

Features

- 48vin, Isolated, 4:1 Fixed Conversion Ratio (12v Nominal Out)
- 240watt Max Output
- Parallel For Higher Output Power
- $\pm 10\%$ Current Share Accuracy
- Over-Temperature Protection
- 96% Efficiency
- Remote Enable (Primary Side)
- Positive or Negative Enable Logic
- Current Limit
- Industry Standard $\frac{1}{4}$ Brick Footprint



This product is not fuse protected. User is responsible for providing system protection. Consult factory for application information.

Table 1:

Input Characteristics	Notes and Conditions (1)	Min	Typ	Max	Units
Input Voltage Operating Range		36	48	55	Vdc
Input Voltage Absolute Maximum				60	Vdc
Input Undervoltage Lockout	Turn-on Threshold	36.5		37.6	Vdc
	Turn-off Threshold	34.5		35.5	Vdc
Maximum Input Current	Steady-State (20Amp output)		5.1		Adc
No-Load Input Current	Enable state, on Load (48Vin)		72		mA
Disabled Input Current	Disabled State (48V input)		21		mA
Input Reflected Ripple Current (2)				50	mArms
Inrush Current Transient			0.20		A ² s
Enable - Negative Logic Version Internal 10K pull-up to 6.2V	On State Range	-0.6		0.7	Vdc
	Off State Range	0.8		6.2	Vdc
Enable - Positive Logic Version Internal 100K pull-down to gnd	On State Range	0.8		6.2	Vdc
	Off State Range	-0.6		0.7	Vdc

Table 2:

Output Characteristics	Notes and Conditions (1)	Min	Typ	Max	Units
Output Voltage Set Point	(Vin/4) +1% / -1%		12		Vdc
Output Load Regulation	(Vin/4) + 1% / -5%	-5	-3	1	%
Output Voltage Total Regulation		8.5		13.9	Vdc
Output Ripple Voltage & Noise (3)	20 MHz Bandwidth		90	150	mVp-p
Output Current Operating Range (4)		0		20	A
Efficiency	Io=20A, Vin=48V (See curves)		95.6		%
Turn-on Time	Vin present: Enable to 90% Vout			10	mS

Table 2:

Output Characteristics	Notes and Conditions (1)	Min	Typ	Max	Units
Transient Response (5)	5A Step 0.1A/ μ S, Δ V _o			150	mV
	Recovery Time			100	μ S
Maximum Output Capacitance	Max			3000	μ F

Table 3:

Protection Characteristics	Notes and Conditions (1)	Min	Typ	Max	Units
Output Overcurrent Inception Limit		20	27	30	Adc
Output Overcurrent Shutdown (Latching after second re-try)	Restart Rate		1700		mS
Short Circuit Current	Peak			30	A _{pk}
Overtemperature Shutdown	Non-Latching			125	°C
Overtemperature Restart Hysteresis			10		°C

Table 4:

General Characteristics	Notes and Conditions (1)	Min	Typ	Max	Units
Isolation Voltage	Input to Output			2000	V _{dc}
Isolation Resistance	Input to Output	10			Mohm
Storage Temperature Range	Non-condensing	-40		125	°C
Operating Temperature Range		-40		85	°C
Agency Approvals	UL 60950-1, IEC 60950-1, TUV 60950-1				
Material Flammability	UL 94V-0				
MTBF	Calculated (RAC PRISM) 50°C		1.56		x10 ⁶ Hrs
	Demonstrated		3.0		x10 ⁶ Hrs
Dimensions	Horizontal	2.30"L x 1.45"W x 0.45"H			
Weight			35		g

Notes:

1. Vin = 48Vdc, Ta = 20°C, Airflow = 200LFM unless otherwise noted.
2. Input Reflected Ripple Current is specified when measured with a 120 μ F 63V electrolytic capacitor across the input pins.
3. Output Ripple Voltage is specified when measured with a 270 μ F electrolytic and a 10 μ F ceramic capacitor at the converter output pins.
4. De-rating curves are conducted in a controlled environment. End application testing is required to ensure the hot spot temperature is below the maximum specified. Recommended airflow direction is input to output or cross-wise. For output to input air-flow subtract 3A from derating curves.
5. Transient response is specified with 270 μ F electrolytic and 10 μ F ceramic at the converter output pins.

Mechanical Information - Horizontal

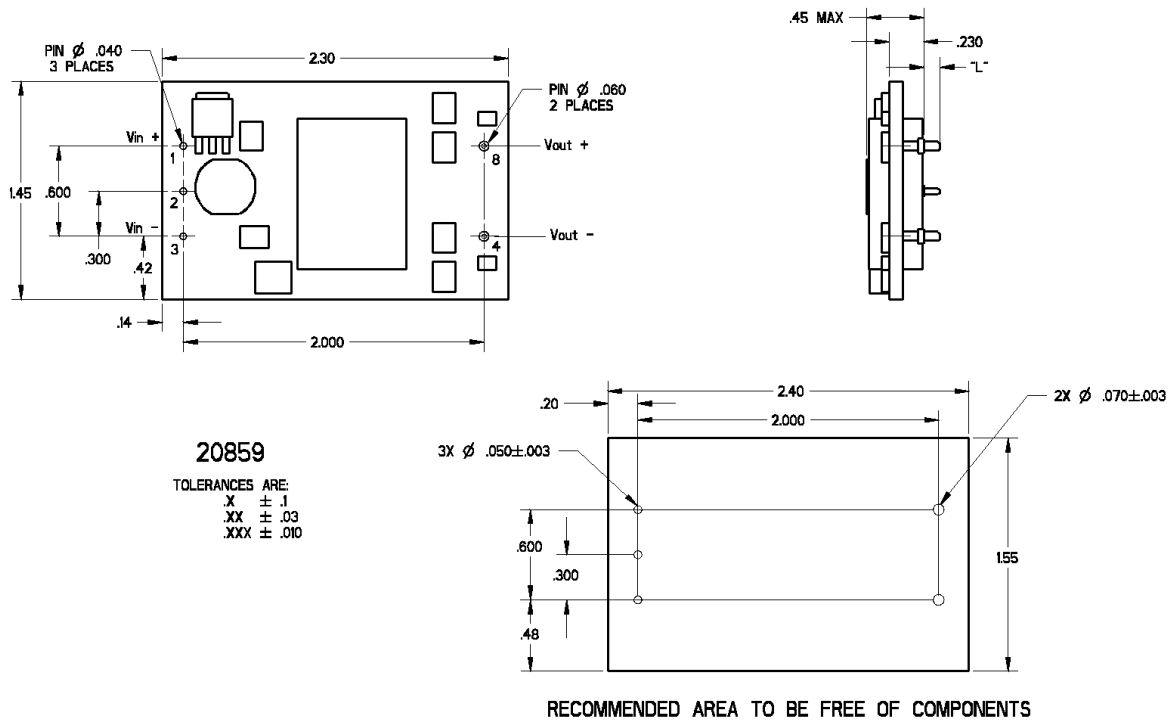


Figure 1

Pin Assignment - Horizontal

Table 5:

Pin #	Pin Name	Function	Notes & Conditions
1	VIN+	Vin 36 to 55 Vdc	
2	ON/OFF	Referenced to Vin-	
3	VIN-	Primary return	
4	VOUT-	Secondary return	
6	VOUT+	Output, 12V nominal, 20Amp max	

Efficiency Curves

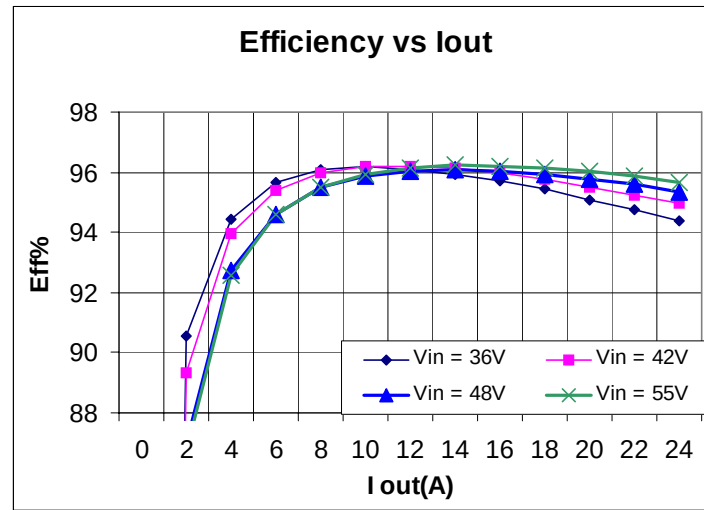


Figure 2

Vout vs. Load

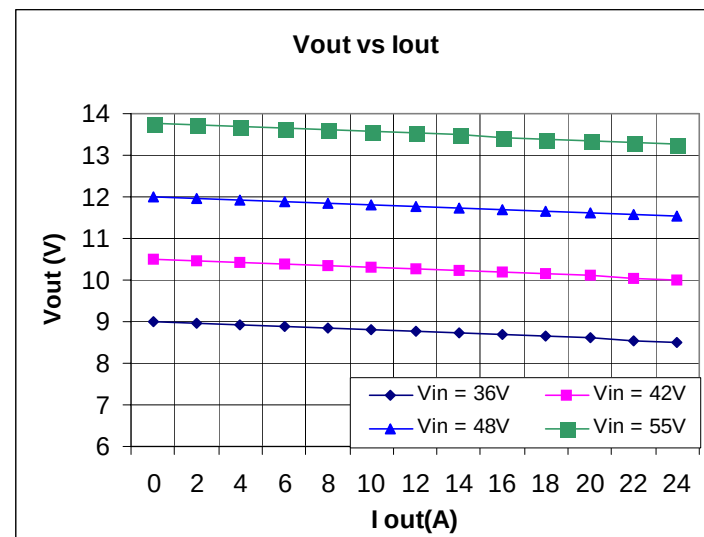


Figure 3

Derating - Horizontal Mount

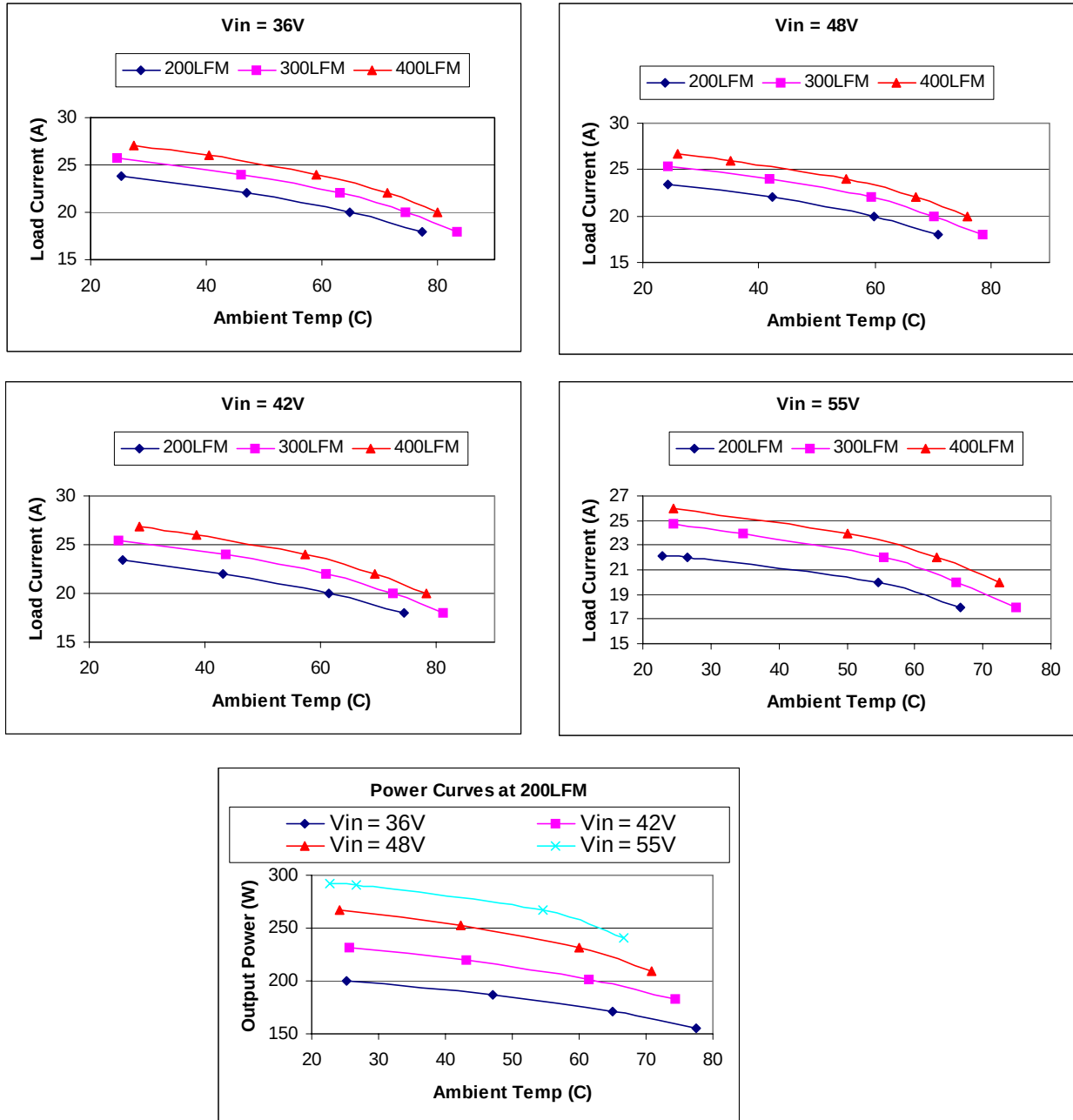
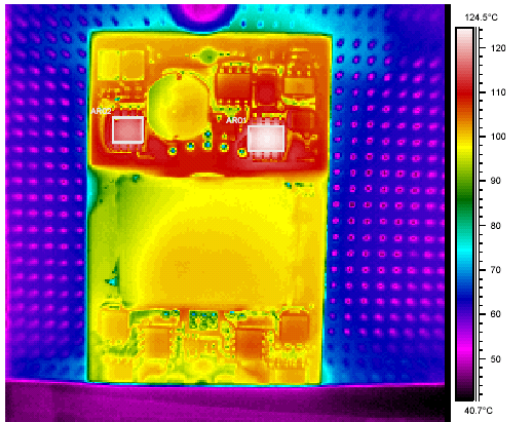


Figure 4

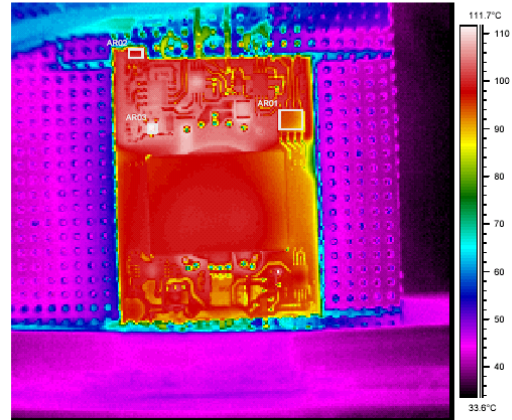
Thermal Performance - Horizontal Mount

Vin: 48v Vout: 11.458v Iout: 19.542A Airflow: 300Lfm
----->
Temp: 55c



Label	Value
AR01 : max	124.7°C
AR02 : max	119.3°C

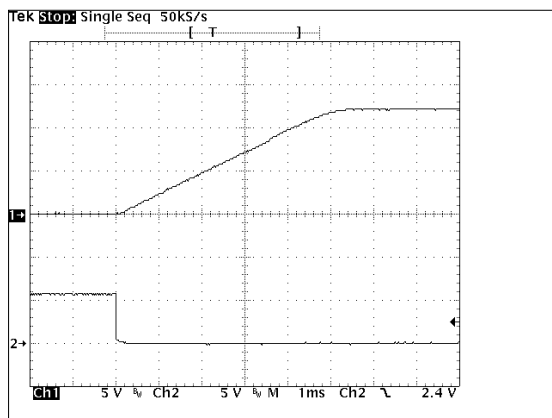
Vin: 48v Vout: 11.458v Iout: 19.542A Airflow: 300Lfm
<-----
Temp: 55c



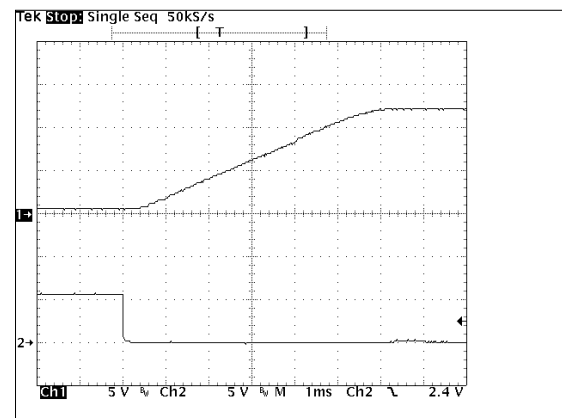
Label	Value
AR01 : max	99.2°C
AR02 : max	101.3°C
AR03 : max	114.2°C

Figure 5

Start up from Enable



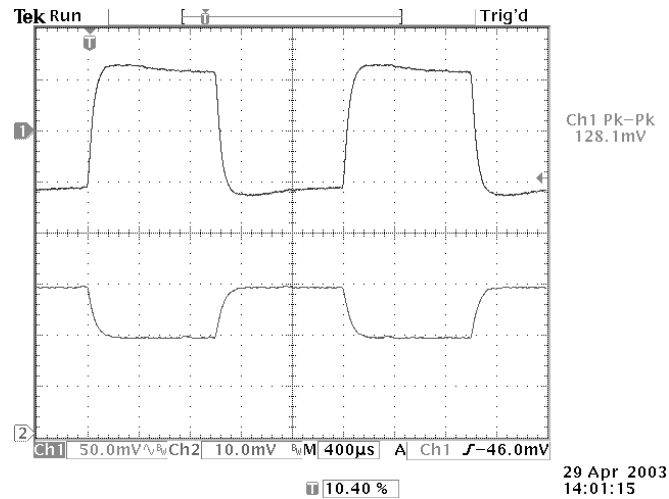
Vin = 48V, Iout = 20A



Vin = 48V, Iout = 0A

Figure 6

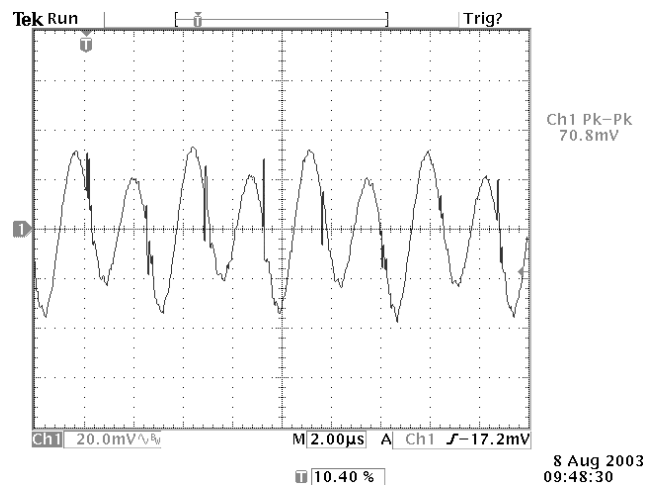
Transient Response



Iout 10A to 15A at 0.1A/μs
CH1 Vout 50mV/div, CH2 Iout 5A/div

Figure 7

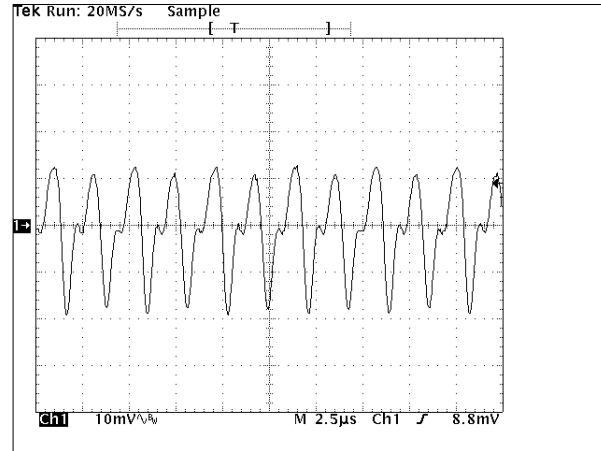
Output Voltage Ripple



Vin = 48V, Iout = 20A; BW = 20MHz

Figure 8

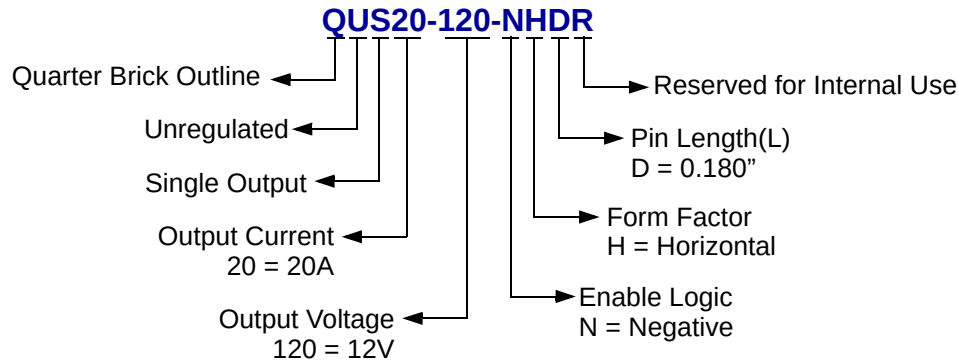
Input Ripple



Vin = 48V, Iout = 20A; BW = 20MHz 5mA/div

Figure 9

Ordering Information



Manufacturing p/n: 073-20859-40C

The 073-20859-40C Bus Converter is in compliance with the European Union Directive 2002/95/EC (RoHS) with respect to the following substances: lead (Pb), cadmium (Cd), mercury (Hg), hexavalent chromium, polybrominated biphenyls (PBB) or polybrominated diphenyl ethers (PBDE).

RoHS Process Note

This product is not intended to go through a reflow solder process. Use wave solder, selective solder or hand solder process with a peak temperature of 260°C for 10 seconds.

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