

GL SERIES ■ LOW IMPEDANCE 105°C TYPE

KEY FEATURES



- ALUMINUM ELECTROLYTIC CAPACITOR • THT type
- Endurance: 105°C ■ 2 000 hours up to 6 000 hours
- Low impedance and high ripple current
- Wide capacitance range
- Optimized low temperature type

DISCONTINUED



SPECIFICATIONS

Items		Performance Characteristics							
Operating Temperature Range		-55 ~ +105°C							
Rated Voltage Range	V _R	6.3 ~ 63V DC							
Surge Voltage	V _S	V _S = 1.15·V _R							
Capacitance Range	C _R	0.47 ~ 10000μF							
Cap. Tolerance	ΔC	±20% (120Hz ▪ 20°C)							
Leakage Current (20°C ▪ V _R applied)	I _{LEAK}	≤ 0.01·C _R ·V _R or 3μA, whichever is greater ▪ After 2 minutes [I _{LEAK} (μA) ; C _R (μF) ; V _R (V)]							
Dissipation Factor % (20°C ▪ 120Hz)	tanδ	V _R (V DC)	6.3	10	16	25	35	50	63
		tanδ (%)	20	18	26	14	12	10	9
		For C _R ≥ 1000μF, add 2% per every multiple 1000μF of rated capacitance value							
Low Temperature Characteristics at 120Hz	Z ratio max.	V _R (V DC)	6.3	10	16	25	35	50	63
		Z-25°C/Z+20°C	4	3	2	2	1.5	1.5	1.5
		Z-40°C/Z+20°C	6	4	3	3	2	2	2
		Z-55°C/Z+20°C	8	6	5	5	4	4	4
		For capacitance > 1000μF							
		Z-25°C/Z+20°C	Add 0.5 for every multiple 1000μF of rated capacitance value						
		Z-40°C/Z+20°C	Add 1 for every multiple 1000μF of rated capacitance value						
		Z-55°C/Z+20°C	Add 1.5 for every multiple 1000μF of rated capacitance value						
Lifetime Test									
Endurance 105°C (V _R & I _R applied)	Test	2 000 hours				ø D 5 ~ 6.3 mm			
		3 000 hours				ø D 8 mm			
		6 000 hours				ø D ≥ 10 mm			
	ΔC/C _R	≤ ±20% of initial measured value							
	tanδ	≤ 200% of initial specified value							
	I _{Leak}	≤ the initial specified value							
Shelf Life 105°C (V _R = 0)	Test	1 000 hours							
	ΔC/C _R	≤ ±20% of initial measured value							
	tanδ	≤ 200% of initial specified value							
	I _{Leak}	≤ the initial specified value							
	Before measurement: Restore capacitor to 20°C, apply V _R for 30 min according JIS-C-5101-4								

STANDARD RATINGS

DISCONTINUED

Part number shows bulk version with straight leads

V _R (V)	C _R (μF)	ø D (mm)	L (mm)	Z • Max. Impedance +20°C • 100kHz (mΩ)	I _R • Max. Ripple Current +105°C • 100kHz (mA rms)	CapXon Part Number
6.3	100	5	11	950	185	GL101M6R3C110A
	120	5	11	900	190	GL121M6R3C110A
	150	6.3	11	750	210	GL151M6R3E110A
	180	6.3	11	700	240	GL181M6R3E110A
	220	6.3	11	550	300	GL221M6R3E110A
	270	6.3	11	490	310	GL271M6R3E110A
	330	6.3	15	340	320	GL331M6R3E150A
	330	8	11.5	300	390	GL331M6R3F115A
	470	6.3	15	250	435	GL471M6R3E150A
	470	8	11.5	220	430	GL471M6R3F115A
	560	8	11.5	200	480	GL561M6R3F115A
	680	8	11.5	180	510	GL681M6R3F115A
	820	8	16	140	620	GL821M6R3F160A
	1000	8	16	100	710	GL102M6R3F160A
	1000	10	12.5	120	625	GL102M6R3G125A
	1200	10	16	95	810	GL122M6R3G160A
	1500	10	16	74	1050	GL152M6R3G160A
	1800	10	20	65	1200	GL182M6R3G200A
	2200	10	20	60	1300	GL222M6R3G200A
	2200	10	25	57	1400	GL222M6R3G250A
	2700	10	25	55	1400	GL272M6R3G250A
	2700	13	20	52	1410	GL272M6R3I200A
	3300	13	20	48	1500	GL332M6R3I200A
	4700	13	25	32	1800	GL472M6R3I250A
	4700	13	30	25	1950	GL472M6R3I300A
	6800	13	30	24	2020	GL682M6R3I300A
	6800	16	25	21	2230	GL682M6R3J250A
	8200	16	31.5	20	2530	GL822M6R3J315A
	10000	16	35.5	19	2740	GL103M6R3J355A
10	22	5	11	2600	56	GL220M010C110A
	27	5	11	2400	57	GL270M010C110A
	33	5	11	2200	58	GL330M010C110A
	39	5	11	1850	95	GL390M010C110A
	47	5	11	1200	120	GL470M010C110A
	56	5	11	1050	130	GL560M010C110A
	68	5	11	890	145	GL680M010C110A
	82	5	11	750	170	GL820M010C110A
	100	5	11	480	205	GL101M010C110A
	120	5	11	440	230	GL121M010C110A
	150	6.3	11	370	270	GL151M010E110A
	180	6.3	11	350	290	GL181M010E110A
	220	6.3	11	280	330	GL221M010E110A
	270	6.3	15	250	370	GL271M010E150A

See "ADDITIONAL INFORMATION" to taped or formed products.

STANDARD RATINGS

DISCONTINUED

Part number shows bulk version with straight leads

V _R (V)	C _R (μF)	ø D (mm)	L (mm)	Z • Max. Impedance +20°C • 100kHz (mΩ)	I _R • Max. Ripple Current +105°C • 100kHz (mA rms)	CapXon Part Number
10	270	8	11.5	210	390	GL271M010F115A
	330	6.3	15	150	445	GL331M010E150A
	330	8	11.5	160	430	GL331M010F115A
	470	8	11.5	115	555	GL471M010F115A
	560	8	11.5	95	620	GL561M010F115A
	680	8	16	90	630	GL681M010F160A
	820	8	20	84	870	GL821M010F200A
	1000	8	20	70	1040	GL102M010F200A
	1000	10	16	72	1010	GL102M010G160A
	1200	10	16	62	1130	GL122M010G160A
	1500	10	20	56	1270	GL152M010G200A
	1800	10	25	45	1430	GL182M010G250A
	1800	13	20	48	1450	GL182M010I200A
	2200	13	20	40	1690	GL222M010I200A
	2700	13	20	33	1800	GL272M010I200A
	3300	13	25	29	1980	GL332M010I250A
	4700	13	30	25	2300	GL472M010I300A
	4700	16	25	29	2100	GL472M010J250A
	6800	16	31.5	23	2340	GL682M010J315A
	8200	16	35.5	19	2580	GL822M010J355A
	10000	18	31.5	17	2770	GL103M010K315A
16	10	5	11	4000	37	GL100M016C110A
	15	5	11	3520	60	GL150M016C110A
	22	5	11	2000	70	GL220M016C110A
	27	5	11	1600	110	GL270M016C110A
	33	5	11	1260	130	GL330M016C110A
	39	5	11	870	150	GL390M016C110A
	47	5	11	520	190	GL470M016C110A
	56	5	11	490	205	GL560M016C110A
	68	5	11	450	210	GL680M016C110A
	82	6.3	11	370	250	GL820M016E110A
	100	6.3	11	310	260	GL101M016E110A
	120	6.3	11	290	290	GL121M016E110A
	150	6.3	11	260	300	GL151M016E110A
	180	6.3	15	230	370	GL181M016E150A
	180	8	11.5	240	368	GL181M016F115A
	220	6.3	15	200	470	GL221M016E150A
	220	8	11.5	210	455	GL221M016F115A
	270	8	11.5	170	490	GL271M016F115A
	330	8	11.5	120	550	GL331M016F115A
	470	8	16	92	745	GL471M016F160A
	470	10	12.5	95	722	GL471M016G125A
	560	10	12.5	82	780	GL561M016G125A

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STANDARD RATINGS

DISCONTINUED

Part number shows bulk version with straight leads

V _R (V)	C _R (μF)	ø D (mm)	L (mm)	Z • Max. Impedance +20°C • 100kHz (mΩ)	I _R • Max. Ripple Current +105°C • 100kHz (mA rms)	CapXon Part Number
16	680	10	16	74	920	GL681M016G160A
	820	10	16	67	1020	GL821M016G160A
	1000	10	20	50	1180	GL102M016G200A
	1200	10	25	47	1370	GL122M016G250A
	1500	10	25	41	1470	GL152M016G250A
	1800	13	20	38	1630	GL182M016I200A
	2200	13	20	35	1800	GL222M016I200A
	2200	13	25	33	1950	GL222M016I250A
	2700	13	25	31	2050	GL272M016I250A
	3300	13	30	25	2410	GL332M016I300A
	3300	16	25	28	2340	GL332M016J250A
	4700	16	31.5	22	2650	GL472M016J315A
	4700	18	25	24	2570	GL472M016K250A
	6800	18	31.5	20	2700	GL682M016K315A
	8200	18	35.5	18	2830	GL822M016K355A
	10000	18	40	15	3300	GL103M016K400A
25	10	5	11	2100	56	GL100M025C110A
	15	5	11	1950	97	GL150M025C110A
	22	5	11	1800	120	GL220M025C110A
	27	5	11	1560	130	GL270M025C110A
	33	5	11	1200	150	GL330M025C110A
	39	5	11	820	170	GL390M025C110A
	47	5	11	500	220	GL470M025C110A
	56	5	11	440	245	GL560M025C110A
	68	6.3	11	390	270	GL680M025E110A
	82	6.3	11	330	285	GL820M025E110A
	100	6.3	11	280	300	GL101M025E110A
	120	6.3	11	220	350	GL121M025E110A
	150	6.3	15	200	420	GL151M025E150A
	180	6.3	15	180	440	GL181M025E150A
	180	8	11.5	190	435	GL181M025F115A
	220	8	11.5	125	550	GL221M025F115A
	270	8	11.5	95	620	GL271M025F115A
	330	8	16	85	740	GL331M025F160A
	330	10	12.5	82	720	GL331M025G125A
	470	10	16	65	1040	GL471M025G160A
	560	10	16	61	1070	GL561M025G160A
	680	10	20	52	1280	GL681M025G200A
	820	10	25	43	1460	GL821M025G250A
	1000	10	25	39	1530	GL102M025G250A
	1000	13	25	38	1580	GL102M025I250A
	1200	13	25	36	1800	GL122M025I250A
	1500	13	25	32	2020	GL152M025I250A

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STANDARD RATINGS

DISCONTINUED

Part number shows bulk version with straight leads

V _R (V)	C _R (μF)	ø D (mm)	L (mm)	Z • Max. Impedance +20°C • 100kHz (mΩ)	I _R • Max. Ripple Current +105°C • 100kHz (mA rms)	CapXon Part Number
25	1800	13	30	27	2300	GL182M025I300A
	2200	13	30	25	2480	GL222M025I300A
	2200	16	25	27	2405	GL222M025J250A
	2700	16	31.5	24	2670	GL272M025J315A
	3300	16	31.5	20	2960	GL332M025J315A
	3300	18	25	22	3050	GL332M025K250A
	4700	16	40	22	3490	GL472M025J400A
	4700	18	35.5	21	3520	GL472M025K355A
	6800	18	40	17	3600	GL682M025K400A
35	10	5	11	1900	70	GL100M035C110A
	15	5	11	1720	115	GL150M035C110A
	22	5	11	1360	130	GL220M035C110A
	27	5	11	1200	140	GL270M035C110A
	33	5	11	950	175	GL330M035C110A
	39	6.3	11	740	200	GL390M035E110A
	47	6.3	11	440	250	GL470M035E110A
	56	6.3	11	400	270	GL560M035E110A
	68	6.3	11	350	300	GL680M035E110A
	82	6.3	15	290	350	GL820M035E150A
	100	6.3	15	180	390	GL101M035E150A
	100	8	11.5	190	380	GL101M035F115A
	120	8	11.5	170	460	GL121M035F115A
	150	8	16	150	580	GL151M035F160A
	180	8	16	130	630	GL181M035F160A
	220	8	16	95	740	GL221M035F160A
	220	10	12.5	98	720	GL221M035G125A
	270	8	20	86	830	GL271M035F200A
	270	10	16	88	840	GL271M035G160A
	330	10	16	65	995	GL331M035G160A
	470	10	20	50	1150	GL471M035G200A
	560	10	25	48	1310	GL561M035G250A
	680	13	20	44	1440	GL681M035I200A
	820	13	20	38	1600	GL821M035I200A
	1000	13	30	36	1950	GL102M035I300A
	1200	16	25	29	2200	GL122M035J250A
	1500	16	31.5	27	2520	GL152M035J315A
	1800	16	31.5	26	2560	GL182M035J315A
	2200	16	31.5	25	2650	GL222M035J315A
	2200	18	25	26	2570	GL222M035K250A
	2700	18	31.5	23	2660	GL272M035K315A
	3300	18	35.5	20	3000	GL332M035K355A
	4700	18	40	19	3000	GL472M035K400A

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STANDARD RATINGS

DISCONTINUED

Part number shows bulk version with straight leads

V _R (V)	C _R (μF)	ø D (mm)	L (mm)	Z • Max. Impedance +20°C • 100kHz (mΩ)	I _R • Max. Ripple Current +105°C • 100kHz (mA rms)	CapXon Part Number
50	0.47	5	11	5000	15	GLR47M050C110A
	1	5	11	3950	25	GL010M050C110A
	2.2	5	11	2600	33	GL2R2M050C110A
	3.3	5	11	2000	45	GL3R3M050C110A
	4.7	5	11	1890	58	GL4R7M050C110A
	5.6	5	11	1850	80	GL5R6M050C110A
	6.8	5	11	1770	85	GL6R8M050C110A
	8.2	5	11	1720	90	GL8R2M050C110A
	10	5	11	1700	100	GL100M050C110A
	15	5	11	1530	110	GL150M050C110A
	22	6.3	11	1000	135	GL220M050E110A
	27	6.3	11	930	160	GL270M050E110A
	33	6.3	11	740	230	GL330M050E110A
	39	6.3	11	650	240	GL390M050E110A
	47	8	11.5	500	285	GL470M050F115A
	56	8	11.5	390	300	GL560M050F115A
	68	8	11.5	300	340	GL680M050F115A
	82	8	11.5	250	400	GL820M050F115A
	100	8	16	180	475	GL101M050F160A
	120	8	16	170	520	GL121M050F160A
	150	10	16	130	675	GL151M050G160A
	180	10	16	95	760	GL181M050G160A
	220	10	20	85	900	GL221M050G200A
	270	10	20	75	950	GL271M050G200A
	330	10	25	68	1050	GL331M050G250A
	470	13	20	48	1490	GL471M050I200A
	560	13	20	45	1550	GL561M050I200A
	680	13	25	41	1840	GL681M050I250A
	820	13	30	36	2060	GL821M050I300A
	1000	13	40	33	2200	GL102M050I400A
	1000	16	31.5	30	2130	GL102M050J315A
	1200	16	31.5	27	2520	GL122M050J315A
	1500	16	35.5	26	2700	GL152M050J355A
	1800	18	31.5	25	2800	GL182M050K315A
	2200	18	35.5	24	2900	GL222M050K355A
	2700	18	40	21	2970	GL272M050K400A

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STANDARD RATINGS

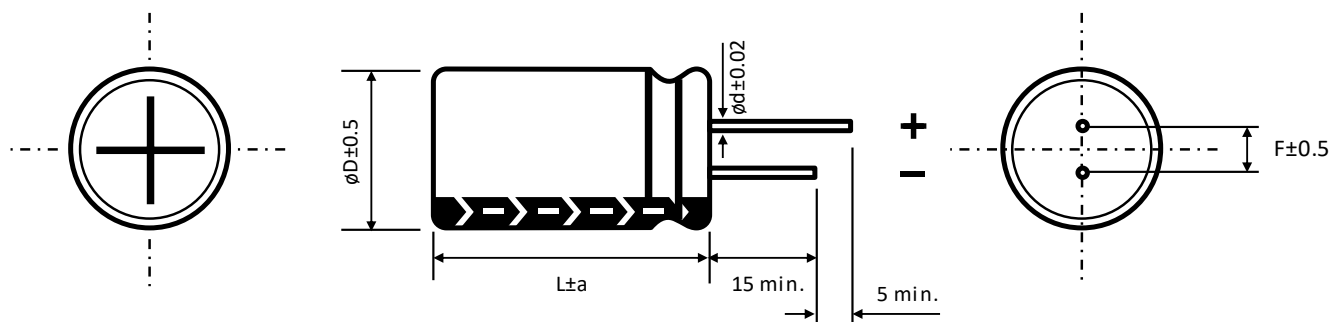
DISCONTINUED

Part number shows bulk version with straight leads

V _R (V)	C _R (μF)	ø D (mm)	L (mm)	Z • Max. Impedance +20°C • 100kHz (mΩ)	I _R • Max. Ripple Current +105°C • 100kHz (mA rms)	CapXon Part Number
63	0.47	5	11	5000	16	GLR47M063C110A
	1	5	11	3950	27	GL010M063C110A
	2.2	5	11	2600	38	GL2R2M063C110A
	3.3	5	11	2000	48	GL3R3M063C110A
	4.7	5	11	1890	62	GL4R7M063C110A
	5.6	5	11	1820	85	GL5R6M063C110A
	6.8	5	11	1750	90	GL6R8M063C110A
	8.2	5	11	1690	100	GL8R2M063C110A
	10	5	11	1650	105	GL100M063C110A
	15	5	11	1470	110	GL150M063C110A
	22	6.3	11	800	170	GL220M063E110A
	27	6.3	11	750	190	GL270M063E110A
	33	8	11.5	610	245	GL330M063F115A
	39	8	11.5	580	270	GL390M063F115A
	47	8	11.5	560	290	GL470M063F115A
	56	8	11.5	380	320	GL560M063F115A
	68	8	16	300	480	GL680M063F160A
	82	8	16	280	510	GL820M063F160A
	100	10	16	240	590	GL101M063G160A
	120	10	16	160	660	GL121M063G160A
	150	10	20	110	790	GL151M063G200A
	180	10	20	95	850	GL181M063G200A
	220	10	25	82	1020	GL221M063G250A
	220	13	20	80	1024	GL221M063I200A
	270	13	20	72	1100	GL271M063I200A
	330	10	30	64	1200	GL331M063G300A
	330	13	25	67	1160	GL331M063I250A
	470	16	25	48	1750	GL471M063J250A
	560	16	25	44	1830	GL561M063J250A
	680	16	31.5	40	2070	GL681M063J315A
	820	16	31.5	35	2100	GL821M063J315A
	1000	16	35.5	31	2450	GL102M063J355A
	1200	18	31.5	26	2500	GL122M063K315A
	1500	18	35.5	25	2700	GL152M063K355A
	1800	18	40	24	2900	GL182M063K400A
	2200	18	40	23	2990	GL222M063K400A

See "ADDITIONAL INFORMATION" to taped or formed products.

DIMENSIONS - All dimensions in mm



ϕD	5	6.3	8		10	13	16	18
F	2	2.5	3.5		5	5	7.5	7.5
ϕd	0.5		L < 20	L ≥ 20	0.6		0.8	
			0.5	0.6				

a	$\phi D < 16$	$\phi D = 16$		$\phi D = 18$	
	1.5	L = 25 to 35.5	L < 25 and L ≥ 40	L = 25 to 31.5	L < 25 and L ≥ 35.5
		1.5	2	1.5	2

MULTIPLIER K_f for RIPPLE CURRENT vs. FREQUENCY

C_R (μF) / Frequency (Hz)	50/60	100/120	400	1k	10k	100k
$C_R \leq 10$	0.47	0.59	0.76	0.85	0.97	1
$10 < C_R \leq 100$	0.52	0.62	0.8	0.89	0.97	1
$100 < C_R \leq 1000$	0.58	0.72	0.84	0.9	0.98	1
$1000 < C_R$	0.63	0.78	0.87	0.91	0.98	1

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.

General Precautions & Guidelines	Packaging Information	3D Models

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.

Except for the written expressed warranties, CapXon does not impliedly, by assumption or whatever else, warrant, undertake, promise any other warranty or guaranty for any CapXon product.

For further information, please visit our website www.capxongroup.com or contact CapXon directly.