SNUBBER CAPACITOR WITH AXIAL LEADS

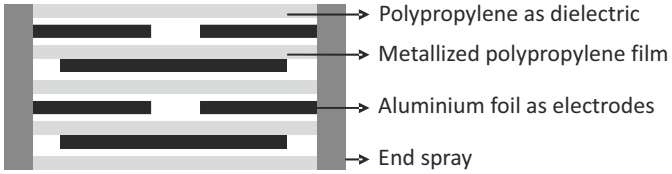
KPF-9

Highlights

- Self-healing property
- High DV / DT
- Low ESR
- Low loss polypropylene dielectric
- Reference standard-IEC 61071
- Flame retardant UL94 - V0, ROHS compliant

Construction

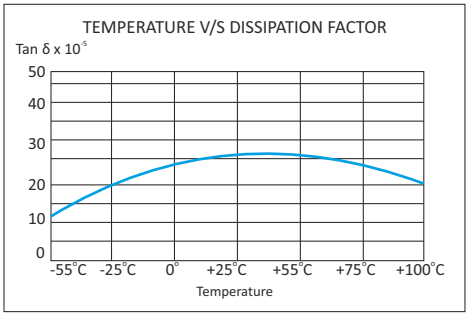
Extended foil electrodes with Metallized polypropylene dielectric internal series connection

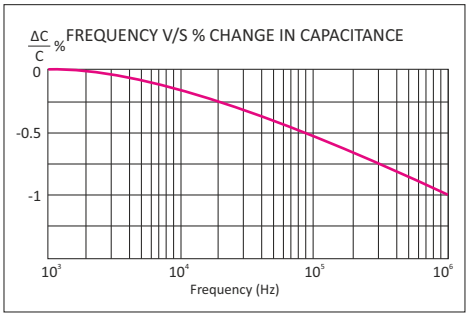


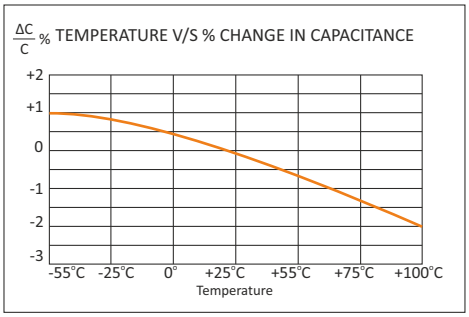
Applications

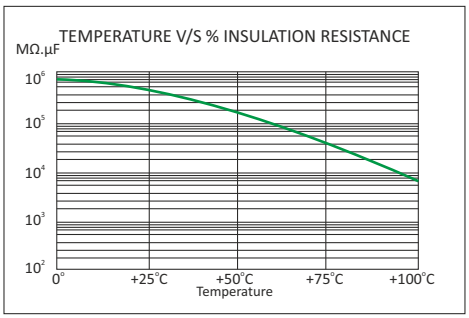
These capacitors are used in high voltage, high current and high pulse applications such as:

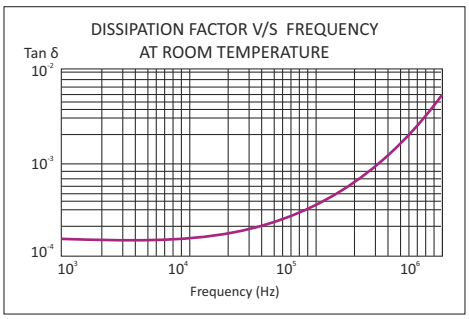
- “Turn On” and “Turn Off” snubber circuits
- Energy conversion and control in power electronics
- Protection circuits in SMPS











KPF-9

Technical Specifications

Physical Characteristics

▪ Dielectric material	Polypropylene film.
▪ Electrode material	Aluminum foil and Metallized polypropylene film
▪ Winding construction	Extended foil electrodes with Metallized polypropylene dielectric internal series connection
▪ Terminal	Tinned copper
▪ Enclosure	UL 94 V-0 polyester tape wrap with thermosetting resin end-fill

Electrical Characteristics

▪ Capacitance range	0.068 MFD to 1.5MFD
▪ Capacity tolerance	±5%(J), ±10%(K)
▪ Rated voltage VDC	850, 1000, 1200, 1600, 2000, 2500, 3000
▪ Rated voltage VAC	450, 500, 500, 630, 630, 750, 750,
▪ Test voltage between terminals	1.6 x rated voltage VDC for 10 seconds
▪ Test voltage terminal to case	3KVAC at 50Hz for 60 seconds
▪ Dissipation factor (Tan d)	$\leq$0.0005 at 1 KHz and 25°C
▪ Temperature range	-40°C to +85°C
▪ Insulation resistance at 25°C & at a test voltage of 500 VDC applied for 1 minute	C $\leq$ 0.33 MFD $\geq$100,000MΩ C > 0.33 MFD $\geq$30,000MΩ

Marking on Capacitors

Each capacitor will have the following information printed on it, sequentially:

- The Company name in words ALCON
- The capacitor grade viz KPF-9
- The capacitance value MFD
- The rated voltage VDC
- Capacity tolerance and manufacturing date code
- Design reference number on non-standard capacitors

KPF-9

Standard Capacitor Values

Working Voltage 850 VDC (450 VAC)

Rated Capacitance MFD	Dimensions in mm*				Case Code	DV/DT V/µ Sec	I Peak Amps	Irms Max at 100KHz & 70°C Amps	Typical ESR at 100KHz mΩ	Ordering Code
	T max	W max	L max	d						
0.150	10.0	16.0	34.0	1.0	P1	800	120.00	7.40	6.00	SI00U150850AI0P10AXLK01
0.220	12.0	18.0	34.0	1.0	P2	800	176.00	8.00	6.00	SI00U220850AI0P20AXLK01
0.330	14.0	20.0	34.0	1.0	P3	800	264.00	9.40	5.00	SI00U330850AI0P30AXLK01
0.470	17.0	25.0	34.0	1.0	P4	800	376.00	11.70	5.00	SI00U470850AI0P40AXLK01
0.680	19.0	25.0	46.0	1.2	P5	500	340.00	13.80	4.00	SI00U680850AI0P50AXLK01
1.000	22.0	33.0	46.0	1.2	P6	500	500.00	14.40	3.00	SI000010850AI0P60AXLK01
1.200	18.0	28.0	54.0	1.2	P7	400	480.00	16.70	3.00	SI01U200850AI0P70AXLK01
1.500	21.0	32.0	54.0	1.2	P8	400	600.00	20.30	2.00	SI01U500850AI0P80AXLK01

Working voltage 1000 VDC (500 VAC)

Rated Capacitance MFD	Dimensions in mm*				Case Code	DV/DT V/µ Sec	I Peak Amps	Irms Max at 100KHz & 70°C Amps	Typical ESR at 100KHz mΩ	Ordering Code
	T max	W max	L max	d						
0.220	12.0	18.0	34.0	1.0	P2	800	176.00	8.00	6.00	SI00U221000AI0P20AXLK01
0.330	14.0	23.0	34.0	1.0	P9	800	264.00	9.40	5.00	SI00U331000AI0P90AXLK01
0.470	17.0	25.0	34.0	1.0	PA	800	376.00	11.70	5.00	SI00U471000AI0PA0AXLK01
0.680	19.0	25.0	46.0	1.2	P5	500	340.00	13.80	4.00	SI00U681000AI0P50AXLK01
1.000	22.0	33.0	46.0	1.2	P6	500	500.00	14.40	3.00	SI000011000AI0P60AXLK01
1.200	18.0	28.0	54.0	1.2	P7	400	480.00	16.70	3.00	SI01U201000AI0P70AXLK01
1.500	21.0	32.0	54.0	1.2	P8	400	600.00	20.30	2.00	SI01U501000AI0P80AXLK01

Working voltage 1200 VDC (500 VAC)

Rated Capacitance MFD	Dimensions in mm*				Case Code	DV/DT V/µ Sec	I Peak Amps	Irms Max at 100KHz & 70°C Amps	Typical ESR at 100KHz mΩ	Ordering Code
	T max	W max	L max	d						
0.150	9.5	16.0	34.0	1.0	PB	1000	150.00	9.00	6.00	SI00U151200AI0P10AXLK01
0.220	12.5	19.0	34.0	1.0	PC	1000	220.00	10.20	6.00	SI00U221200AI0PC0AXLK01
0.330	13.5	20.5	46.0	1.2	PD	800	264.00	10.80	6.00	SI00U331200AI0PD0AXLK01
0.470	19.5	25.5	46.0	1.2	PE	800	376.00	11.70	5.00	SI00U471200AI0PE0AXLK01
0.680	20.5	29.0	46.0	1.2	PF	800	544.00	13.60	5.00	SI00U681200AI0PF0AXLK01
1.000	21.0	30.0	54.0	1.2	PG	700	700.00	16.20	4.00	SI000011200AI0PG0AXLK01
1.200	22.0	32.0	54.0	1.2	PH	700	840.00	16.80	3.00	SI01U201200AI0PH0AXLK01

Custom-designed capacitors are available on request

* Refer to “Capacitor Drawing”on page 48

KPF-9

Standard Capacitor Values

Working Voltage 1600 VDC (630 VAC)

Rated Capacitance MFD	Dimensions in mm*				Case Code	DV/DT V/µ Sec	I Peak Amps	Irms Max at 100KHz & 70°C Amps	Typical ESR at 100KHz mΩ	Ordering Code
	T max	W max	L max	d						
0.100	13.0	19.0	34.0	1.0	PI	1100	110.00	9.00	7.00	SI00U101600AI0PI0AXLK01
0.150	16.0	21.0	34.0	1.0	PJ	1100	165.00	10.00	7.00	SI00U151600AI0PJ0AXLK01
0.220	18.0	25.0	34.0	1.2	PK	1100	242.00	12.00	7.00	SI00U221600AI0PK0AXLK01
0.330	17.0	23.0	46.0	1.2	PL	900	297.00	12.00	6.00	SI00U331600AI0PL0AXLK01
0.470	21.5	28.5	46.0	1.2	PM	900	423.00	13.80	6.00	SI00U471600AI0PM0AXLK01
0.680	23.5	34.0	46.0	1.2	PN	900	612.00	14.50	6.00	SI00U681600AI0PN0AXLK01

Working voltage 2000 VDC (630 VAC)

Rated Capacitance MFD	Dimensions in mm*				Case Code	DV/DT V/µ Sec	I Peak Amps	Irms Max at 100KHz & 70°C Amps	Typical ESR at 100KHz mΩ	Ordering Code
	T max	W max	L max	d						
0.033	8.0	14.0	34.0	1.0	P0	1200	40.00	4.80	19.00	SI0U0332000AI0P00AXLK01
0.047	10.0	16.0	34.0	1.0	P1	1200	56.00	6.70	10.00	SI0U0472000AI0P10AXLK01
0.068	11.0	18.0	34.0	1.0	PP	1200	81.00	7.90	8.00	SI0U0682000AI0PP0AXLK01
0.100	14.0	22.0	34.0	1.0	PQ	1200	120.00	9.50	6.00	SI00U102000AI0PQ0AXLK01
0.150	14.0	23.0	46.0	1.0	PR	950	142.00	10.00	6.00	SI00U152000AI0PR0AXLK01
0.220	16.0	27.0	46.0	1.0	PS	950	209.00	11.00	6.00	SI00U222000AI0PS0AXLK01
0.330	18.0	27.0	54.0	1.2	PT	850	280.00	12.80	5.00	SI00U332000AI0PT0AXLK01
0.470	19.0	33.0	54.0	1.2	PU	850	400.00	15.00	5.00	SI00U472000AI0PU0AXLK01

Working voltage 2500 VDC (750 VAC)

Rated Capacitance MFD	Dimensions in mm*				Case Code	DV/DT V/µ Sec	I Peak Amps	Irms Max at 100KHz & 70°C Amps	Typical ESR at 100KHz mΩ	Ordering Code
	T max	W max	L max	d						
0.033	9.2	16.0	34.0	1.0	PV	1300	43.00	4.80	19.00	SI0U0332500AI0PV0AXLK01
0.047	10.0	17.0	34.0	1.0	PW	1300	61.00	6.50	13.00	SI0U0472500AI0PW0AXLK01
0.068	12.0	19.0	34.0	1.0	PX	1300	88.00	8.60	8.00	SI0U0682500AI0PX0AXLK01
0.100	15.0	21.0	34.0	1.0	PY	1300	130.00	9.80	6.00	SI00U102500AI0PY0AXLK01
0.150	15.0	24.0	46.0	1.0	PZ	1050	157.00	10.90	6.00	SI00U152500AI0PZ0AXLK01
0.220	18.0	27.0	54.0	1.2	PT	950	209.00	11.20	6.00	SI00U222500AI0PT0AXLK01
0.330	19.0	33.0	54.0	1.2	PU	950	313.00	13.50	5.00	SI00U332500AI0PU0AXLK01

Custom-designed capacitors are available on request

* Refer to “Capacitor Drawing”on page 48

KPF-9

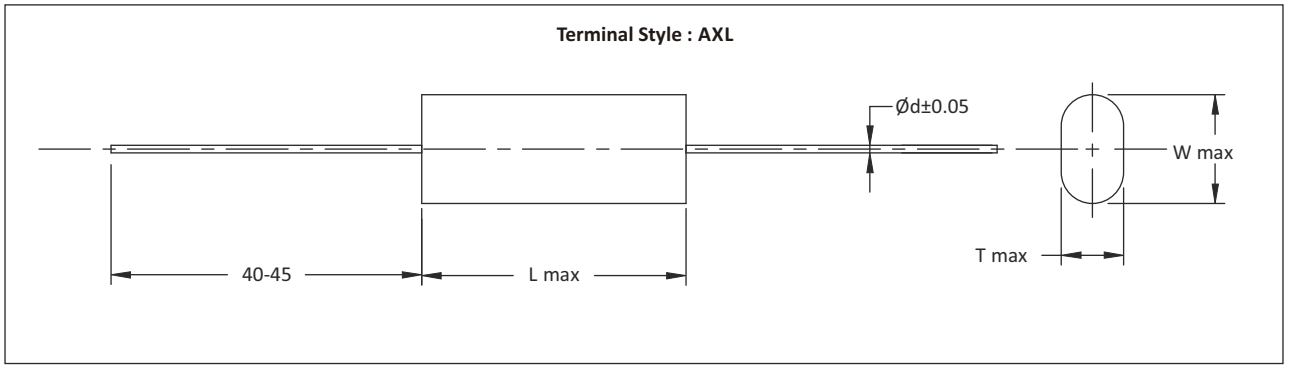
Standard Capacitor Values

Working Voltage 3000 VDC (750 VAC)

Rated Capacitance MFD	Dimensions in mm*				Case Code	DV/DT V/µ Sec	I Peak Amps	Irms Max at 100KHz & 70°C Amps	Typical ESR at 100KHz mΩ	Ordering Code
	T max	W max	L max	d						
0.015	8.5	15.5	34.0	1.0	BA	1500	22.00	3.00	35.00	SI0U0153000AI0BA0AXLK01
0.022	9.2	16.0	34.0	1.0	PV	1500	33.00	4.20	22.00	SI0U0223000AI0PV0AXLK01
0.033	11.0	17.0	34.0	1.0	BB	1500	49.00	6.10	15.00	SI0U0333000AI0BB0AXLK01
0.047	12.0	19.0	46.0	1.0	BC	1200	56.00	6.80	12.00	SI0U0473000AI0BC0AXLK01
0.068	14.0	21.0	46.0	1.0	BD	1200	81.00	7.90	10.00	SI0U0683000AI0BD0AXLK01
0.100	15.0	24.0	46.0	1.2	PZ	1200	120.00	9.30	8.00	SI00U103000AI0PZ0AXLK01
0.150	18.0	27.0	46.0	1.2	BE	1200	180.00	12.00	6.00	SI00U153000AI0BE0AXLK01

Custom-designed capacitors are available on request
* Refer to “Capacitor Drawing” below

Capacitor Drawing and Terminal Style



Dimensions in mm

Precaution

1. These capacitors are not suitable for ‘across the line’ applications
2. VAC (rated) : Frequency should be less than 1000Hz
3. VDC(rated) : 1.4 x Vrms + VDC should be less than rated VDC
4. MAX ESR = Typical ESR +30%

Part Number System

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	**2**	**3 to 7**					**8 to 11**				**12 to 13**		**14 to 16**			**17 to 20**				**21**	**22 to 23**	

Standard / Non-standard

S - Standard

N - Non-standard

Series

A - Aluminium Electrolytic Capacitors

I - IGBT Snubber Capacitors

D - DC-Link Capacitors

P - Power Film Capacitors

Capacitance Rating

example : 00U68 - 0.680 MFD
01U50 - 1.50 MFD
00001 - 1.00 MFD
05U60 - 5.6 MFD
00003 - 3.00 MFD

Voltage Rating

example : 1000 - 1000 VDC/VRMS
0450 - 450 VDC/VRMS
0700 - 700 VDC/VRMS
2500 - 2500 VDC/VRMS

Grade

example : AG - KP3C
AJ - KP6
AK - MP4A
AM - MKR9
AN - MKRS

Case code

(Refer table)

Terminal Style

Refer Table
Drawing

Tolerance

M : ±20%
K : ±10%
J : ±5%

Canias Code

By Default - 01

Cautions For Proper Use Of Film Capacitors

SAFETY INSTRUCTION

- Do not exceed the upper category temperature (UCT).
- Do not apply any mechanical stress to the capacitor terminals.
- Avoid any compressive, tensile or flexural stress.
- Do not move the capacitor after it has been assembled
- Do not exceed the specified torque limits during assembly.
- Avoid external energy inputs, such as fire or electricity.
- Avoid overload of the capacitors.
- Consult us if application is with severe temperature and humidity condition.
- There are no serviceable or repairable parts inside the capacitor. Opening the capacitor or any attempts to open or repair the capacitor will void the warranty and liability of ALCON

DISPOSAL

For disposal do either of the followings.

1. Incineration (at high temperature over 800°C) after piercing or crushing capacitor body.
2. Consignment to specialists of industrial waste. As per the compliance prescribed by the law.

Notes