	8-10
RE	50x75	4	6.3	48	8-10
RG	45x100	4	6.3	48	8-10
RH	45x105	4	6.3	48	8-10

All dimensions in mm, torque in Nm, weight in kg

Parameters	U.M.	Symbol/Value	Notes
Expected lifetime	[hrs]	5.000	@rated voltage, temperature and ripple current
Climatic category		40/105/56	-40°C / +105°C./ 85% Relative Humidity
Voltage	[V]	V_R	200 - 450V
Capacitance	[μF]	C	C_{10} rated value at t=0hrs
Capacitance tolerance	%	M = 20 %	Other capacitance on request as indicated in the data book
Series resistance	[mΩ]	ESR	ESR_{10} rated value at t=0hrs
Leakage Current	[mA]	$I_f = 0,004 \cdot C \cdot V$	I_{f10} rated value at t=0hrs
I Ripple	[A]	I_R	Ripple current @ rated parameters
		$I_t = K_f \cdot K_t \cdot I_R$	I_t ripple current at a given T
		K_f	Frequency Correlation Factor See table below
		K_t	Temperature Correlation Factor See table below
End of Life values		$\Delta C/C_{10} \leq 30\%$	
		$ESR \leq 3 \cdot ESR_{10}$	
		$I_f \leq I_{f10}$	
Surge Voltage	[V]	$V_{surge} = 1,1 \cdot V_R$	≤450V
		$V_{surge} = 1,05 \cdot V_R$	

Ripple Current Coefficient

	Hz	50	100	300	400	500	>1000
Kf	V>160	0.88	1.00	1.20	1.25	1.35	1.40

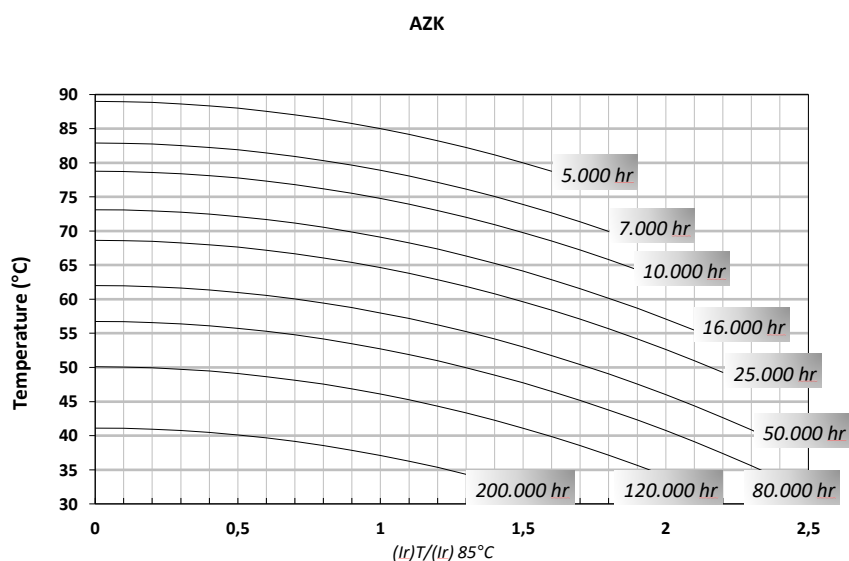
°C	50	65	75	85	95	105
Kt	2.40	2.20	2.10	1.80	1.30	1.00

Note: Superimposed alternating voltage summed to DC voltage must not exceed rated voltage, rated ripple current must not be exceeded and no reverse polarity is allowed

Ordering Code: Example – AZK681M450NB1

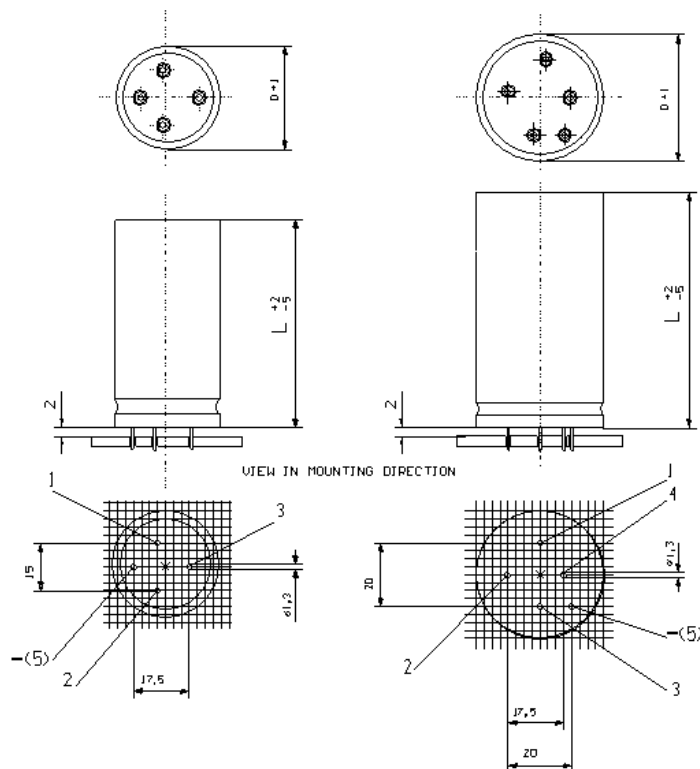
AZK	681	M	450	NB	1
Series	C with multiplying factor:	Tolerance	V_R	Size	1=sleeve 0=no sleeve
	1=x10, 2=x100, 3=x1.000,				

Expected Lifetime Vs Temperature and Ripple Current



	Capacitance	Case	Diam	Height	Tanδ	ESRmax typ		Zmax	Iripple @100Hz		Ordering Code
	[μF]@100Hz		[mm]	[mm]	[%]@100Hz	[mΩ]@100Hz	[mΩ]@10KHz	[mΩ]@10KHz	[A]@85°C	[A]@105°C	AZK
200	470	NB	35	40	0,10	271	217	203	3,2	1,8	AZK471M200NB1
	680	NC	35	50	0,10	187	150	141	4,2	2,3	AZK681M200NC1
	1000	NC	35	50	0,10	127	102	96	5,1	2,8	AZK102M200NC1
	1500	NE	35	75	0,10	85	68	64	7,4	4,1	AZK152M200NE1
		PC	40	50	0,10	85	68	64	6,7	3,7	AZK152M200PC1
	2200	PE	40	75	0,10	58	46	43	11,0	6,1	AZK222M200PE1
	3300	PG	40	100	0,10	39	31	29	13,5	7,5	AZK332M200PG1
250	470	NB	35	40	0,10	271	217	203	2,9	1,6	AZK471M250NB1
	680	NB	35	40	0,10	187	150	141	3,8	2,1	AZK681M250NB1
	1000	PC	40	50	0,10	127	102	96	5,5	3,1	AZK102M250PC1
	1500	PE	40	75	0,10	85	68	64	8,0	4,4	AZK152M250PE1
	2200	PG	40	100	0,10	58	46	43	11,0	6,1	AZK222M250PG1
400	330	NB	35	40	0,10	386	309	290	2,7	1,5	AZK331M400NB1
	470	NC	35	50	0,10	271	217	203	3,2	1,8	AZK471M400NC1
	680	NE	35	75	0,10	187	150	141	4,1	2,3	AZK681M400NE1
		PC	40	50	0,10	187	150	141	4,2	2,3	AZK681M400PC1
	1000	NE	35	75	0,10	127	102	96	6,1	3,4	AZK102M400NE1
		PE	40	75	0,10	127	102	96	5,1	2,8	AZK102M400PE1
		PG	40	100	0,10	127	102	96	5,5	3,1	AZK102M400PG1
	1500	PG	40	100	0,10	85	68	64	8,0	4,4	AZK152M400PG1
450	220	NB	35	40	0,10	579	463	434	2,0	1,1	AZK221M450NB1
	330	NC	35	50	0,10	386	309	290	2,9	1,6	AZK331M450NC1
	470	NC	35	50	0,10	271	217	203	3,5	1,9	AZK471M450NC1
	560	PC	40	50	0,10	227	182	171	4,1	2,3	AZK561M450PC1
		NE	35	75	0,10	227	182	171	4,5	2,5	AZK561M450NE1
	680	NE	35	75	0,10	187	150	141	5,0	2,8	AZK681M450NE1
		PE	40	75	0,10	187	150	141	5,4	3,0	AZK681M450PE1
	1000	PG	40	100	0,10	127	102	96	7,4	4,1	AZK102M450PG1
	1200	PG	40	100	0,10	106	85	80	8,1	4,5	AZK122M450PG1



Technical Drawing

Dimension, Quantity and Weight for Box

Case		Connections			Packaging	
Code	DxL (mm)	PINS			Code	DxL (mm)
		AZK		Lenght		
NB	35x40	4		6.3	100	6-8
NC	35x50	4		6.3	100	6-8
NN	35x60	4		6.3	100	5-7
NE	35x75	4		6.3	50	6-8
PB	40x40		5	6.3	126	9-10
PC	40x50		5	6.3	126	9-10
PN	40x60		5	6.3	63	9-10
PE	40x75		5	6.3	63	7-9
PG	40x100		5	6.3	63	9-10

All dimensions in mm, torque in Nm, weight in kg



Parameters	U.M.	Symbol/Value	Notes
Expected lifetime	[hrs]	5.000	@rated voltage, temperature and ripple current
Climatic category		40/105/56	-40°C / +105°C./ 85% Relative Humidity
Voltage	[V]	V_R	200-450
Capacitance	[μF]	C	C_{10} rated value at t=0hrs
Capacitance tolerance	%	M = 20 %	Other capacitance on request as indicated in the data book
Series resistance	[mΩ]	ESR	ESR_{10} rated value at t=0hrs
Leakage Current	[mA]	$I_f = 0,004 \cdot C \cdot V$	I_{f10} rated value at t=0hrs
I Ripple	[A]	I_R	Ripple current @ rated parameters
		$I_t = K_f \cdot K_t \cdot I_R$	I_t ripple current at a given T
		K_f	Frequency Correlation Factor See table below
		K_t	Temperature Correlation Factor See table below
End of Life values		$\Delta C/C_{10} \leq 30\%$	
		$ESR \leq 3 \cdot ESR_{10}$	
		$I_f \leq I_{f10}$	
Surge Voltage	[V]	$V_{surge} = 1,1 \cdot V_R$	$\leq 450V$
		$V_{surge} = 1,05 \cdot V_R$	

Ripple Current Coefficient

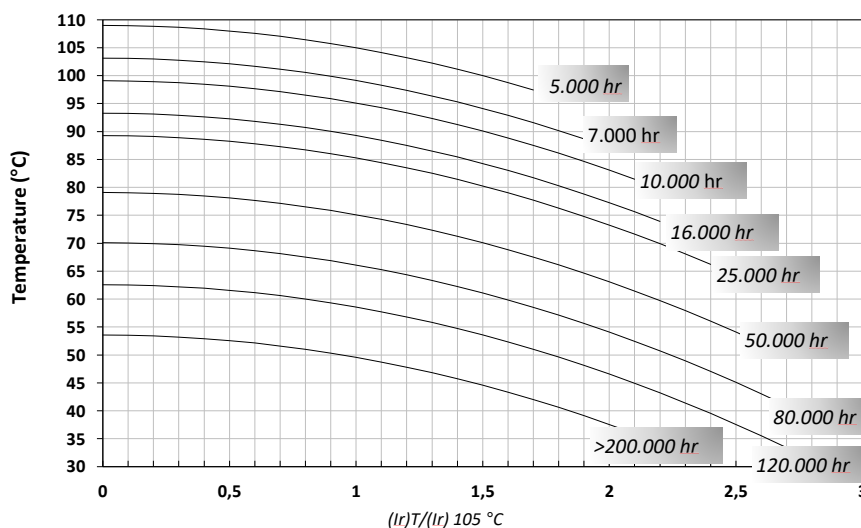
	Hz	50	100	300	400	500	>1000
Kf	V>160	0.88	1.00	1.20	1.25	1.35	1.40

°C	50	65	75	85	95	105
Kt	2.40	2.20	2.10	1.80	1.30	1.00

Note: Superimposed alternating voltage summed to DC voltage must not exceed rated voltage, rated ripple current must not be exceeded and no reverse polarity is allowed

Ordering Code: Example – AZC471M450NC1

AZC	471	M	450	NC	1
Series	C with multiplying factor: 1=x10, 2=x100, 3=x1.000,	Tolerance	V_R	Size	1=sleeve 0=no sleeve

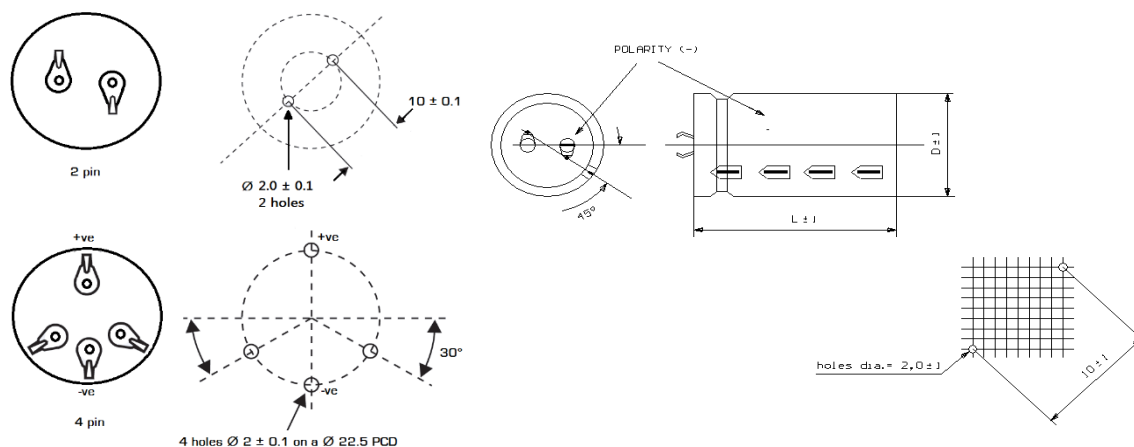
Expected Lifetime Vs Temperature and Ripple Current
AZC - AZS


	Capacitance	Case	Diam	Height	Tanδ	ESRmax typ		Zmax	Iripple @100Hz		Ordering Code
	[μF]@100Hz		[mm]	[mm]	[%]@100Hz	[mΩ]@100Hz		[mΩ]@10KHz	[A]@85°C	[A]@105°C	*= C, 2 Pins S, 4 Pins
200	470	MB	30	40	0,10	271	217	203	3,9	1,6	AZ*471M200MB1
	680	MB	30	40	0,10	187	150	141	4,7	1,9	AZ*681M200MB1
	1000	MC	30	50	0,10	127	102	96	6,2	2,6	AZ*102M200MC1
		NB	35	40	0,10	127	102	96	6,2	2,6	AZ*102M200NB1
	1500	NC	35	50	0,10	85	68	64	8,3	3,5	AZ*152M200NC1
	2200	NE	35	75	0,10	58	46	43	12,0	5,0	AZ*222M200NE1
		QC	45	50	0,10	58	46	43	11,6	4,8	AZ*222M200QC1
	3300	PG	40	100	0,10	39	31	29	18,0	7,5	AZ*332M200PG1
		QE	45	75	0,10	39	31	29	16,9	7,0	AZ*332M200QE1
	3900	QG	45	100	0,10	33	26	24	20,9	8,7	AZ*392M200QG1
250	470	MB	30	40	0,10	271	217	203	3,9	1,6	AZ*471M250MB1
	680	MC	30	50	0,10	187	150	141	5,1	2,1	AZ*681M250MC1
		NB	35	40	0,10	187	150	141	5,1	2,1	AZ*681M250NB1
	1000	NB	35	40	0,10	127	102	96	6,2	2,6	AZ*102M250NB1
		NC	35	50	0,10	127	102	96	6,8	2,8	AZ*102M250NC1
	1500	NE	35	75	0,10	85	68	64	9,9	4,1	AZ*152M250NE1
		PC	40	50	0,10	85	68	64	9,0	3,7	AZ*152M250PC1
		PE	40	75	0,10	85	68	64	10,7	4,4	AZ*152M250PE1
	2200	PG	40	100	0,10	58	46	43	14,7	6,1	AZ*222M250PG1
400	220	MB	30	40	0,10	579	347	434	3,8	1,6	AZ*221M400MB1
	330	MB	30	40	0,10	386	232	290	4,7	1,9	AZ*331M400MB1
	470	MC	30	50	0,10	271	163	203	6,1	2,6	AZ*471M400MC1
		NB	35	40	0,10	271	163	203	6,1	2,5	AZ*471M400NB1
		NC	35	50	0,10	271	163	203	6,7	2,8	AZ*471M400NC1
	560	NC	35	50	0,10	227	136	171	7,3	3,1	AZ*561M400NC1
	680	NC	35	50	0,10	187	112	141	8,1	3,4	AZ*681M400NC1
		NN	35	60	0,10	187	112	141	8,7	3,6	AZ*681M400NN1
		NE	35	75	0,10	187	112	141	9,6	4,0	AZ*681M400NE1
		PC	40	50	0,10	187	112	141	8,7	3,6	AZ*681M400PC1
	820	NN	35	60	0,10	155	93	117	9,6	4,0	AZ*821M400NN1
		PN	40	60	0,10	155	93	117	10,3	4,3	AZ*821M400PN1



	Capacitance	Case	Diam	Height	Tanδ	ESRmax typ		Zmax	Iripple @100Hz		Ordering Code
	[μF]@100Hz		[mm]	[mm]	[%]@100Hz	[mΩ]@100Hz	[mΩ]@10KHz	[mΩ]@10KHz	[A]@85°C	[A]@105°C	*= C, 2 Pins S, 4 Pins
400	1000	NN	35	60	0,10	127	76	96	10,6	4,4	AZ*102M400NN1
		NE	35	75	0,10	127	76	96	11,7	4,9	AZ*102M400NE1
		PN	40	60	0,10	127	76	96	11,4	4,8	AZ*102M400PN1
		PE	40	75	0,10	127	76	96	12,6	5,2	AZ*102M400PE1
		QC	45	50	0,10	127	76	96	11,3	4,7	AZ*102M400QC1
		QN	45	60	0,10	127	76	96	12,2	5,1	AZ*102M400QN1
	1200	PE	40	75	0,10	106	64	80	13,8	5,7	AZ*122M400PE1
		PG	40	100	0,10	106	64	80	15,7	6,5	AZ*122M400PG1
	1500	PG	40	100	0,10	85	51	64	17,5	7,3	AZ*152M400PG1
		QN	45	60	0,10	85	51	64	15,0	6,2	AZ*152M400QN1
	1500	QE	45	75	0,10	85	51	64	16,5	6,9	AZ*152M400QE1
	1800	QG	45	100	0,10	71	42	53	20,5	8,5	AZ*182M400QG1
	2200	QG	45	100	0,10	58	35	43	22,6	9,4	AZ*222M400QG1
	3300	RG	50	100	0,10	39	23	29	29,4	12,2	AZ*332M400RG1
450	220	MB	30	40	0,10	579	347	434	3,8	1,6	AZ*221M450MB1
	330	MC	30	50	0,10	386	232	290	5,1	2,1	AZ*331M450MC1
		NB	35	40	0,10	386	232	290	5,1	2,1	AZ*331M450NB1
	470	NB	35	40	0,10	271	163	203	6,1	2,5	AZ*471M450NB1
		NC	35	50	0,10	271	163	203	6,7	2,8	AZ*471M450NC1
	560	NC	35	50	0,10	227	136	171	7,3	3,1	AZ*561M450NC1
		NE	35	75	0,10	227	136	171	8,7	3,6	AZ*561M450NE1
		PC	40	50	0,10	227	136	171	7,9	3,3	AZ*561M450PC1
	680	NC	35	50	0,10	187	112	141	8,1	3,4	AZ*681M450NC1
		NN	35	60	0,10	187	112	141	8,7	3,6	AZ*681M450NN1
		NE	35	75	0,10	187	112	141	9,6	4,0	AZ*681M450NE1
		PE	40	75	0,10	187	112	141	10,4	4,3	AZ*681M450PE1
		QC	45	50	0,10	187	112	141	9,3	3,9	AZ*681M450QC1
	820	NN	35	60	0,10	155	93	117	9,6	4,0	AZ*821M450NN1
		NE	35	75	0,10	155	93	117	10,6	4,4	AZ*821M450NE1
	1000	PN	40	60	0,10	127	76	96	11,4	4,8	AZ*102M450PN1
		PE	40	75	0,10	127	76	96	12,6	5,2	AZ*102M450PE1
		PG	40	100	0,10	127	76	96	14,3	6,0	AZ*102M450PG1
		QE	45	75	0,10	127	76	96	13,4	5,6	AZ*102M450QE1
	1200	PG	40	100	0,10	106	64	80	15,7	6,5	AZ*122M450PG1
	1500	QG	45	100	0,10	85	51	64	18,7	7,8	AZ*152M450QG1
	2200	QG	45	100	0,10	58	35	43	22,6	9,4	AZ*272M450RG1
	2700	RG	50	100	0,10	47	28	35	26,6	11,1	AZ*272M450RG1
	4700	RH	50	105	0,10	27	16	20	35,1	14,6	AZ*472M450RH1



Technical Drawing

Dimension, Quantity and Weight for Box

Case		Connections			Packaging	
Code	DxL (mm)	PINS			Pcs/Box	Weight/Box (Kg)
		AZC	AZS	Lenght		
MB	30x40	2		6.3	254	4-6
MC	30x50	2		6.3	254	4-6
NB	35x40	2	4	6.3	100	6-8
NC	35x50	2	4	6.3	100	6-8
NN	35x60	2	4	6.3	100	5-7
NE	35x75	2	4	6.3	50	6-8
PB	40x40	2	4	6.3	126	9-10
PC	40x50	2	4	6.3	126	9-10
PN	40x60	2	4	6.3	63	9-10
PE	40x75		4	6.3	63	7-9
PG	40x100		4	6.3	63	9-10
PH	40x105		4	6.3	48	8-10
QC	45x50		4	6.3	96	6-8
QN	45x60		4	6.3	48	6-8
QE	45x75		4	6.3	48	7-9
QG	45x100		4	6.3	48	8-10
QH	45x105		4	6.3	48	8-10
RE	50x75		4	6.3	48	8-10
RG	50x100		4	6.3	48	8-10
RH	50x105		4	6.3	48	8-10

All dimensions in mm, torque in Nm, weight in kg

