

CapXon HL Series

HL Series Low ESR, Snap-in Type

Features

- ◆ Highly reliable capacitors that withstand low ESR & long life.
- ◆ Two or three dimensions with same ratings.
- ◆ Best for switching power supply.
- ◆ For detail specifications, please refer to Engineering Bulletin No. E128



Specifications

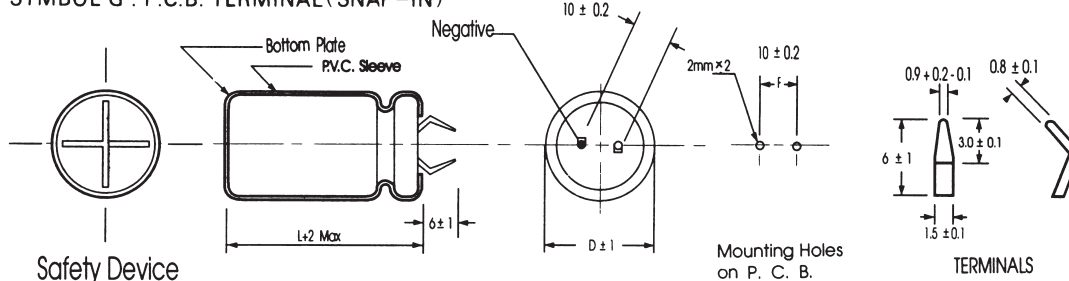
Item	Performance Characteristics												
Operating Temperature Range	-40 to +105°C						-25 to +105°C						
Rated Voltage Range	10 to 100 VDC						160 to 400 VDC						
Capacitance Range	560 to 47000 μ F						56 to 1500 μ F						
Capacitance Tolerance	$\pm 20\%$ (120Hz, +20°C)												
Leakage Current (+20°C,max.)	$I \leq 0.02CV$ After 5 minutes with rated working voltage applied.												
Dissipation Factor (tan δ)	Less than the value under table (%)												
	Working Voltage(VDC)		10	16	25	35	50	63	80	100	160 ~ 250	350 ~ 400	
	D.F. (%) max.		55	40	30	25	20	15	15	15	15	15	
	(+20°C,at 120Hz)												
Low Temperature Characteristics (120Hz)	Impedance ratio max.												
	Rated voltage (VDC)		10 , 16		25		35		50 , 63		80 , 100		160 to 400
	Z -25°C / Z +20°C		4		3		3		2		2		4
	Z -40°C / Z +20°C		15		10		8		6		5		—
Load Lifre	Test conditions												
	Duration time		:5000 Hrs										
	Ambient temperature		:+105°C										
	Applied voltage		:Rated DC working voltage										
	After test requirements at +20°C												
	Capacitance change		: $\leq \pm 25\%$ of the initial measured value										
	Dissipation factor		: $\leq 250\%$ of the initial specified value										
	Leakage current		: \leq The initial specified value										
Shelf Lifre	Test conditions												
	Duration time		:1000 Hrs										
	Ambient temperature		:+105°C										
	Applied voltage		:None										
	After test requirements at +20°C : Same limits as Load life.												
	Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.												

Multiplier for Ripple Current vs. Frequency

Frequency (Hz)	50	120	300	1K	10K	50K
10~50 VDC	0.95	1	1.03	1.05	1.08	1.08
63~100 VDC	0.93	1	1.07	1.13	1.19	1.20
160,250 VDC	0.81	1	1.17	1.32	1.45	1.50
350,400 VDC	0.77	1	1.16	1.30	1.41	1.43

Diagram of Dimensions:(unit:mm)

SYMBOL G : P.C.B. TERMINAL (SNAP-IN)



CapXon HL Series

Case Size

φ D x L (mm)

W V μ F ψ D	10											
	22			25			30			35		
	Size	Ripple	Z	Size	Ripple	Z	Size	Ripple	Z	Size	Ripple	Z
5600	22x26	1.10	126									
6800	22x26	1.30	126	25x26	1.30	88						
8200	22x26	1.56	126	25x26	1.56	88						
10000	22x31	1.60	98	25x26	1.60	88	30x26	1.60	75			
12000	22x36	1.80	82	25x31	1.80	78	30x26	1.80	75			
15000	22x36	2.10	82	25x31	2.10	68	30x26	2.10	75			
18000	22x36	2.20	82	25x31	2.20	68	30x31	2.20	65			
22000	22x41	2.75	68	25x36	2.75	62	30x31	2.75	48	35x27	2.75	68
27000				25x51	3.05	41	30x41	3.05	30	35x32	3.05	47
33000				25x51	3.40	41	30x41	3.40	30	35x37	3.40	37
39000							30x51	3.60	28	35x41	3.60	31
47000							30x51	4.60	28	35x52	4.60	25

W V μ F ψ D	16											
	22			25			30			35		
	Size	Ripple	Z	Size	Ripple	Z	Size	Ripple	Z	Size	Ripple	Z
5600	22x26	1.40	126									
6800	22x31	1.60	98	25x26	1.60	88						
8200	22x36	1.80	82	25x31	1.80	75						
10000	22x41	2.10	68	25x31	2.10	68	30x26	2.10	75			
12000	22x41	2.40	68	25x36	2.40	52	30x26	2.40	75			
15000	22x51	2.70	53	25x41	2.70	52	30x31	2.70	48			
18000				25x51	3.05	41	30x36	3.05	36	35x32	3.05	47
22000				25x51	3.40	41	30x41	3.40	30	35x37	3.40	37
27000							30x51	4.02	28	35x42	4.02	31
33000							30x51	4.32	28	35x42	4.32	31
39000										35x52	4.95	25

W V μ F ψ D	25											
	22			25			30			35		
	Size	Ripple	Z	Size	Ripple	Z	Size	Ripple	Z	Size	Ripple	Z
3900	22x26	1.30	126									
4700	22x31	1.50	98	25x26	1.50	88						
5600	22x36	1.60	82	25x26	1.60	88						
6800	22x41	1.87	68	25x31	1.87	68	30x26	1.87	75			
8200	22x46	2.20	62	25x36	2.20	62	30x31	2.20	48	35x27	2.20	68
10000	22x51	2.35	41	25x41	2.35	52	30x36	2.35	36	35x32	2.35	60
12000				25x51	2.70	41	30x36	2.70	36	35x32	2.70	47
15000							30x41	3.15	30	35x37	3.15	37
18000							30x51	3.60	28	35x42	3.60	31
22000										35x47	3.90	29
27000										35x52	4.60	25

W V μ F ψ D	35											
	22			25			30			35		
	Size	Ripple	Z	Size	Ripple	Z	Size	Ripple	Z	Size	Ripple	Z
2200	22x26	1.10	126									
2700	22x26	1.29	126									
3300	22x31	1.40	98	25x26	1.40	88						
3900	22x36	1.55	82	25x31	1.55	68						
4700	22x41	1.75	68	25x31	1.75	68	30x26	1.75	75			
5600	22x46	1.95	62	25x36	1.95	62	30x31	1.95	48	35x27	1.95	68
6800	22x51	2.20	53	25x41	2.20	52	30x36	2.20	36	35x32	2.20	60
8200				25x51	2.50	41	30x36	2.50	36	35x32	2.50	47
10000							30x41	2.80	30	35x37	2.80	37
12000							30x51	3.30	28	35x42	3.30	31
15000										35x52	4.25	25

Ripple Current (A, rms) at 105°C 120Hz

Max Impedance (Z) at 20°C 30KHz

CapXon HL Series

φ DxL(mm)

μ F \ ψ D		50											
		22			25			30			35		
		Size	Ripple	Z	Size	Ripple	Z	Size	Ripple	Z	Size	Ripple	Z
1500		22x26	1.00	126									
1800		22x31	1.10	98	25x26	1.10	88						
2200		22x36	1.30	82	25x26	1.30	88						
2700		22x41	1.45	68	25x31	1.45	68	30x26	1.45	75			
3300		22x41	1.70	68	25x36	1.70	62	30x31	1.70	48			
3900		22x51	1.90	53	25x41	1.90	52	30x36	1.90	36			
4700					25x41	2.10	52	30x36	2.10	36	35x32	2.10	47
5600					25x51	2.36	41	30x41	2.36	30	35x37	2.36	37
6800								30x51	2.70	28	35x42	2.70	31
8200								30x51	3.16	28	35x42	3.16	31
10000											35x52	3.50	25

μF φD	W V	63											
	22			25			30			35			
	Size	Ripple	Z	Size	Ripple	Z	Size	Ripple	Z	Size	Ripple	Z	
1000	22x26	1.00	126										
1200	22x26	1.15	126	25x26	1.15	88							
1500	22x36	1.30	82	25x31	1.30	68							
1800	22x41	1.45	68	25x31	1.45	68	30x26	1.45	75				
2200	22x46	1.65	62	25x36	1.65	62	30x31	1.65	48	35x27	1.65	68	
2700	22x51	1.90	53	25x41	1.90	52	30x36	1.90	36	35x32	1.90	60	
3300				25x51	2.15	41	30x36	2.15	36	35x32	2.15	47	
3900							30x41	2.40	30	35x37	2.40	37	
4700							30x51	2.70	28	35x42	2.70	31	
5600							30x51	3.10	28	35x42	3.10	31	
6800										35x52	3.50	25	

μ F	W V ψ D	80											
		22			25			30			35		
		Size	Ripple	Z	Size	Ripple	Z	Size	Ripple	Z	Size	Ripple	Z
680	22x46	0.95	148										
820	22x31	1.00	118										
1000	22x36	1.20	98	25x26	1.20	115							
1200	22x41	1.40	78	25x31	1.40	80							
1500	22x46	1.60	48	25x36	1.60	65	30x26	1.60	82				
1800	22x51	1.80	58	25x41	1.80	62	30x31	1.80	58	35x27	1.80	68	
2200				25x51	2.05	43	30x36	2.05	52	35x32	2.05	48	
2700							30x41	2.35	41	35x37	2.35	42	
3300							30x51	2.70	28	35x42	2.70	28	
3900										35x47	2.80	26	
4700										35x52	3.40	22	

μ F	ψ D	W V	100										
		22			25			30			35		
		Size	Ripple	Z	Size	Ripple	Z	Size	Ripple	Z	Size	Ripple	Z
560		22x31	0.95	118	25x26	0.95	115						
680		22x36	1.10	98	25x31	1.10	80						
820		22x41	1.40	78	25x31	1.40	80	30x26	1.40	82			
1000		22x46	1.40	75	25x36	1.40	65	30x31	1.40	58	35x27	1.40	68
1200		22x51	1.60	58	25x41	1.60	62	30x36	1.60	52	35x32	1.60	65
1500					25x51	1.85	43	30x41	1.85	41	35x32	1.85	48
1800								30x46	2.05	37	35x37	2.05	42
2200								30x51	2.40	28	35x42	2.40	28
2700											35x52	2.80	22

Ripple Current (A, rms) at 105°C 120Hz
Max Impedance (Z) at 20°C 30KHz

Snap-in

CapXon HL Series

φ DxL(mm)

μ	F	ψ	D	W V		160											
				22			25			30			35				
				Size	Ripple	Z	Size	Ripple	Z	Size	Ripple	Z	Size	Ripple	Z		
	270			22x31	0.60	565											
	330			22x36	0.80	455	25x26	0.80	525								
	390			22x36	0.85	455	25x31	0.85	415								
	470			22x46	1.10	380	25x36	1.10	365	30x31	1.10	315					
	560			22x46	1.16	380	25x36	1.16	300	30x31	1.16	315					
	680						25x46	1.30	280	30x36	1.30	262					
	820						25x46	1.43	280	30x41	1.43	345	35x32	1.43	255		
	1000									30x46	1.69	300	35x37	1.69	205		
	1200												35x47	1.95	165		
	1500												35x52	2.40	145		

μ	W V ψ D F	200											
		22			25			30			35		
		Size	Ripple	Z	Size	Ripple	Z	Size	Ripple	Z	Size	Ripple	Z
	180	22x26	0.57	645									
	220	22x31	0.65	565									
	270	22x36	0.78	455	25x26	0.78	525						
	330	22x41	0.90	405	25x31	0.90	415						
	390	22x41	0.98	405	25x36	0.98	405	30x26	0.98	405			
	470	22x41	1.15	405	25x36	1.15	405	30x26	1.15	405			
	560	22x46	1.30	345	25x36	1.30	365	30x26	1.30	405			
	680	22x51	1.45	315	25x41	1.45	300	30x31	1.45	315	35x27	1.45	345
	820				25x41	1.60	300	30x36	1.60	262	35x37	1.60	285
	1000				25x51	1.90	235	30x46	1.90	300	35x37	1.90	205
	1200							30x51	2.10	173	35x42	2.10	175

$\begin{matrix} W & V \\ \mu & F \end{matrix} \psi & D$		250											
		22			25			30			35		
		Size	Ripple	Z	Size	Ripple	Z	Size	Ripple	Z	Size	Ripple	Z
150	22x26	0.52	645										
180	22x31	0.64	565	25x26	0.64	525							
220	22x36	0.75	455	25x31	0.75	415							
270	22x41	0.85	405	25x31	0.85	415	30x26	0.85	405				
330	22x46	1.00	380	25x36	1.00	365	30x31	1.00	315	35x27	1.00	345	
390	22x51	1.10	315	25x41	1.10	300	30x36	1.10	262				
470				25x51	1.20	235	30x36	1.20	262	35x32	1.20	255	
560							30x41	1.35	345	35x37	1.35	205	
680							30x51	1.55	173	35x42	1.55	175	
820							30x47	1.70	300				
1000										35x52	2.00	145	

μ	ψ	F	W	V	350											
					22			25			30			35		
					Size	Ripple	Z	Size	Ripple	Z	Size	Ripple	Z	Size	Ripple	Z
68			22x26	0.34	795											
82			22x31	0.40	705											
100			22x36	0.50	565	25x26	0.50	655								
120			22x41	0.56	505	25x31	0.56	525	30x26	0.56	495					
150			22x46	0.63	460	25x36	0.63	435	30x31	0.63	395					
180			22x51	0.70	385	25x41	0.70	375	30x31	0.70	395					
220						25x51	0.82	305	30x36	0.82	325	35x32	0.82	310		
270									30x41	0.90	285	35x37	0.90	250		
330									30x51	1.10	215	35x42	1.10	225		
390												35x47	1.20	210		
470												35x52	1.30	175		

Ripple Current (A, rms) at 105°C 120Hz

Max Impedance (Z) at 20°C 30KHz

CapXon HL Series

W V ψ D μ F		400											
		22			25			30			35		
		Size	Ripple	Z	Size	Ripple	Z	Size	Ripple	Z	Size	Ripple	Z
56		22x26	0.32	795									
68		22x31	0.40	705	25x26	0.40	656						
82		22x36	0.45	565	25x31	0.45	525						
100		22x41	0.50	505	25x31	0.50	525	30x26	0.50	495			
120		22x41	0.55	505	25x36	0.55	435	30x31	0.55	395			
150		22x51	0.65	385	25x41	0.65	375	30x36	0.65	325			
180					25x46	0.75	350	30x36	0.75	325	35x32	0.75	310
220					25x51	0.85	305	30x42	0.85	285	35x37	0.85	250
270								30x51	1.05	215	35x42	1.05	225
330											35x47	1.10	210
390											35x52	1.20	175

Ripple Current (A, rms) at 105°C 120Hz

Max Impedance (Z) at 20°C 30KHz