

GCB03 Series

3 Watts

- 2:1 Input range
- DIP24 Industry standard package
- Single and dual outputs
- Optional isolation up to 3500VDC
- -40 to +85°C Operation
- Plastic case optional
- 5 Year warranty



The GCB03 series of low cost DC/DC converters come in both single and dual outputs in a DIP 24 pin package. Inputs are available in 12, 24 & 48V versions with 2:1 range and outputs from 3.3 to 24V single and dual. The units operate from -40 to +85°C. High volumes are held in stock for the popular models. All models have a FIDUS 5 year warranty.

Dimensions:

1.25 x 0.8 x 0.4" (31.75 x 20.32 x 10.16mm)

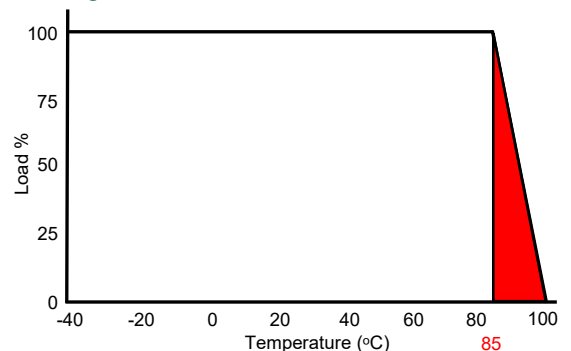
Models & Ratings

Model Number ^{(2),(3)}	Input Voltage	Output Voltage	Output Current	Input Current		Maximum Capacitive Load	Efficiency
				No Load	Full Load		
GCB031203	9-18V	3.3V	900mA	22mA	343mA	470uF	72%
GCB031205		5V	600mA	22mA	328mA	470uF	76%
GCB031212		12V	250mA	22mA	312mA	47uF	80%
GCB031215		15V	200mA	22mA	312mA	47uF	80%
GCB031224		24V	125mA	22mA	313mA	22uF	80%
GCB031203D		±3.3V	±450mA	22mA	343mA	±220uF	72%
GCB031205D		±5V	±300mA	22mA	328mA	±220uF	76%
GCB031212D		±12V	±125mA	22mA	312mA	±22uF	80%
GCB031215D		±15V	±100mA	22mA	312mA	±22uF	80%
GCB031224D		±24V	±63mA	22mA	313mA	±10uF	80%
GCB032403	18-36V	3.3V	900mA	12mA	171mA	470uF	72%
GCB032405 ⁽¹⁾		5V	600mA	12mA	164mA	470uF	76%
GCB032412		12V	250mA	12mA	156mA	47uF	80%
GCB032415		15V	200mA	12mA	152mA	47uF	82%
GCB032424		24V	125mA	12mA	153mA	22uF	82%
GCB032403D		±3.3V	±450mA	12mA	171mA	±220uF	72%
GCB032405D		±5V	±300mA	12mA	160mA	±220uF	78%
GCB032412D		±12V	±125mA	12mA	152mA	±22uF	82%
GCB032415D		±15V	±100mA	12mA	152mA	±22uF	82%
GCB032424D		±24V	±63mA	12mA	153mA	±10uF	82%
GCB034803	36-72V	3.3V	900mA	8mA	86mA	470uF	72%
GCB034805		5V	600mA	8mA	82mA	470uF	76%
GCB034812		12V	250mA	8mA	78mA	47uF	80%
GCB034815		15V	200mA	8mA	78mA	47uF	80%
GCB034824		24V	125mA	8mA	78mA	22uF	80%
GCB034803D		±3.3V	±450mA	8mA	86mA	±220uF	72%
GCB034805D		±5V	±300mA	8mA	82mA	±220uF	76%
GCB034812D		±12V	±125mA	8mA	78mA	±22uF	80%
GCB034815D		±15V	±100mA	8mA	78mA	±22uF	80%
GCB034824D		±24V	±63mA	8mA	78mA	±10uF	80%

Notes

1. High stock items
2. Add 'P' to model number for plastic case
3. Add 'H' to model number for 3500VDC isolation.
4. Under no load conditions the unit may not meet all specifications
5. Do not operate continuously in the red area of the derating curve

Derating curve



Input	
Parameter	Rating
Input voltage range	See table
Input reflected ripple current	35mA pk-pk through 12uH inductor
Input surge (100mS max)	12V Models 24VDC Max. 24V Models 40VDC Max. 48V Models 80VDC Max.
Input filter	PI Type

Output

Parameter	Minimum	Typical	Maximum	Units	Notes & Conditions
Output voltage	3.3		24	VDC	See Model & Ratings table
Set point accuracy			±1	%	
Line regulation			±0.5	%	Low line to High line
Load regulation			±1.5	%	3.3 and ±3.3V outputs
			±0.5		All other outputs
Minimum load	0			%	
Ripple & Noise			60	mV pk-pk	Measured with 1uF ceramic capacitor
Short circuit protection					Continuous with automatic recovery
Maximum capacitive load					See Model and Ratings table

General

Parameter	Minimum	Typical	Maximum	Units	Notes & Conditions
Efficiency	72		82	%	See Model & Ratings table
Isolation	1500		3500	VDC	Plastic case, input to output
			1000		Metal case, input to output
Isolation resistance			1000	M Ohm	
Isolation capacitance		500		pF	
Switching frequency		266		KHz	
Power density			7.5	W/in ³	
MTBF		>1.121		MHrs	As per MIL-HDBK-217F, 25°C GB

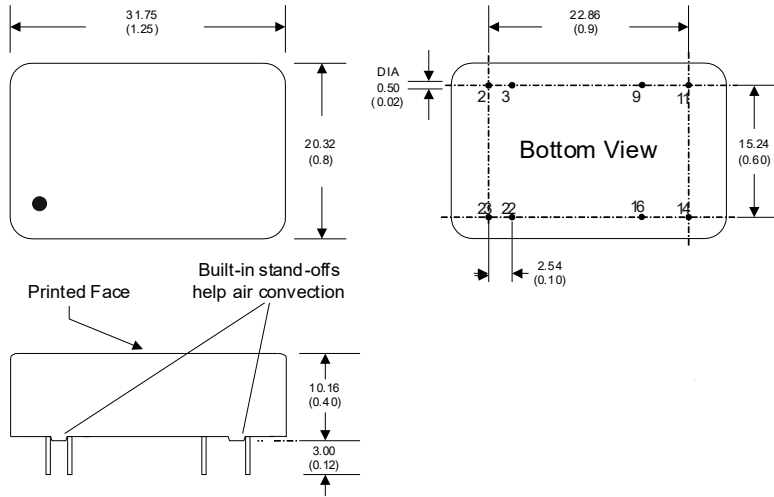
Environmental

Parameter	Minimum	Typical	Maximum	Units	Notes & Conditions
Operating temperature	-40		85	°C	See derating curve
Storage temperature	-40		125	°C	
Case temperature			100	°C	
Cooling					Convection cooled
Humidity			95	% RH	Non-condensing
Temperature coefficient			±0.02	%/°C	

EMC: Emissions

	Standard	Test level	Notes & Conditions
Conducted	EN55022	Class A	See application notes
Radiated	EN55022	Class A	

Mechanical Details



Pin Connections		
Pin	Single	Dual
2	-Vin	-Vin
3	-Vin	-Vin
9	N.P	0V
11	N.C	-Vout
14	+Vout	+Vout
16	-Vout	0V
22	+Vin	+Vin
23	+Vin	+Vin

Notes

1. All dimensions shown in millimetres (inches)
2. Pin diameter 0.5 ± 0.05 (0.02 ± 0.002)
3. Case tolerance ± 0.5 (± 0.002)

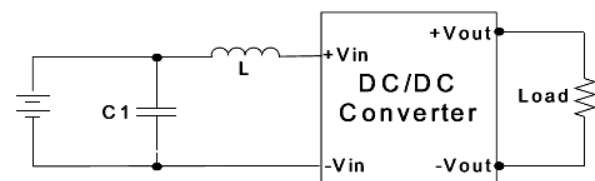
Physical

Parameter	Rating
Case material	Nickel coated copper (standard)
Pin material	0.5mm Brass solder coated
Potting material	Epoxy (UL94V-0)
Weight	17g Metal case. 13.5g Plastic case
Dimensions	1.25 x 0.8 x 0.4"
Soldering temperature	1.5mm from case, 10s and 260°C max.

Application notes

EMI Filter

The input filter components C1 and L1 can be fitted to help meet conducted emission requirements for the system. They should be mounted as close as possible to the module. Lead lengths should be minimized and where possible avoid running input and output tracks under the module as part of good design practice for best EMC performance. If the module is embedded in a system running from a AC/DC converter, this will have its own additional immunity protection and EMI filtering that will impact the overall system EMI performance.



C1	L1
100uF, 100V	12uH