



## 15 Watts

### Features:

- ◆ 2:1 Input range
- ◆ Single and Dual Outputs
- ◆ 2 X 1" package
- ◆ -40 to +85°C operation
- ◆ Efficiency up to 87%
- ◆ Meets EN55022 class A (No components)
- ◆ 5 Year Warranty

Dimensions: 2.00 x 1.00 x 0.40" (50.80 x 25.40 x 10.16 mm)

### Description

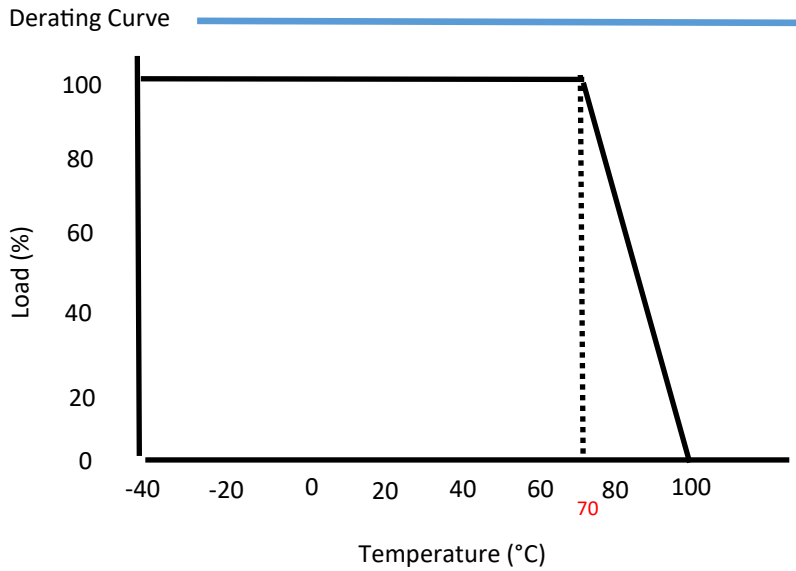
The QHCA15 series of low cost DC/DC converters come in both single and dual outputs. Inputs are available in 12, 24 & 48 versions with 2:1 range and outputs from 3.3 to 24V single and dual. The units operate from -40 to +85°C. High volumes are held in stock for the popular models. All models have a Quiver 5 year warranty.

### Models & Ratings

Model Number <sup>(2)</sup>	Input Voltage	Output Voltage	Output Current	Input Current		Maximum Capacitive Load	Efficiency
				No Load	Full Load		
QHCA151203	9-18V	3.3V	3000mA	30mA	1031mA	3300uF	80%
QHCA151205		5V	3000mA	30mA	1524mA	3300uF	82%
QHCA151212		12V	1250mA	30mA	1470mA	1000uF	85%
QHCA151215		15V	1000mA	30mA	1470mA	680uF	85%
QHCA151224		24V	625mA	30mA	1453mA	470uF	86%
QHCA151205D		±5V	±1500mA	30mA	1524mA	±1000uF	82%
QHCA151212D		±12V	±625mA	30mA	1488mA	±470uF	84%
QHCA151215D		±15V	±500mA	30mA	1488mA	±330uF	84%
QHCA151224D		±24V	±312mA	30mA	1470mA	±220uF	85%
QHCA152403		18-36V	3.3V	3000mA	25mA	515mA	3300uF
QHCA152405 <sup>(1)</sup>	5V		3000mA	25mA	744mA	3300uF	84%
QHCA152412	12V		1250mA	25mA	735mA	1000uF	85%
QHCA152415 <sup>(1)</sup>	15V		1000mA	25mA	726mA	680uF	86%
QHCA152424	24V		625mA	25mA	718mA	470uF	87%
QHCA152405D	±5V		±1500mA	25mA	753mA	±1000uF	83%
QHCA152412D	±12V		±625mA	25mA	726mA	±470uF	86%
QHCA152415D	±15V		±500mA	25mA	726mA	±330uF	86%
QHCA152424D	±24V		±312mA	25mA	718mA	±220uF	87%
QHCA154803	36-72V		3.3V	3000mA	20mA	257mA	3300uF
QHCA154805		5V	3000mA	20mA	372mA	3300uF	84%
QHCA154812		12V	1250mA	20mA	363mA	1000uF	86%
QHCA154815		15V	1000mA	20mA	359mA	680uF	87%
QHCA154824		24V	625mA	20mA	359mA	470uF	87%
QHCA154805D		±5V	±1500mA	20mA	372mA	±1000uF	84%
QHCA154812D		±12V	±625mA	20mA	363mA	±470uF	86%
QHCA154815D		±15V	±500mA	20mA	359mA	±330uF	87%
QHCA154824D		±24V	±312mA	20mA	359mA	±220uF	87%

### Notes

1. High stock items
2. Add 'H' to model number for 3500VDC isolation
3. Under no load conditions, the unit may not meet all specifications.



Input	
Parameter	Rating
Input voltage range	See table
Input reflected ripple current	35mA 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	3.3		24	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% load change
			±1		Dual outputs 0 to 100% load change
Ripple & Noise			100	mV pk-pk	Measured with 1uF ceramic capacitor. 20MHz bandwidth
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	80		87	%	See Model & Ratings table
Isolation	1500		3500	VDC	Input to output.
Isolation resistance	1000			M Ohm	
Isolation capacitance		500		pF	
Switching frequency		200		KHz	Single outputs
Power density			18.75	W/In <sup>3</sup>	
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	100% load at 70°C. 50% at 85°C
Storage temperature	-40		125	°C	
Case temperature			100	°C	
Cooling					Convection cooled
Humidity			95	% RH	Non-condensing
Temperature coefficient			±0.02	%/°C	

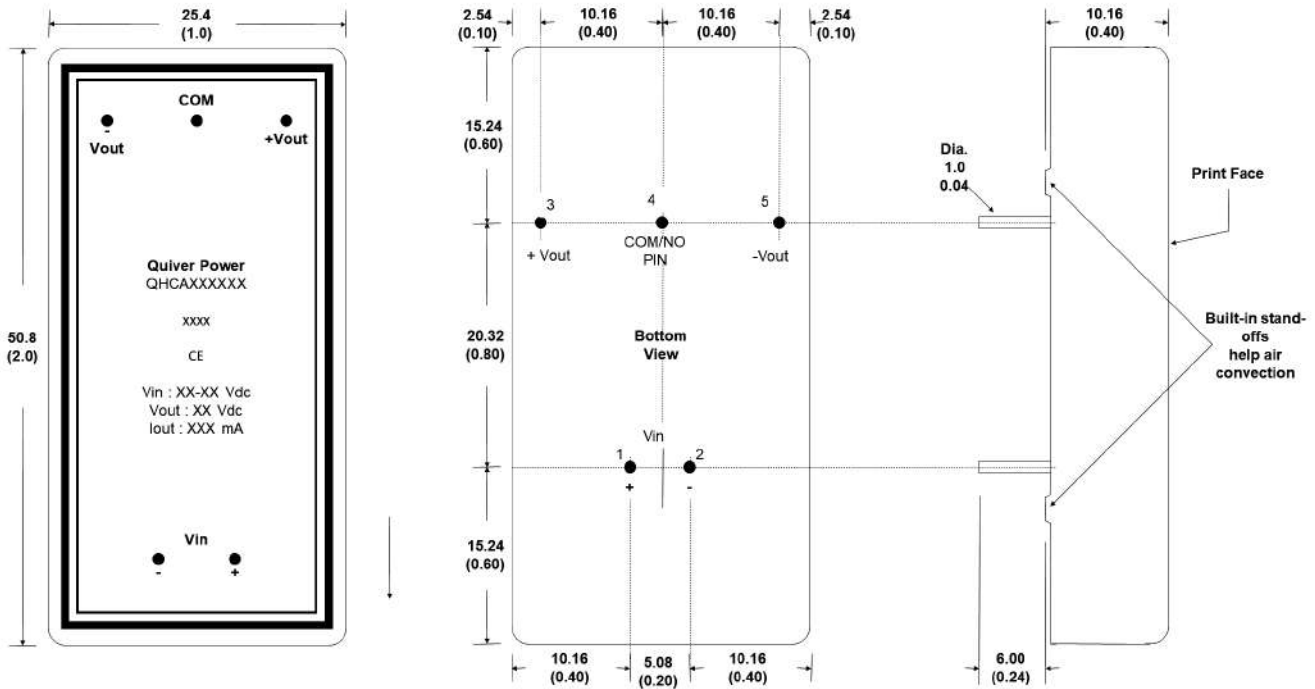
## EMC: Emission

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

## EMC: Immunity

Parameter	Standard	Test level	Criteria	Notes & Conditions
ESD	EN61000-4-2		A	
Radiated	EN61000-4-3		A	
EFT/Burst	EN61000-4-4		A	
Surges	EN61000-4-5		A	A 220uF/100V capacitor required
Conducted	EN61000-4-6		A	
Magnetic fields	EN61000-4-8		A	

## Mechanical Details



### Physical

Parameter	Rating
Case material	Nickel coated copper
Pin material	1.0mm Brass solder coated
Potting material	Epoxy (UL94V-0)
Weight	31g
Dimensions	2.00 x 1.00 x 0.40"
Soldering temperature	1.5mm from case ,10s and 260°C max.

### Pin Connections

Pin	Single	Dual
1	+Vin	+Vin
2	-Vin	-Vin
3	+Vout	+Vout
4	N.P	0V
5	-Vout	-Vout

### Notes

- All dimensions shown in millimetres (inches)
- Pin Diameter  $0.5 \pm 0.05$  ( $0.02 \pm 0.002$ )
- Case Tolerance  $\pm 0.5$  ( $\pm 0.002$ )