

10 Watts

- 2:1 Input range
- DIP24 Industry standard package
- Single and dual outputs
- Efficiency up to 90%
- 1500VDC Isolation
- -40 to +85°C Operation
- 5 Year warranty



The GCB10 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 nominal versions with 2:1 range and outputs from 2.5 to 15V single and dual. The units operate from -40 to +85°C and have efficiencies up to 90%. 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)

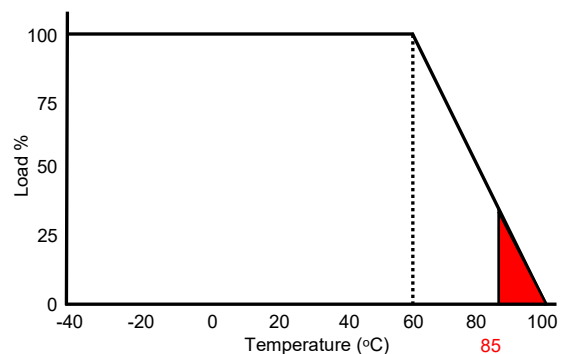
Models & Ratings

Model Number	Input Voltage	Output Voltage	Output Current	Input Current		Maximum Capacitive Load	Efficiency
				No Load	Full Load		
GCB101202	9-18V	2.5V	3000mA	10mA	791mA	2200uF	81%
GCB101203		3.3V	3000mA	10mA	1006mA	2200uF	84%
GCB101205		5V	2000mA	10mA	992mA	2200uF	86%
GCB101212		12V	833mA	10mA	980mA	820uF	87%
GCB101215		15V	667mA	10mA	958mA	470uF	89%
GCB101212D		±12V	±416mA	10mA	980mA	±220uF	87%
GCB101215D		±15V	±333mA	10mA	969mA	±150uF	88%
GCB102402	18-36V	2.5V	3000mA	10mA	381mA	2200uF	84%
GCB102403		3.3V	3000mA	10mA	497mA	2200uF	85%
GCB102405 ⁽¹⁾		5V	2000mA	10mA	479mA	2200uF	89%
GCB102412		12V	833mA	10mA	485mA	820uF	88%
GCB102415		15V	667mA	10mA	485mA	470uF	88%
GCB102412D		±12V	±416mA	10mA	485mA	±220uF	88%
GCB102415D		±15V	±333mA	10mA	474mA	±150uF	90%
GCB104802	36-75V	2.5V	3000mA	10mA	191mA	2200uF	84%
GCB104803		3.3V	3000mA	10mA	249mA	2200uF	85%
GCB104805		5V	2000mA	10mA	242mA	2200uF	88%
GCB104812		12V	833mA	10mA	245mA	820uF	87%
GCB104815		15V	667mA	10mA	242mA	470uF	88%
GCB104812D		±12V	±416mA	10mA	245mA	±220uF	87%
GCB104815D		±15V	±333mA	10mA	245mA	±150uF	87%

Notes

1. High stock items
2. Under no load conditions the unit may not meet all specifications
3. 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	20mA pk-pk through 12uH inductor
Input surge (100mS max)	12V Models 25VDC Max. 24V Models 50VDC Max. 48V Models 100VDC Max.
Input filter	PI Type

Output

Parameter	Minimum	Typical	Maximum	Units	Notes & Conditions
Output voltage	-15		15	VDC	See Model & Ratings table
Set point accuracy			±1	%	
Line regulation			±0.5	%	Low line to High line
Load regulation			±0.5	%	Single outputs 0 to 100%
			±1		Dual outputs 0 to 100%
			±1		3.3V outputs 0 to 100%
Minimum load	0			%	
Cross regulation			±5	%	On dual output models when one load is varied by 25 to 100% and the other is 100% load.
Ripple & Noise			75	mV pk-pk	Measured with 20MHz bandwidth and 1.0uF ceramic capacitor
Transient response			±3	% Deviation	For a 25% load change, recovery to within 3% within 300uS typically.
Short circuit protection					Continuous with automatic recovery
Maximum capacitive load					See Model and Ratings table

General

Parameter	Minimum	Typical	Maximum	Units	Notes & Conditions
Efficiency	81		90	%	See Model & Ratings table
Isolation			1500	VDC	Input to output
Isolation resistance	1000			M Ohm	
Isolation capacitance		1000		pF	
Switching frequency		330		KHz	
Power density			25	W/In ³	
MTBF		>1		MHrs	As per MIL-HDBK-217F, 25°C GB

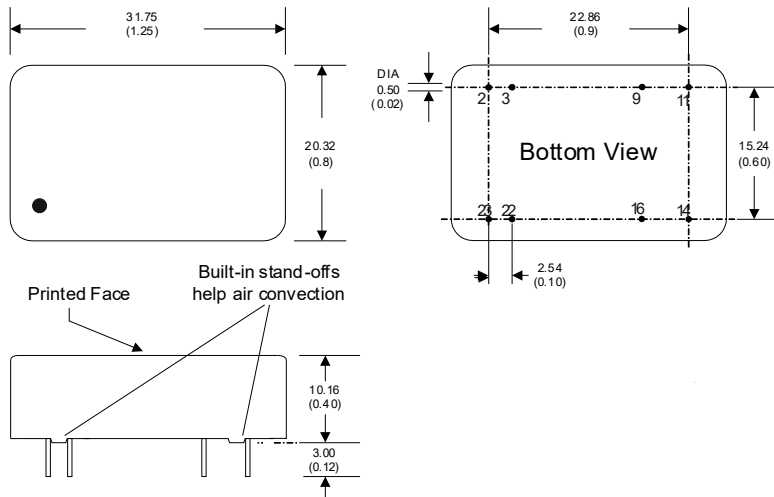
Environmental

Parameter	Minimum	Typical	Maximum	Units	Notes & Conditions
Operating temperature	-40		85	°C	-40°C to 60°C at 100% load. 40% load at 85degC.
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)

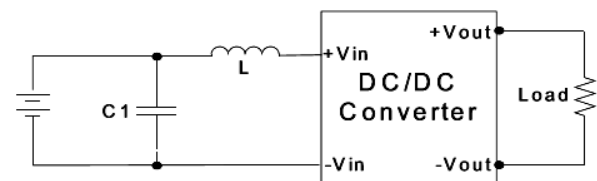
Physical

Parameter	Rating
Case material	Nickel-coated copper
Pin material	0.5mm Brass solder coated
Potting material	Epoxy (UL94V-0)
Weight	17g
Dimensions	1.25 x 0.8 x 0.40"
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.



Model number	C1	L1
GCB1012XX	100uF, 100V	12uH
GCB1024XX	100uF, 100V	12uH
GCB1048XX	100uF, 100V	12uH