

Series AR(U)- 85°C 5.000h

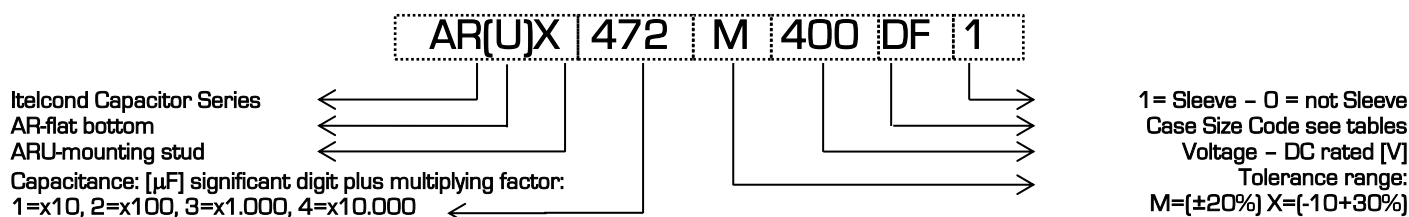
Capacitors screw terminal type – Standard 85°C

- AR- Flat Bottom
- ARU- Mounting Stud
- Capacitance Tolerance: - 20 + 20% – standard (M)
- Capacitance Tolerance: -10 + 30% - on request (X)
- Climatic category: 40/85/56
- Case: 35x59 – 76x145
- Temperature – 40°C + 85°C
- All welded construction reliable electrical contact

Mechanical Outlines

- Case: aluminium made
- Terminals: screw
- Sealing: hermetic by EPR gasket, on a resin cover
- Pressure Release Vent: silicone-rubber
- Sleeve: self-extinguishing thermo shrinkable
- Size: see enclosed drawings
- Mounting Hardware: see hardware section
- External Material UL94-V0

Ordering Code: Example



Ripple Current

The allowable values of ripple current in Amperes, are related to the temperature and frequency by following equation:

$$I_{\text{Ripple}} = K_t \cdot K_f \cdot I_{\text{Ripple@85°C}}$$

Where:

- $I_{\text{Ripple@85°C}}$ is the limit given by tables, @ 85°C/100Hz
- K_t is the Temperature Correlation Factor
- K_f is the Frequency Correlation Factor

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

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

Table 1- K_t Values

V_n/Hz	K_f			
	50<V=300	V>300	50<V=300	V>300
	Diameter Code A,B		Diameter Code C,D,E	
50	0.79	0.76	0.78	0.72
100	1.00	1.00	1.00	1.00
120	1.04	1.04	1.02	1.03
200	1.12	1.17	1.06	1.14
300	1.16	1.28	1.08	1.24
400	1.20	1.35	1.09	1.29
500	1.22	1.39	1.09	1.32
>1000	1.25	1.45	1.09	1.37

Table 2- K_f Values

Expected Lifetime End of Life Criteria

During useful life typical electrical parameters of electrolytic capacitor are subject to change.

End of Life criteria, when rated temperature, voltage and ripple are applied, are:

$$\frac{\Delta C}{C_{t0}} \leq 30\% \quad \text{Equation 1}$$

$$ESR \leq 3 \cdot ESR_{t0} \quad \text{Equation 2}$$

$$I_f \leq I_{ft0} \quad \text{Equation 3}$$

where t_0 is the initial value

Voltage Endurance Test Requirements

On Voltage Endurance Test are based Expected Lifetime Curves.

End of Life criteria, when rated temperature, and voltage are applied for 2'000hrs, are

$$\frac{\Delta C}{C_{t0}} \leq 15\% \quad \text{Equation 4}$$

$$ESR \leq 1,3 \cdot ESR_{t0} \quad \text{Equation 5}$$

$$I_f \leq I_{ft0} \quad \text{Equation 6}$$

where t_0 is the initial value

Expected Lifetime Vs Temperature and Ripple Current

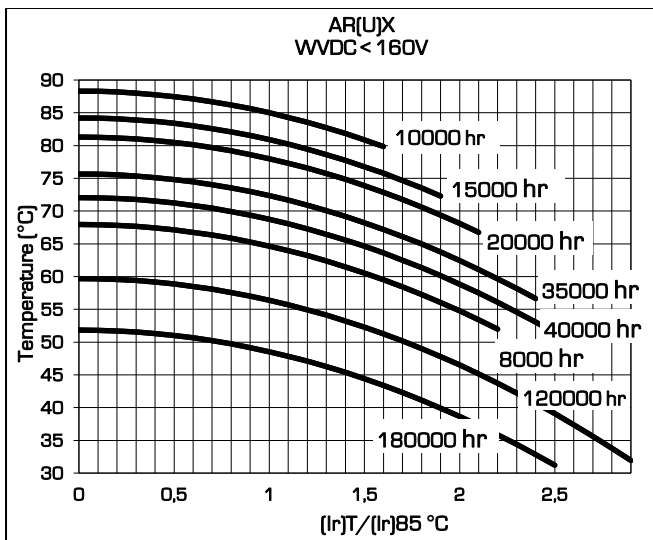


Table 3

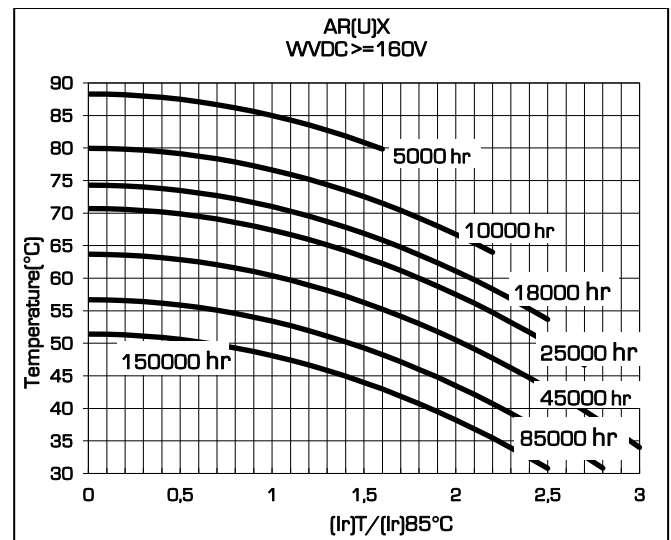


Table 4

Leakage Current

After the rated voltage has been applied to the capacitor for 5 minutes the leakage current must be within those limits.

Maximum limit	@25°C	$I_f \leq 0,004 \times C \times V$
Operating limit	@25°C	$I_f \leq 0,001 \times C \times V$

Where: I_f =leakage current [μ A], C =capacitance [μ F],
 V =rated voltage [V]

Surge Voltage

Working Voltage	40	50	63	75	100	160	200	250	350	400	420	450
Surge Voltage	46	58	73	86	115	185	230	290	385	440	460	495

	Capacitance	Case	Diam	Height	Tanδ	ESRmax typ		Zmax	Iripple @100Hz		Ordering Code
	[μF]@100Hz		[mm]	[mm]	[%]@100Hz	[mΩ]@100Hz		[mΩ]@10KHz	[A]@55°C	[A]@85°C	[U] for mounting stud
40	15000	AB	35	83	0,35	33	27	25	10,5	6,1	AR(U)X153M040AB1
	22000	AC	35	105	0,42	27	22	18	13,2	7,7	AR(U)X223M040AC1
		BB	51	83	0,42	30	24	23	14,6	8,1	AR(U)X223M040BB1
	33000	BB	51	83	0,45	20	16	18	16,9	9,8	AR(U)X333M040BB1
	47000	BB	51	83	0,48	15	12	18	16,9	11,4	AR(U)X473M040BB1
		BC	51	105	0,51	16	12	14	21,4	13,3	AR(U)X473M040BC1
	68000	CC	63	105	0,63	15	12	11	26,3	14,6	AR(U)X683M040CC1
	100000	CC	63	105	0,70	10	8	9	30,0	17,5	AR(U)X104M040CC1
63	150000	DC	76	105	0,90	9	7	8	36,1	21,1	AR(U)X154M040DC1
	220000	DF	76	145	1,30	8	7	7	41,6	24,3	AR(U)X224M040DF1
	6800	AB	35	83	0,20	42	34	27	9,3	5,2	AR(U)X682M063AB1
	10000	AB	35	83	0,22	32	25	21	10,8	6,0	AR(U)X103M063AB1
	15000	AC	35	105	0,25	24	19	18	14,1	7,8	AR(U)X153M063AC1
	22000	BB	51	83	0,33	21	17	17	16,1	8,9	AR(U)X223M063BB1
		BC	51	105	0,33	24	19	18	18,2	10,1	AR(U)X223M063BC1
	33000	BC	51	105	0,38	17	13	14	20,8	11,6	AR(U)X333M063BC1
100	47000	CC	63	105	0,33	10	8	9	30,0	16,7	AR(U)X473M063CC1
	68000	DC	76	105	0,39	8	7	7	36,9	20,5	AR(U)X683M063DC1
	100000	DF	76	145	0,45	6	5	6	47,7	26,5	AR(U)X104M063DF1
	3300	AB	35	83	0,12	52	42	34	8,4	4,7	AR(U)X332M100AB1
	4700	AB	35	83	0,12	37	29	27	9,7	5,4	AR(U)X472M100AB1
		BB	51	83	0,12	41	33	30	12,6	7,0	AR(U)X472M100BB1
	6800	AC	35	105	0,12	25	20	20	13,2	7,3	AR(U)X682M100AC1
	10000	BB	51	83	0,12	17	14	17	15,6	8,7	AR(U)X103M100BB1
BC		51	105	0,12	19	15	14	20,4	11,3	AR(U)X103M100BC1	
160	15000	BC	51	105	0,12	11	9	13	21,6	12	AR(U)X153M100BC1
	22000	CC	63	105	0,12	8	6	9	27,8	15,4	AR(U)X223M100CC1
	33000	DC	76	105	0,12	5	4	8	35,9	20	AR(U)X333M100DC1
	47000	DF	76	145	0,12	4	3	7	46,7	26	AR(U)X473M100DF1
	1500	AB	35	83	0,12	115	92	62	6,2	3,4	AR(U)X152M160AB1
	2200	AC	35	105	0,12	78	63	41	8,5	4,7	AR(U)X222M160AC1
	3300	BB	51	83	0,12	52	42	29	11,3	6,3	AR(U)X332M160BB1
	4700	BC	51	105	0,12	37	29	25	14,0	7,8	AR(U)X472M160BC1
200	6800	CC	63	105	0,12	25	20	20	18,9	10,5	AR(U)X682M160CC1
	10000	CC	63	105	0,12	17	14	18	20,5	11,4	AR(U)X103M160CC1
		DC	76	105	0,12	19	15	14	25,8	14,3	AR(U)X103M160DC1
	15000	DF	76	145	0,12	13	10	10	36,2	20,1	AR(U)X153M160DF1
	22000	DF	76	145	0,12	8	6	8	36,4	20,2	AR(U)X223M160DF1
	680	AA	35	59	0,12	253	202	111	3,8	2,1	AR(U)X681M200AA1
	1000	AB	35	83	0,12	172	138	78	5,6	3,1	AR(U)X102M200AB1
	1500	AC	35	105	0,12	115	92	51	7,9	4,4	AR(U)X152M200AC1
2200	BB	51	83	0,12	78	63	36	10,3	5,7	AR(U)X222M200BB1	