

# AZC - AZS SERIES

## ALUMINIUM ELECTROLYTIC CAPACITORS FOR PRINTED WIRING BOARD

Series	Capacitance range	Voltage range	Temperature range	Case $\Phi$ x H	Applications
<u>AZC</u> <u>AZS</u>	100 - 4700	200 -450	-25°C , +105°C	30 x 40 45 x 100	Snap-in type, 2-4 pins configuration Extended temperature range Solder pin mounting Industrial applications

### MECHANICAL OUTLINES:

CASE: cylindrical, aluminium made

TERMINALS: to be soldered, for printed wiring board (type SNAP-IN)

SEALING: hermetic by beading on a rubber-Bakelite cover

PRESSURE RELEASE VENT: directly on to the aluminium case

SLEEVE: self-extinguishing thermo shrinkable sleeve

MOUNTING: vertical, by soldering to printed circuit board.

SIZE: see enclosed drawings

CLIMATIC CATEGORY (IEC 68): 25/98/56

SPECIFICATIONS	TEMPERATURE RANGE	CAPACITANCE
CECC 30300 IEC 384-4 ("long life grade") MIL C62D DIN 41240 / DIN 45910	Operating: -25 °C +105 °C  Climatic Category (IEC 68): 25/105/56	Tolerance shall be within the following limits: -20% + 20% (standard tolerance) or -10% +30% (available on request)

### LEAKAGE CURRENT:

After the rated voltage has been applied to the capacitor for 5 minutes the leakage current must be:

Maximum limit	at 25 °C	$I_f \leq 0,004 * C * V$
Operating limit	at 25 °C:	$I_f \leq 0,001 * C * V$

where  $I_f$  = leakage current ( $\mu$ A)

C= capacitance ( $\mu$ F)

V= rated voltage (V)

### IMPORTANT

When using high-capacitance and high-voltage electrolytic capacitors it is important to remember that the inner part (the rolled section) is not insulated from can: between the negative pole and the aluminium can there is a variable and not defined resistance essentially due to the electrolyte used in capacitor manufacture.

### SURGE VOLTAGE

<b>Working Voltage</b>	200	250	315	400	420	450	500
<b>Surge Voltage</b>	230	290	347	440	460	495	525

**RIPPLE CURRENT:**

The allowable values of ripple current in amperes, are related to the temperature and frequency by the formula:

$$I_r = K_t * K_f * I_{r105}$$

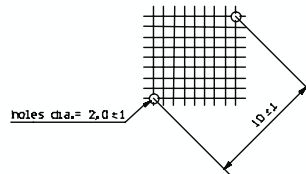
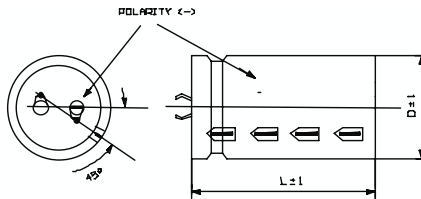
where  $I_{r105}$  is the limit given by tables, referred to a temperature of 105 °C and to a frequency of 100 Hz and  $K_t$  or  $K_f$  are values here below tabulated:

°C	50	65	75	85	95	105
$K_t$	2.6	2.4	2.1	1.8	1.35	1.0

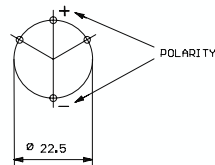
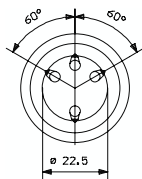
$V_n$	HZ	50	98	300	400	500	>1KHZ
$V > 160$		0.88	1.00	1.20	1.25	1.35	1.40

**CAPACITORS DIMENSIONS AND DRILLING PLAN OF PRINTED WIRING BOARD**

- AZC SERIES



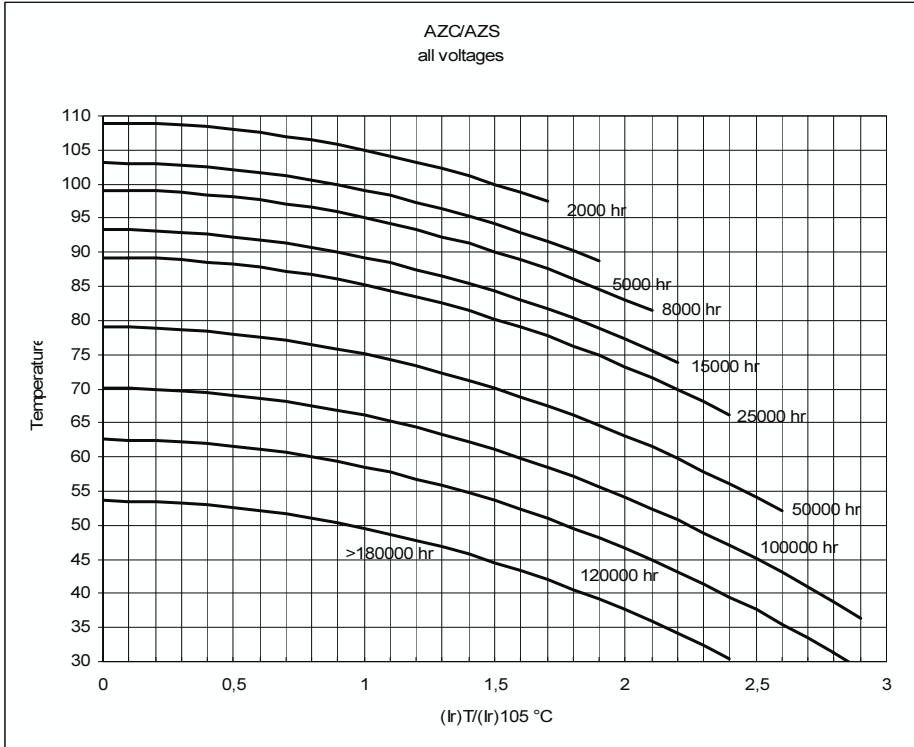
- AZS SERIES ( D = 35 / 40 / 45 mm )



CASE CODE	Φ x l (mm)	CASE CODE	Φ x l (mm)	CASE CODE	Φ x l (mm)	CASE CODE	Φ x l (mm)
MB	30 x 40	NN	35 x 60	PN	40 x 60	QE	45 x 75
MC	30 x 50	NE	35 x 75	PG	40 x 100	QG	45 x 100
NB	35 x 40	PB	40 x 40	QC	45 x 50		
NC	35 x 50	PC	40 x 50	QN	45 X 60		

- The unconnected pins serve as mountings and must be soldered to insulated pads*

## EXPECTED LIFE AS A FUNCTION OF TEMPERATURE AND RIPPLE CURRENT



Expected life criteria: see introduction.

CAP ( $\mu$ F)	Rated Voltage (Vn)	Case Code	$\Phi$ x h (mm)	TG $\delta$ 100Hz	ESR max 100Hz (mOhm)	ESR typ 100Hz (mOhm)	Z max 10KHz (mOhm)	I ripple 75°C 100Hz (A)	I ripple 105°C 100Hz (A)	CATALOGUE NUMBER	
										2 mounting pins	4 mounting pins
470	200	MB	30 x 40	0,08	203	152	174	3,2	1,5	AZC471M200MB1	
680		MB	30 x 40	0,08	141	105	120	3,9	1,9	AZC681M200MB1	
1000		MC	30 x 50	0,08	96	72	82	5,2	2,5	AZC102M200MC1	
1000		NB	35 x 40	0,08	96	72	82	5,7	2,7	AZC102M200NB1	AZS102M200NB1
1200		NB	35 x 40	0,08	80	60	68	6,2	3,0	AZC122M200NB1	AZS122M200NB1
1500		NC	35 x 50	0,08	64	48	54	6,9	3,3	AZC152M200NC1	AZS152M200NC1
1800		NC	35 x 50	0,08	53	40	46	7,6	3,6	AZC182M200NC1	AZS182M200NC1
2700		NE	35 x 75	0,08	35	27	30	11,1	5,3	AZC272M200NE1	AZS272M200NE1
3300		PG	40 x 100	0,08	29	22	25	15,4	7,3		AZS332M200PG1
2200		QC	45 x 50	0,08	43	33	37	9,7	4,6		AZS222M200QC1
3300		QE	45 x 75	0,08	29	22	25	14,1	6,7		AZS332M200QE1
4700		QG	45 x 100	0,08	20	15	18	19,6	9,3		AZS472M200QG1

CAP ( $\mu$ F)	Rated Voltage (Vn)	Case Code	$\Phi$ x h (mm)	TG $\delta$ 100Hz	ESR max 100Hz (mOhm)	ESR typ 100Hz (mOhm)	Z max 10KHz (mOhm)	I ripple 75°C 100Hz (A)	I ripple 105°C 100Hz (A)	CATALOGUE NUMBER	
										2 mounting pins	4 mounting pins
470	250	MB	30 x 40	0,08	203	152	174	3,2	1,5	AZC471M250MB1	
680		MC	30 x 50	0,08	141	105	120	4,3	2,0	AZC681M250MC1	
680		NB	35 x 40	0,08	141	105	120	4,7	2,2	AZC681M250NB1	AZC681M250NB1
1000		NB	35 x 40	0,08	96	72	82	5,7	2,7	AZC102M250NB1	AZC102M250NB1
1000		NC	35 x 50	0,08	96	72	82	5,7	2,7	AZC102M250NC1	AZC102M250NC1
2200		NE	35 x 75	0,08	43	33	37	10,0	4,8	AZC222M250NE1	AZC222M250NE1
1500		PC	40 x 50	0,08	64	48	54	7,5	3,6	AZC152M250PC1	AZC152M250PC1
2200		PG	40 x 100	0,08	43	33	37	12,6	6,0		AZC222M250PG1

CAP ( $\mu$ F)	Rated Voltage (Vn)	Case Code	$\Phi$ x h (mm)	TG $\delta$ 100Hz	ESR max 100Hz (mOhm)	ESR typ 100Hz (mOhm)	Z max 10KHz (mOhm)	I ripple 75°C 100Hz (A)	I ripple 105°C 100Hz (A)	CATALOGUE NUMBER	
										2 mounting pins	4 mounting pins
220	385	MB	30 x 40	0,08	434	326	370	2,2	1,1	AZC221M385MB1	
330		MB	30 x 40	0,08	290	217	247	2,7	1,3	AZC331M385MB1	
470		NC	35 x 50	0,08	203	152	156	4,1	1,9	AZC471M385NC1	AZS471M385NC1
470		PB	40 x 40	0,08	203	152	174	3,8	1,8	AZC471M385PB1	AZS471M385PB1
680		NC	35 x 50	0,08	141	105	108	4,9	2,3	AZC681M385NC1	AZS681M385NC1
680		PC	40 x 50	0,08	141	105	108	5,3	2,5	AZC681M385PC1	AZS681M385PC1

CAP ( $\mu\text{F}$ )	Rated Voltage (Vn)	Case Code	$\Phi \times h$ (mm)	TG $\delta$ 100Hz	ESR max 100Hz (mOhm)	ESR typ 100Hz (mOhm)	Z max 10Khz (mOhm)	I ripple 75°C 100Hz (A)	I ripple 105°C 100Hz (A)	CATALOGUE NUMBER	
										2 mounting pins	4 mounting pins
220	400	MB	30 x 40	0,08	434	326	370	2,2	1,1	AZC221M400MB1	
330		MB	30 x 40	0,08	290	217	247	2,7	1,3	AZC331M400MB1	
330		MC	30 x 50	0,08	290	217	247	3,0	1,4	AZC331M400MC1	
470		MC	30 x 50	0,08	203	152	174	3,6	1,7	AZC471M400MC1	
470		NB	35 x 40	0,08	203	152	174	3,9	1,8	AZC471M400NB1	AZS471M400NB1
470		NC	35 x 50	0,08	203	152	174	3,9	1,8	AZC471M400NC1	AZS471M400NC1
560		NC	35 x 50	0,08	171	128	146	4,2	2,0	AZC561M400NC1	AZS561M400NC1
680		NC	35 x 50	0,08	141	105	120	4,7	2,2	AZC681M400NC1	AZS681M400NC1
820		NN	35 x 60	0,08	117	87	82	5,5	2,6	AZC821M400NN1	AZS821M400NN1
1200		NE	35 x 75	0,08	80	60	68	7,4	3,5	AZC122M400NE1	AZS122M400NE1
680		PC	40 x 50	0,08	141	105	120	5,0	2,4	AZC681M400PC1	AZS681M400PC1
1200		PE	40 x 75	0,08	80	60	68	8,0	3,8		AZS122M400PE1
1500		PG	40 x 100	0,08	64	48	54	10,4	4,9		AZS152M400PG1
1000		QC	45 x 50	0,08	96	72	82	6,6	3,1		AZS102M400QC1
1500		QE	45 x 75	0,08	64	48	54	9,5	4,5		AZS152M400QE1
2200		QG	45 x 100	0,08	43	33	37	13,4	6,4		AZS222M400QG1

CAP ( $\mu\text{F}$ )	Rated Voltage (Vn)	Case Code	$\Phi \times h$ (mm)	TG $\delta$ 100Hz	ESR max 100Hz (mOhm)	ESR typ 100Hz (mOhm)	Z max 10Khz (mOhm)	I ripple 75°C 100Hz (A)	I ripple 105°C 100Hz (A)	CATALOGUE NUMBER	
										2 mounting pins	4 mounting pins
150	450	MB	30 x 40	0,10	796	597	652	1,7	0,8	AZC151M450MB1	
220		MB	30 x 40	0,10	543	407	445	2,0	1,0	AZC221M450MB1	
330		MC	30 x 50	0,10	362	271	297	2,7	1,3	AZC331M450MC1	
330		NB	35 x 40	0,10	362	271	297	3,0	1,4	AZC331M450NB1	AZS331M450NB1
470		NC	35 x 50	0,10	254	191	138	4,3	2,1	AZC471M450NC1	AZS471M450NC1
680		NN	35 x 60	0,10	176	132	120	5,0	2,4	AZC681M450NN1	AZS681M450NN1
680		NE	35 x 75	0,10	176	132	132	5,3	2,5	AZC681M450NE1	AZS681M450NE1
820		NE	35 x 75	0,10	146	109	110	5,8	2,8	AZC821M450NE1	AZS821M450NE1
680		PC	40 x 50	0,10	176	132	132	4,8	2,3	AZC681M450PC1	AZS681M450PC1
1000		PE	40 x 75	0,10	119	90	98	6,6	3,2		AZS102M450PE1
1500		PG	40 x 100	0,10	80	60	66	9,5	4,5		AZS152M450PG1
820		QC	45 x 50	0,10	146	109	119	5,4	2,6		AZS821M450QC1
1200		QE	45 x 75	0,10	100	75	82	7,8	3,7		AZS122M450QE1
1800		QG	45 x 100	0,10	66	50	49	11,1	5,3		AZS182M450QG1