



Size:  
2.28 x 1.45 x 0.50 inches  
(57.9 x 36.8 x 12.7 mm)

**Applications:**

- Wireless Networks
- Telecom/Datacom
- Industry Control Systems
- Distributed Power Architectures
- Semiconductor Equipment

**FEATURES**

- Soft Start
- Single Outputs
- Input Under Voltage Protection
- High Efficiency up to 93%
- Remote ON/OFF Control
- 2:1 Wide Input Voltage Ranges
- No Minimum Load Required
- 2250VDC I/O Basic Insulation
- Voltage Adjustability
- Low Stand-by Power Consumption
- Industry Standard Quarter-brick Package
- Up to 108 Watts Maximum Output Power
- Short Circuit, Over Voltage, Over Load, & Over Temp. Protection
- UL60950-1, EN60950-1, and IEC60950-1 Safety Approvals
- CE Mark Meets 2006/95/EC, 2011/95/EC, and 2004/108/EC
- Compliant to RoHS EU Directive 2011/65/EU
- Optional Heatsinks Available (Suffix "HS")
- Threaded (Standard) or Thru-Hole (Optional) Inserts Available

**DESCRIPTION**

The DCQA100 series of DC/DC power converters provides up to 108 Watts of output power in a 2.28" x 1.45" x 0.5" industry standard quarter-brick package. This series has single output models with 2:1 wide input voltage ranges of 8.5-22VDC, 16.5-36VDC, and 33-75VDC. Some features include high efficiency up to 93%, 2250VDC I/O basic insulation, and remote ON/OFF control. These converters are also protected against input under voltage, short circuit, over voltage, over load, and over temperature conditions. All models are RoHS compliant and have UL60950-1, EN60950-1, and IEC60950-1 safety approvals. Several different options are available for this series including negative logic remote ON/OFF, heatsinks, and thru-hole inserts.

**MODEL SELECTION TABLE**

Model Number	Input Voltage Range	Output Voltage	Output Current		Output Ripple & Noise	No Load Input Current	Output Power	Efficiency	Maximum Capacitive Load
			Min Load	Max Load					
DCQA100-12S33	12 VDC (8.5 - 22 VDC)	3.3 VDC	0mA	25A	75mVp-p	50mA	82.5W	89%	75,000µF
DCQA100-12S05		5 VDC	0mA	18A	75mVp-p	50mA	90W	90%	36,000µF
DCQA100-12S12		12 VDC	0mA	7.5A	100mVp-p	50mA	90W	91%	6250µF
DCQA100-12S15		15 VDC	0mA	6A	100mVp-p	50mA	90W	91%	4000µF
DCQA100-12S24		24 VDC	0mA	3.7A	200mVp-p	50mA	88.8W	90%	1540µF
DCQA100-12S30		30 VDC	0mA	3A	200mVp-p	50mA	90W	90%	1000µF
DCQA100-12S48	48 VDC	0mA	1.8A	300mVp-p	50mA	86.4W	89%	380µF	
DCQA100-24S33	24 VDC (16.5 - 36 VDC)	3.3 VDC	0mA	25A	75mVp-p	25mA	82.5W	89%	75,000µF
DCQA100-24S05		5 VDC	0mA	18A	75mVp-p	25mA	90W	90%	36,000µF
DCQA100-24S12		12 VDC	0mA	7.5A	100mVp-p	25mA	90W	91%	6250µF
DCQA100-24S15		15 VDC	0mA	6A	100mVp-p	25mA	90W	91%	4000µF
DCQA100-24S24		24 VDC	0mA	3.7A	200mVp-p	25mA	88.8W	92%	1540µF
DCQA100-24S30		30 VDC	0mA	3A	200mVp-p	25mA	90W	91%	1000µF
DCQA100-24S48	48 VDC	0mA	1.8A	300mVp-p	25mA	86.4W	89%	380µF	
DCQA100-48S33	48 VDC (33 - 75 VDC)	3.3 VDC	0mA	25A	75mVp-p	15mA	82.5W	89%	75,000µF
DCQA100-48S05		5 VDC	0mA	21A	75mVp-p	15mA	105W	91%	42,000µF
DCQA100-48S12		12 VDC	0mA	9A	100mVp-p	15mA	108W	90%	7500µF
DCQA100-48S15		15 VDC	0mA	7A	100mVp-p	15mA	105W	91%	4600µF
DCQA100-48S24		24 VDC	0mA	4.5A	200mVp-p	15mA	108W	93%	1870µF
DCQA100-48S30		30 VDC	0mA	3.5A	200mVp-p	15mA	105W	92%	1160µF
DCQA100-48S48	48 VDC	0mA	2.2A	300mVp-p	15mA	105.6W	91%	460µF	

**NOTES**

1. Input Source Impedance: The power modules will operate to specifications without external components, assuming that the source voltage has very low impedance and reasonable input voltage regulation. Highly inductive source impedances can affect the stability of the power module. Since real-world voltage sources have finite impedance, performance is improved by adding an external filter capacitor. We recommend using Nippon Chemi-con KY series, 100µF/100V.
2. Maximum output deviation is +10% inclusive of remote sense and trim. If remote sense is not being used the +SENSE should be connected to its corresponding +OUTPUT and likewise the -SENSE should be connected to its corresponding -OUTPUT.
3. The DCQA100 series can only meet EMI Class A or Class B with external components added. Please contact factory for more information.
4. An external input filter capacitor is required if the module has to meet EN61000-4-4, EN61000-4-5. We recommend connecting two aluminum electrolytic capacitors Nippon chemi-con KY series, 220µF/100V in parallel.
5. Both positive logic and negative logic remote ON/OFF control is available. Positive logic remote ON/OFF comes standard; for negative logic remote ON/OFF add the suffix "R" to the model number (Ex: DCQA100-48S24R).
6. Optional heatsinks available. See page 5 for ordering details.
7. M3 x 0.5 threaded-thru inserts come standard. For Ø.126 thru-hole inserts add the suffix "TH" to the model number (Ex: DCQA100-48S24TH). Models with thru-hole inserts cannot be equipped with a heatsink.
8. BASE-PLATE GROUNDING: EMI can be reduced when you connect the case pin and the four screw bolts to the shield plane.

**CAUTION:** This power module is not internally fused. An input line fuse must always be used.

**SPECIFICATIONS: DCQA100 SERIES**

All specifications are based on 25°C, Nominal Input Voltage, and Maximum Output Current unless otherwise noted.  
We reserve the right to change specifications based on technological advances.

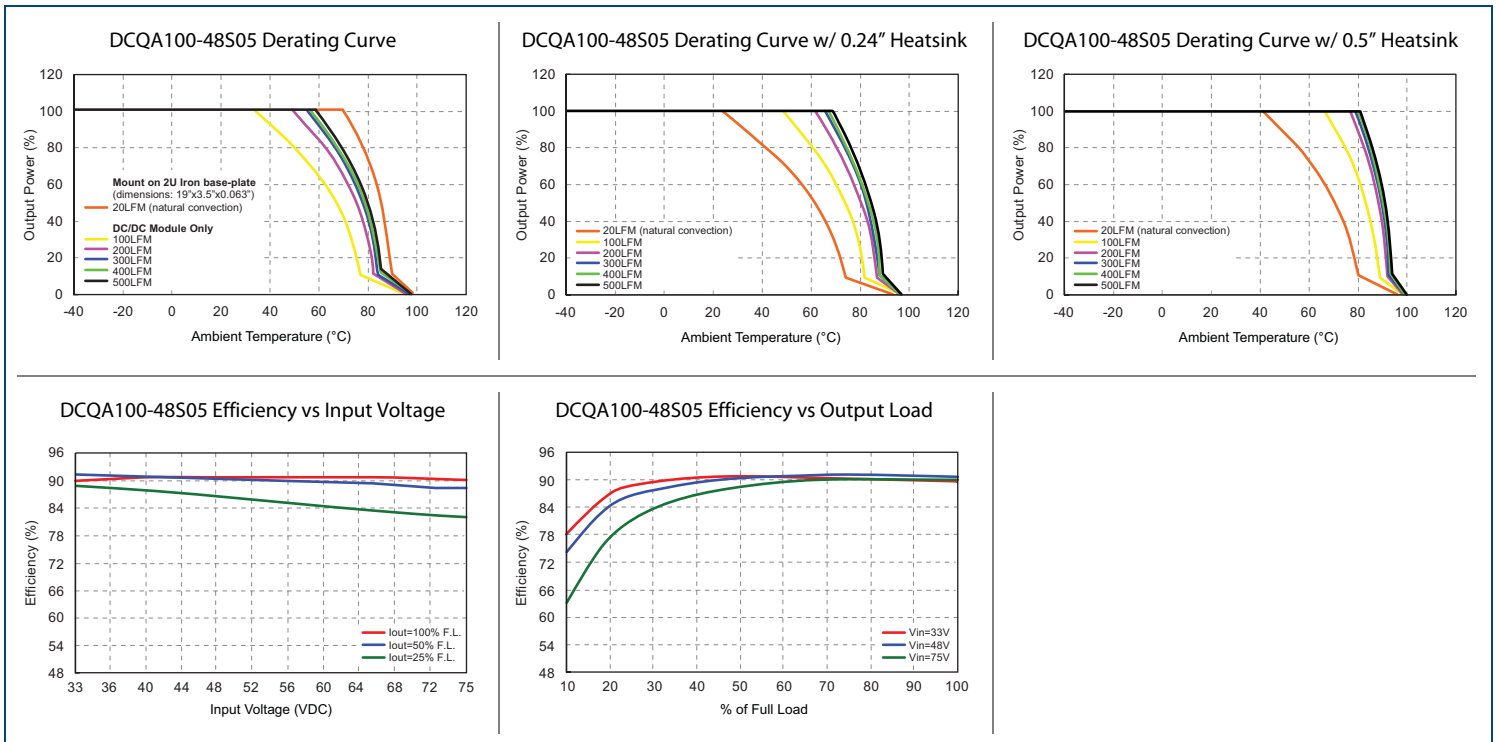
SPECIFICATION	TEST CONDITIONS		Min	Typ	Max	Unit
<b>INPUT SPECIFICATIONS</b>						
Input Voltage Range	12VDC nominal input models		8.5	12	22	VDC
	24VDC nominal input models		16.5	24	36	
	48VDC nominal input models		33	48	75	
Start-Up Voltage	12VDC nominal input models				9	VDC
	24VDC nominal input models				18	
	48VDC nominal input models				36	
Shutdown Voltage	12VDC nominal input models		7.3		8.1	VDC
	24VDC nominal input models		15.5		16.3	
	48VDC nominal input models		31.6		32.5	
Input Surge Voltage (1sec, max.)	12VDC nominal input models				30	VDC
	24VDC nominal input models				50	
	48VDC nominal input models				100	
Input Current	No Load		See Table			
Input Filter (See Note 1)			Pi type			
<b>OUTPUT SPECIFICATIONS</b>						
Output Voltage			See Table			
Voltage Accuracy			-1.0		+1.0	%
Line Regulation	Low line to high line at full load		-0.1		+0.1	%
Load Regulation	No load to full load	3.3V & 5V Output Models	-0.2		+0.2	%
		Others	-0.1		+0.1	
Voltage Adjustability	Maximum output deviation is inclusive of remote sense		-20		+10	%
Remote Sense (See Note 2)	% of Vo (nom)				10	%
Output Power			See Table			
Output Current			See Table			
Minimum Load			0			%
Maximum Capacitive Load	Minimum input and constant resistive load		See Table			
Ripple & Noise (20MHz BW)	Measured with a 22µF/25V X7R MLCC	3.3V & 5V Output Models		75		mVp-p
	Measured with a 22µF/25V X7R MLCC	12V & 15V Output Models		100		
	Measured with a 4.7µF/50V X7R MLCC	24V & 30V Output Models		200		
	Measured with a 2.2µF/100V X7R MLCC	48V Output Models		300		
Transient Response Recovery Time	25% load step change			250		µs
Start-Up Time	Constant resistive load	Power Up		75	100	ms
		Remote On/Off		75	100	
Temperature Coefficient			-0.02		+0.02	%/°C
<b>PROTECTION</b>						
Short Circuit Protection			Continuous, automatic recovery			
Over Load Protection	% of rated Iout; hiccup mode		110		140	%
Over Voltage Protection	% of Vo (nom); hiccup mode		115		130	%
Over Temperature Protection				+110		°C
<b>GENERAL SPECIFICATIONS</b>						
Efficiency	Nominal input voltage and full load		See Table			
Switching Frequency			270	300	330	kHz
Isolation Voltage	1 minute (basic insulation)	Input to Output	2250			VDC
		Input/Output to Base-plate	2250			VDC
Isolation Resistance	500VDC		1			GΩ
Isolation Capacitance					1500	pF
<b>REMOTE ON/OFF (See Note 5)</b>						
Positive Logic (standard)	Referenced to -Input pin	DC/DC ON	Open or 3~12 VDC		VDC	
		DC/DC OFF	Short or 0~1.2VDC			
Negative Logic (optional)	Referenced to -Input pin	DC/DC ON	Short or 0~1.2 VDC		VDC	
		DC/DC OFF	Open or 3~12VDC			
Input Current of Remote Control Pin	Nominal Vin		-0.5		1	mA
Remote OFF State Input Current	Nominal Vin			3		mA

**SPECIFICATIONS: DCQA100 SERIES**

All specifications are based on 25°C, Nominal Input Voltage, and Maximum Output Current unless otherwise noted.  
We reserve the right to change specifications based on technological advances.

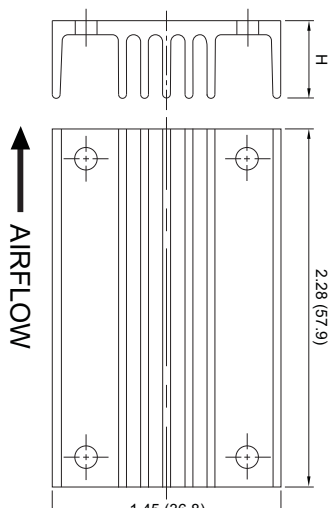
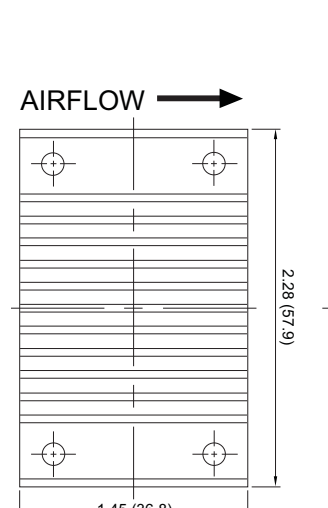
SPECIFICATION	TEST CONDITIONS	Min	Typ	Max	Unit
<b>ENVIRONMENTAL SPECIFICATIONS</b>					
Operating Base-Plate Temperature		-40		+100	°C
Storage Temperature Range		-55		+125	°C
Thermal Impedance (See Note 6)	Vertical direction by natural convection (20LFM)	Without Heatsink	9		°C/W
		With 0.24" Height Heatsink	7.1		
		With 0.5" Height Heatsink	5.5		
		Mounted on 2U iron base-plate	2.8		
Relative Humidity		5		95	% RH
Thermal Shock		MIL-STD-810F			
Vibration		MIL-STD-810F			
MTBF	BELLCORE TR-NWT-000332 Case 1: 50% Stress, Ta=40°C	986,700 hours			
	MIL-HDBK-217F Ta=25°C, full load (G/B, controlled environment)	87,980 hours			
<b>PHYSICAL SPECIFICATIONS</b>					
Weight		2.26oz (64g)			
Dimensions (L x W x H)		2.28x1.45x0.50 inch (57.9x36.8x12.7 mm)			
Case Material		Aluminum base-plate with plastic case			
Potting Material		Silicon (UL94-V0)			
<b>SAFETY &amp; EMC CHARACTERISTICS</b>					
Safety Approvals		IEC60950-1, UL60950-1, EN60950-1			
EMI (See Note 3)	EN55011, EN55022	Class B			
ESD	EN61000-4-2	Air ±8kV		Contact ±6kV	Perf. Criteria A
Radiated Immunity	EN61000-4-3	20 V/m			Perf. Criteria A
Fast Transient (See Note 4)	EN61000-4-4	±2kV			Perf. Criteria A
Surge (See Note 4)	EN61000-4-5	EN55024: ±2kV			Perf. Criteria A
Conducted Immunity	EN61000-4-6	10 Vrms			Perf. Criteria A

**CHARACTERISTIC CURVES**





**HEATSINK OPTIONS**

Vertical Fin Orientation (Suffix Options: H2, H3)	Horizontal Fin Orientation (Suffix Options: H, H1)
 <p style="text-align: right;">Unit: inches (mm)</p> <p style="text-align: right;">Heatsinks H = 0.24" ("H2" Suffix) H = 0.5" ("H3 Suffix)</p> <p style="text-align: right;">Tolerance: ±0.02 (±0.5)</p> <p>Note: Models with thru-hole inserts cannot be equipped with a heatsink</p>	 <p style="text-align: right;">Unit: inches (mm)</p> <p style="text-align: right;">Heatsinks H = 0.24" ("H" Suffix) H = 0.5" ("H1 Suffix)</p> <p style="text-align: right;">Tolerance: ±0.02 (±0.5)</p> <p>Note: Models with thru-hole inserts cannot be equipped with a heatsink</p>

**MODEL NUMBER SETUP**

DCQA	100	-	48	S	05	R	H <sup>(1)</sup>
Series Name	Output Power		Input Voltage	Output Quantity	Output Voltage	Remote ON/OFF	Hole Thread & Heatsink Options
	<b>100:</b> 100 Watts		<b>12:</b> 8.5~22 VDC <b>24:</b> 16.5~36 VDC <b>48:</b> 33~75 VDC	<b>S:</b> Single Output	<b>33:</b> 3.3 VDC <b>05:</b> 5 VDC <b>12:</b> 12 VDC <b>15:</b> 15 VDC <b>24:</b> 24 VDC <b>30:</b> 30 VDC <b>48:</b> 48 VDC	<b>None:</b> Positive Logic <b>R:</b> Negative Logic	<b>None:</b> M3x0.5 Threaded-thru Inserts <b>TH:</b> Ø.126 Thru-hole Inserts <sup>(1)</sup> <b>H:</b> 0.24" Horizontal Heatsink <b>H1:</b> 0.5" Horizontal Heatsink <b>H2:</b> 0.24" Vertical Heatsink <b>H3:</b> 0.5" Vertical Heatsink

(1) Models with thru-hole inserts cannot be equipped with a heatsink.

**COMPANY INFORMATION**

Wall Industries, Inc. has created custom and modified units for over 50 years. Our in-house research and development engineers will provide a solution that exceeds your performance requirements on-time and on budget. Our ISO9001-2008 certification is just one example of our commitment to producing a high quality, well-documented product for our customers.

Our past projects demonstrate our commitment to you, our customer. Wall Industries, Inc. has a reputation for working closely with its customers to ensure each solution meets or exceeds form, fit and function requirements. We will continue to provide ongoing support for your project above and beyond the design and production phases. Give us a call today to discuss your future projects.

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