

## 6 Watts

- 2:1 Input range
- DIP24 Industry standard package
- Single and dual outputs
- Optional isolation up to 3500VDC
- Efficiency up to 83%
- Plastic case optional
- 5 Year warranty



The GCP06 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 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)

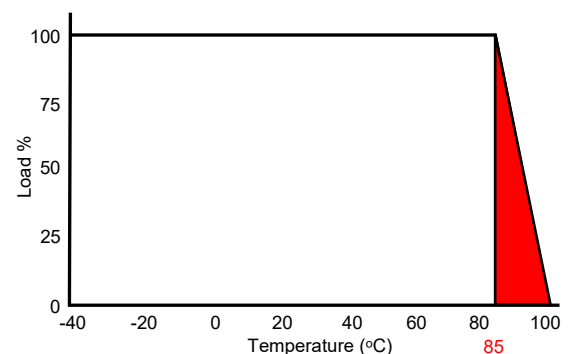
## Models & Ratings

Model Number <sup>(2)(3)</sup>	Input Voltage	Output Voltage	Output Current	Input Current		Maximum Capacitive Load	Efficiency
				No Load	Full Load		
GCP061203	9-18V	3.3V	1400mA	30mA	527mA	1000uF	73%
GCP061205		5V	1200mA	30mA	649mA	1000uF	77%
GCP061212		12V	500mA	30mA	617mA	330uF	81%
GCP061215		15V	400mA	30mA	625mA	220uF	80%
GCP061224		24V	250mA	30mA	625mA	68uF	80%
GCP061205D		±5V	±600mA	30mA	649mA	±330uF	77%
GCP061212D		±12V	±250mA	30mA	625mA	±100uF	80%
GCP061215D		±15V	±200mA	30mA	632mA	±47uF	79%
GCP061224D		±24V	±125mA	30mA	625mA	±33uF	80%
GCP062403	18-36V	3.3V	1400mA	20mA	256mA	1000uF	75%
GCP062405 <sup>(1)</sup>		5V	1200mA	20mA	313mA	1000uF	80%
GCP062412		12V	500mA	20mA	313mA	330uF	80%
GCP062415		15V	400mA	20mA	304mA	220uF	82%
GCP062424		24V	250mA	20mA	305mA	68uF	82%
GCP062405D		±5V	±600mA	20mA	321mA	±330uF	78%
GCP062412D		±12V	±250mA	20mA	312mA	±100uF	80%
GCP062415D		±15V	±200mA	20mA	312mA	±47uF	80%
GCP062424D		±24V	±125mA	20mA	312mA	±33uF	80%
GCP064803	36-72V	3.3V	1400mA	12mA	128mA	1000uF	75%
GCP064805		5V	1200mA	12mA	156mA	1000uF	80%
GCP064812		12V	500mA	12mA	156mA	330uF	80%
GCP064815		15V	400mA	12mA	151mA	220uF	83%
GCP064824		24V	250mA	12mA	151mA	68uF	83%
GCP064805D		±5V	±600mA	12mA	158mA	±330uF	79%
GCP064812D		±12V	±250mA	12mA	156mA	±100uF	80%
GCP064815D		±15V	±200mA	12mA	156mA	±47uF	80%
GCP064824D		±24V	±125mA	12mA	156mA	±33uF	80%

### Notes

1. High stock items
2. Add 'P' to model number for plastic case
3. Add 'H' to model number for 3500VDC isolation (plastic case version only)
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

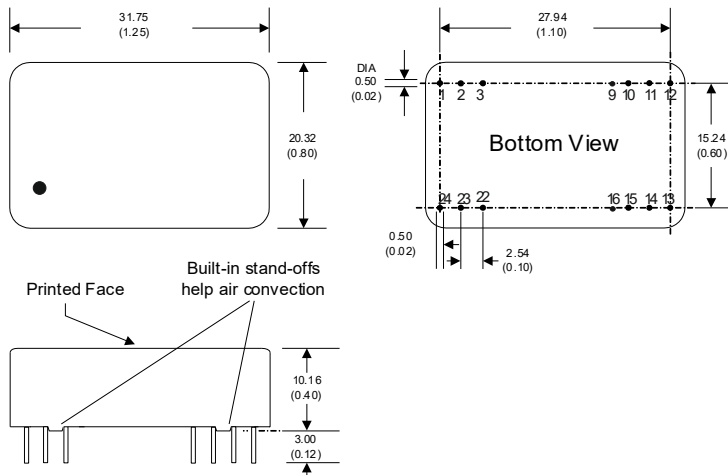
Output					
Parameter	Minimum	Typical	Maximum	Units	Notes & Conditions
Output voltage	3.3		24	VDC	See Model & Ratings table
Set point accuracy			±1	%	
Line regulation			±0.5	%	Low line to High line
Load regulation			±1.5	%	3.3 and ±3.3V outputs
			±0.5		All other outputs
Minimum load	0			%	
Ripple & 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	73		83	%	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		470		pF	
Switching frequency		266		KHz	
Power density			15	W/In <sup>3</sup>	
MTBF		>1.121		KHrs	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	Single -H	Dual -H
1	+Vin	+Vin	N.P	N.P
2	N.C	-Vout	-Vin	-Vin
3	N.C	0V	-Vin	-Vin
9	N.P	N.P	N.P	0V
10	-Vout	0V	N.P	N.P
11	+Vout	+Vout	N.C	-Vout
12	-Vin	-Vin	N.P	N.P
13	-Vin	-Vin	N.P	N.P
14	+Vout	+Vout	+Vout	+Vout
15	-Vout	0V	N.P	N.P
16	N.P	N.P	-Vout	0V
22	N.C	0V	+Vin	+Vin
23	N.C	-Vout	+Vin	+Vin
24	+Vin	+Vin	N.P	N.P

## Physical

Parameter	Rating
Case material	Nickel coated copper
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.

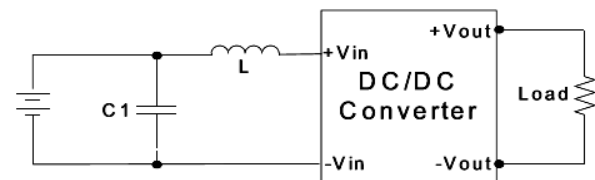
## Notes

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

## 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