



How to Select a GLI Capacitor

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INTRODUCTION

This application note shows in a four-step approach how somebody can select the most suitable capacitor from the GLI series for their application.

STEP 1

First, a Request for Power Electronic Capacitors needs to be filled out by the customer; orange blocks are mandatory, yellow ones are optional.

Request for Power Electronic Capacitors (Example and Extract)

RFQ FOR PECS	EXAMPLE / UNIT	CUSTOMER INPUT	
PROJECT	Name	xyz	
APPLICATION	AC/DC, filter etc.	Voltage converter	(1)
ENVIRONMENTAL	Humidity, sea water, altitude		
OUTLINE	Rectangular / tubular	Tubular	(2)
QUANTITY	pcs, pcs/a		
APPLICABLE STANDARDS	IEC 61071, IEC 61881-1	IEC 61071	(5)
TECHNOLOGY	All film, metalized PP, etc.	Metalized PP	(4)
IMPREGNATION AGENT	Dry resin, castor oil, synthetic oil	Dry	(3)
RATED CAPACITANCE	μF	50 μF	(8)
CAPACITOR TOLERANCE	$\pm \%$	$\pm 5 \%$	
RATED AC VOLTAGE	V_{AC}		
RATED DC VOLTAGE	V_{DC}	1250 V_{DC}	(6)
RIPPLE VOLTAGE	V_{pp}	100 V_{pp}	(7)
RATED FREQUENCY (AC)	Hz		
RIPPLE FREQUENCY (DC)	Hz	100 Hz	
MAX. PEAK CURRENT (I)	kA		
MAX. RMS CURRENT ($I_{MAX.}$)	A_{RMS}	40 A_{RMS}	(9)

STEP 2

With the customer input in the example above, we can see that it is a voltage converter application (1) with a tubular outline (2), making the GLI series applicable.

The GLI series features dry (3) and metalized PP (4) technology. The devices' design is based on the IEC 61071 or IEC 61881-1 standard (5).

STEP 3

Taking all the specified electrical features into consideration, in particular the DC voltage U_{NDC} (6) including the ripple peak (7), the requested capacitance C_n (8), and the continuous maximum RMS current $I_{max.}$ (9), we can already select the most suitable capacitor from the GLI datasheet table (extract):



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												(12)	(13)
TYPE DESCRIPTION													
(11)	TYPE GLI...-... B / I	C _N (μF)	U _{NDC} (V _{DC})	R _S (mΩ)	R _{th} (K/W)	I _{max.} (A)	Î (kA)	Î _S (kA)	H (mm)	DIA. (mm)	MOQ / PU (pcs)	DRAWING NO.	
GLI 700, U _{NDC} = 700 V _{DC}													
	700-35	35	700	0.4	6.4	80	1.0	3.0	38	88	4	1 and 2	
	700-160	160	700	0.6	6.0	60	1.3	3.9	56	88	4	1 and 2	
	700-230	230	700	0.8	5.6	50	1.3	4.0	68	88	4	1 and 2	
GLI 900, U _{NDC} = 900 V _{DC}													
	900-25	25	900	0.4	6.5	80	0.8	2.4	38	88	4	1 and 2	
	900-100	100	900	0.7	6.1	55	1.0	3.0	56	88	4	1 and 2	
	900-150	150	900	0.6	5.7	50	1.1	3.3	68	88	4	1 and 2	
GLI 1100, U _{NDC} = 1100 V _{DC}													
	1100-15	15	1100	0.5	6.7	60	0.6	1.9	38	88	4	1 and 2	
	1100-75	75	1100	0.8	6.2	55	0.9	2.7	56	88	4	1 and 2	
	1100-100	100	1100	1.0	5.8	50	0.9	2.6	68	88	4	1 and 2	
GLI 1250, U _{NDC} = 1250 V _{DC}													
(10)	1250-50	50	1250	1.0	6.3	50	0.7	2.1	56	88	4	1 and 2	
	1250-75	75	1250	1.2	5.9	47	0.8	2.3	68	88	4	1 and 2	

STEP 4

The required specs in this example lead to the yellow marked GLI 1250-50 type of capacitor **(10)**. The type of terminal B (= bolt) or I (= insert) is customizable **(11)**. Besides other electrical parameters, you can find the mechanical dimensions for the height H = 56 mm and the diameter DIA. = 88 mm **(12)**. The minimum order quantity (MOQ) is same as the packing unit (PU) and indicates almost four pieces **(13)**.