

# HY SERIES ■ LONG LIFE, SLIM SIZE 105°C TYPE

## KEY FEATURES



- ALUMINUM ELECTROLYTIC CAPACITOR ■ THT type
- Endurance: 105°C ■ 10000 hours
- Slim design for height limited applications
- High reliability
- High voltage version



## SPECIFICATIONS

Items		Performance Characteristics					
Operating Temperature Range		-25 ~ +105°C					
Rated Voltage Range	$V_R$	250 ~ 450V DC					
Surge Voltage	$V_S$	$(V_R \leq 315V): V_S = 1.15 \cdot V_R$			$(V_R > 315V): V_S = 1.10 \cdot V_R$		
Capacitance Range	$C_R$	12 ~ 120 $\mu$ F					
Cap. Tolerance	$\Delta C$	$\pm 20\%$ (120Hz ■ 20°C)					
Leakage Current (20°C ■ $V_R$ applied)	$I_{LEAK}$	$\leq \sqrt{3} \cdot C_R \cdot V_R$ ■ After 5 minutes [ $I_{LEAK}$ ( $\mu$ A) ; $C_R$ ( $\mu$ F) ; $V_R$ (V) ]					
Dissipation Factor % (20°C ■ 120Hz)	tan $\delta$	$V_R$ (V DC)	250	350	400	420	450
		tan $\delta$ (%)	20	20	20	25	25
Low Temperature Characteristics at 120Hz	Z ratio max.	$V_R$ (V DC)	250	350	400	420	450
		Z-25°C/Z+20°C	3	8	8	8	8

Lifetime Test							
Endurance 105°C ( $V_R$ & $I_R$ applied)	Test	<b>10 000 hours</b>					
	$\Delta C/C_R$	$\leq \pm 20\%$ of initial measured value					
	tan $\delta$	$\leq 200\%$ of initial specified value					
	$I_{Leak}$	$\leq$ the initial specified value					
Shelf Life 105°C ( $V_R = 0$ )	Test	<b>1 000 hours</b>					
	$\Delta C/C_R$	$\leq \pm 20\%$ of initial measured value					
	tan $\delta$	$\leq 200\%$ of initial specified value					
	$I_{Leak}$	$\leq$ the initial specified value					
		Before measurement: Restore capacitor to 20°C, apply $V_R$ for 30 min according JIS-C-5101-4					

## MULTIPLIER $K_f$ for RIPPLE CURRENT vs. FREQUENCY

$V_R$ (V) / Frequency (Hz)	50/60	100/120	400	1k	100k
250 ~ 350	0.8	1	1.2	1.3	1.4
400 ~ 450	0.8	1	1.25	1.4	1.5

**STANDARD RATINGS**

Part number shows bulk version with straight leads

$V_R$ (V)	$C_R$ ( $\mu F$ )	$\phi D$ (mm)	L (mm)	$I_R$ - Max. Ripple Current +105°C - 120Hz (mA rms)	CapXon Part Number
250	22	8	35	140	HY220M250F350A
	27	8	40	165	HY270M250F400A
	27	10	30	165	HY270M250G300A
	33	10	30	180	HY330M250G300A
	39	10	35	210	HY390M250G350A
	47	10	40	280	HY470M250G400A
	47	13	30	260	HY470M250I300A
	56	10	45	330	HY560M250G450A
	56	13	35	330	HY560M250I350A
	68	10	50	380	HY680M250G500A
	68	13	35	370	HY680M250I350A
	82	10	60	490	HY820M250G600A
	82	13	40	465	HY820M250I400A
	100	13	45	500	HY101M250I450A
120	13	50	580	HY121M250I500A	
350	12	8	30	100	HY120M350F300A
	15	8	35	130	HY150M350F350A
	22	8	40	165	HY220M350F400A
	27	10	30	185	HY270M350G300A
	33	10	35	200	HY330M350G350A
	39	10	40	285	HY390M350G400A
	39	13	30	285	HY390M350I300A
	47	13	35	360	HY460M350I350A
	47	10	45	340	HY470M350G450A
	47	13	30	330	HY470M350I300A
	56	10	50	380	HY560M350G500A
	68	10	60	450	HY680M350G600A
	68	13	40	430	HY680M350I400A
	82	13	45	520	HY820M350I450A
100	13	50	580	HY101M350I500A	
400	12	8	30	130	HY120M400F300A
	15	8	35	180	HY150M400F350A
	22	8	45	230	HY220M400F450A
	27	10	30	240	HY270M400G300A
	33	10	35	290	HY330M400G350A
	39	10	40	400	HY390M400G400A
	39	13	30	400	HY390M400I300A
	47	10	45	450	HY470M400G450A
	47	13	30	440	HY470M400I300A
	56	10	50	520	HY560M400G500A
	56	13	35	500	HY560M400I350A
	68	13	40	580	HY680M400I400A
	82	13	45	650	HY820M400I450A
	100	13	50	680	HY101M400I500A

See "PACKAGING INFORMATION" to taped or formed products.

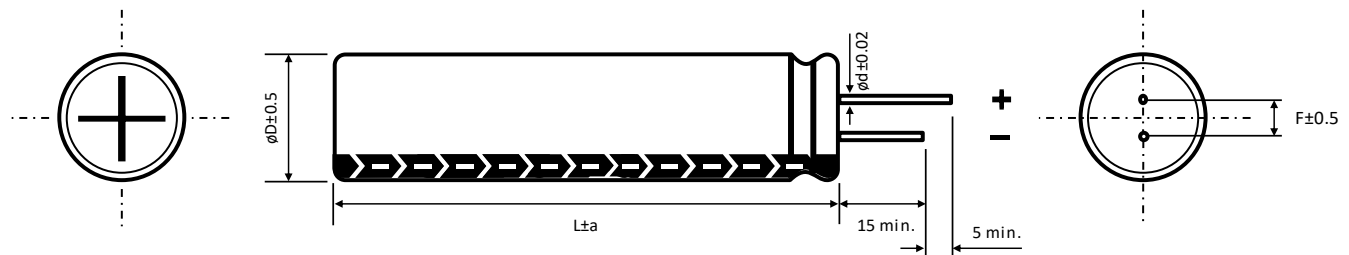
### STANDARD RATINGS

Part number shows bulk version with straight leads

$V_R$ (V)	$C_R$ ( $\mu F$ )	$\phi D$ (mm)	L (mm)	$I_R$ - Max. Ripple Current +105°C - 120Hz (mA rms)	CapXon Part Number
420	12	8	30	140	HY120M420F300A
	15	8	35	170	HY150M420F350A
	22	8	50	250	HY220M420F500A
	27	10	35	270	HY270M420G350A
	33	10	40	370	HY330M420G400A
	39	10	45	410	HY390M420G450A
	39	13	30	390	HY390M420I300A
	47	10	50	420	HY470M420G500A
	47	13	35	450	HY470M420I350A
	56	10	60	530	HY560M420G600A
	56	13	40	520	HY560M420I400A
	68	13	45	580	HY680M420I450A
82	13	50	660	HY820M420I500A	
450	12	8	30	150	HY120M450F300A
	15	8	40	190	HY150M450F400A
	22	10	30	220	HY220M450G300A
	27	10	40	280	HY270M450G400A
	33	10	40	360	HY330M450G400A
	33	13	30	370	HY330M450I300A
	39	10	50	410	HY390M450G500A
	39	13	35	420	HY390M450I350A
	47	10	50	420	HY470M450G500A
	47	13	40	480	HY470M450I400A
	56	13	45	530	HY560M450I450A
	68	13	50	620	HY680M450I500A
82	13	55	680	HY820M450I550A	

See "PACKAGING INFORMATION" to taped or formed products.




### DIMENSIONS - All dimensions in mm



$\phi D$	8	10	13
F	3.5	5	5
$\phi d$	0.5	0.6	0.6
a	1.5	2	2

**PRECAUTIONS, GUIDELINES AND PACKAGING INFORMATION**

Unless otherwise agreed in individual specifications, all products are subject to our “General Precautions and Guidelines” as well as our “Packaging Information”. Please refer to the following links in the table.

		
<p><a href="#">General Precautions &amp; Guidelines</a></p>	<p><a href="#">Packaging Information</a></p>	<p><a href="#">3D Models</a></p>

**DISCLAIMER**

All product related data (e.g. specification, statements and general information) are subject to change without any notice. It is necessary that the customer observes all product related technical / application information and handling instructions.

CapXon products are designed and manufactured according to severe quality and safety standards. Under no circumstance, CapXon warrants that any CapXon product is suitable for the purposes intended for your application, even CapXon knows the application. It is customer's duty and obligation to check and make sure that CapXon products are suitable for the purposes intended and select the correct and proper CapXon product. Customers are requested to perform a sufficient validation and reliability evaluation to assure needed safety level and reliability performance by suitable designs and to apply proper safeguards (e.g. redundancies, protective circuits).

Particular operating conditions (ambient temperature, ripple current, voltage, thermal resistance, etc.) as well as storage, production or assembly may affect the performance and the lifetime of the capacitor. Please consult CapXon for lifetime estimation, failure mode considerations or worst-case scenarios according to the product technology, product tolerances / deviations or change of the characteristics of the capacitor due to shipment, storage, handling, production and usage.

For aerospace or military application, life-saving, life-sustaining, safety critical applications or any application where failure may cause severe personal injury or death, please consult us before design-in the capacitor in your application.

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