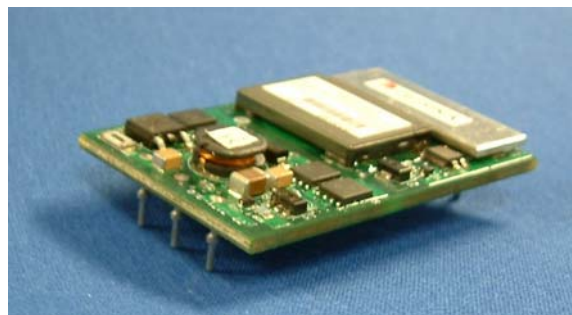


Features

- 48vin, Isolated, 5:1 Fixed Conversion Ratio (9.6v Nominal Out)
- 220watt Max Output @ 36V, 55°C
- 300watt Max Output @ 55V, 55°C
- Parallel For Higher Output Power
- $\pm 10\%$ Current Share Accuracy
- Over-temperature Protection
- 96.7% Max Efficiency
- Remote Enable (Primary Side)
- Positive Or Negative Enable Logic
- Current Limit
- Industry Standard $\frac{1}{4}$ Brick Outline


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		37.6	Vdc
	Turn-off Threshold	34.5		35.5	Vdc
Maximum Input Current	Steady-State (36Vin, 32Aout)			6.4	A
No-Load Input Current	Enable state, on Load (48Vin)		80		mA
Disabled Input Current	Disabled State		17		mA
Input Reflected Ripple Current (2)				50	mArms
Inrush Current Transient			0.2		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	$(V_{in}/5) + 1\%/-1\%$		9.6		Vdc
Output Load Regulation	$(V_{in}/5) + 1\%/-5\%$	-5	-3	1	%
Output Voltage Total Regulation		6.8		11.1	Vdc
Output Ripple Voltage & Noise (3)	Vin = 48V, Iout = 25A (20MHz Bandwidth)		60	150	mVp-p
Output Current Operating Range (4)	Vin = 48.0V	0		28	A
Efficiency	Io = 25A, Vin = 48V (See curves)		96.6		%
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)	25% step, 1A/ μ S, Δ V _o	-3		3	%
	Recovery Time			100	μ S
Maximum Output Capacitance				3000	μ F

Table 3:

Protection Characteristics	Notes and Conditions (1)	Min	Typ	Max	Units
Output Overcurrent Inception Limit		36	40	50	A
Output Overcurrent Shutdown (Latching after second re-try)	Restart Rate		1700		mS
Short Circuit Current	Peak			42	A _{pk}
Overtemperature Shutdown	Non-Latching			100	$^{\circ}$ C
Overtemperature Restart Hysteresis			10		$^{\circ}$ 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	$^{\circ}$ C
Operating Temperature Range		-40		85	$^{\circ}$ C
Agency Approvals	UL 60950-1, IEC 60950-1, TUV 60950-1				
Material Flammability	UL 94V-0				
MTBF	Calculated (RAC PRISM) 40 $^{\circ}$ C		3.02		$\times 10^6$ Hrs
	Demonstrated		3.0		$\times 10^6$ Hrs
Dimensions	2.30"L x 1.45"W x 0.45"H				
Weight			40		g

Notes:

1. Vin = 48V_{dc}, Ta = 20 $^{\circ}$ C, Airflow = 200LFM unless otherwise noted.
2. Input Reflected Ripple Voltage is specified when measured with 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 airflow subtract 3A from derating curves.
5. Transient response is specified with a 270 μ F electrolytic and a 10 μ F ceramic capacitor at the converter output pins.

Mechanical Information

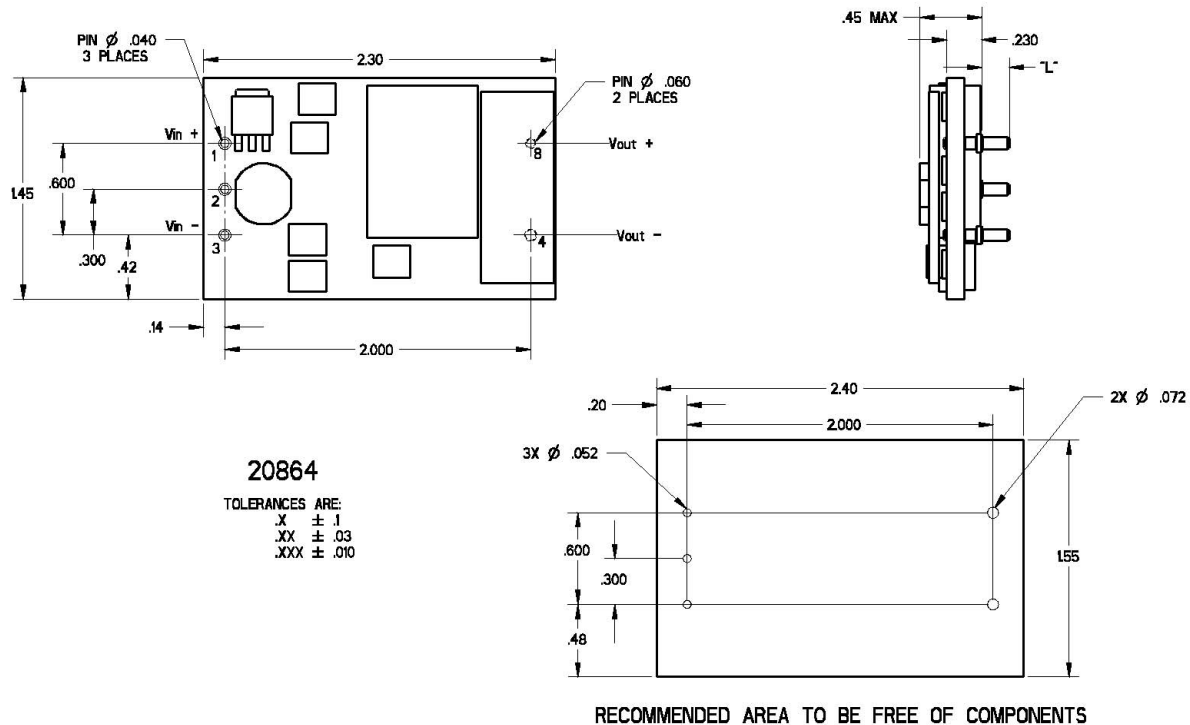


Figure 1

Pin Assignment

Table 5:

Pin #	Pin Name	Function	Notes/Comments
1	VIN+	Vin 36 to 55Vdc	
2	ON/OFF	Referenced to Vin-, internal pull-up, low for ON state	
3	VIN-	Primary return	
4	VOUT-	Secondary return	
5	VOUT+	Output, 9.6V nominal, 25Amp nominal	

Efficiency Curves

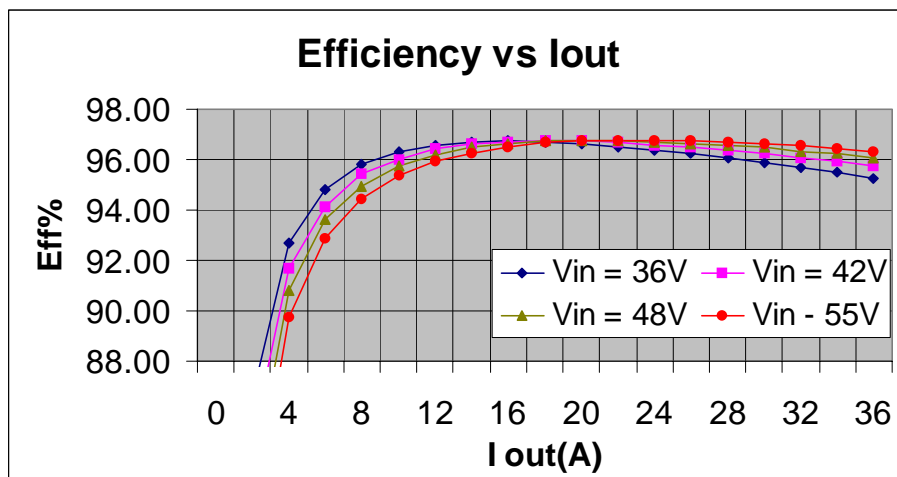


Figure 2

Output Voltage vs. Current

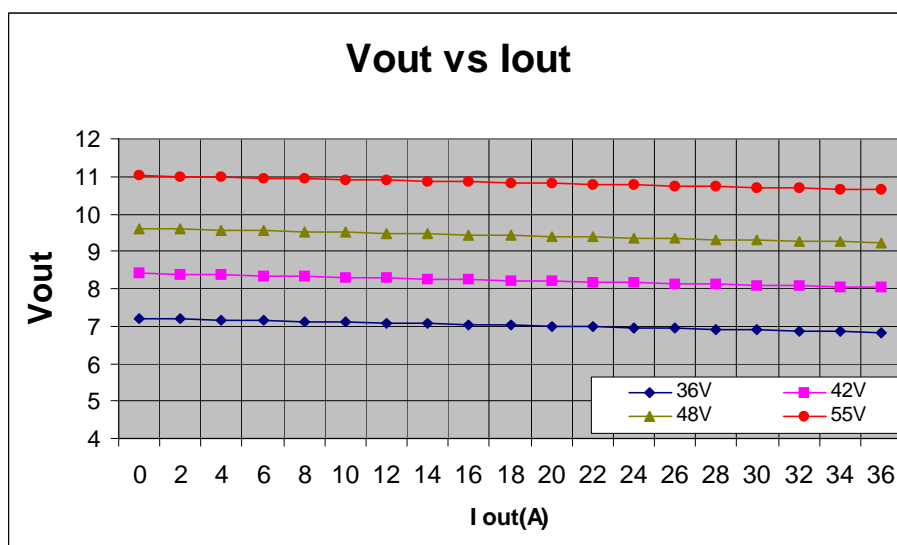


Figure 3

Derating Curves - Horizontal Mount

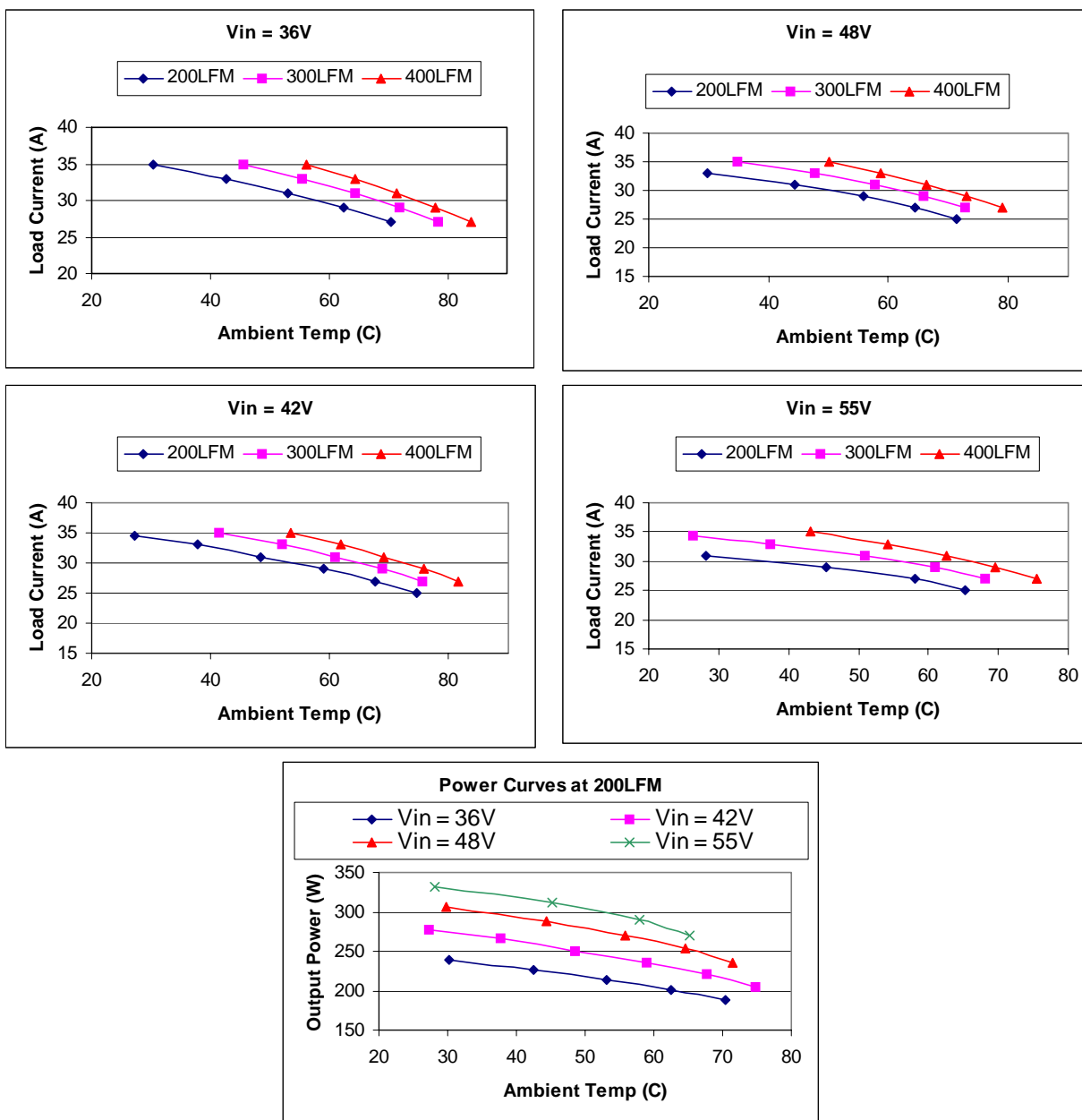


Figure 4

Thermal Performance - Horizontal Mount

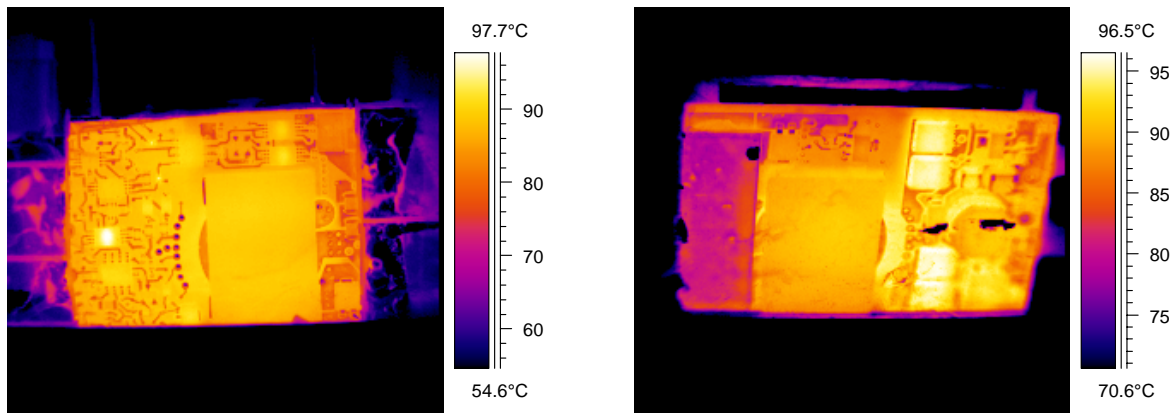
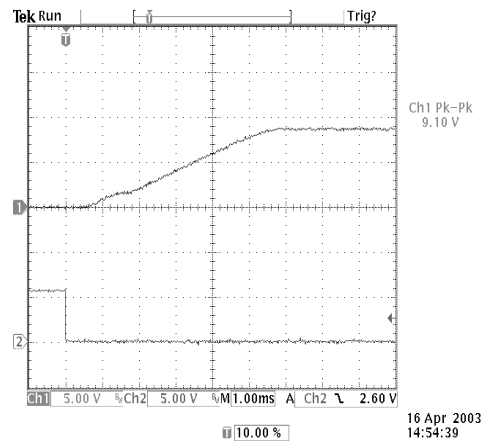
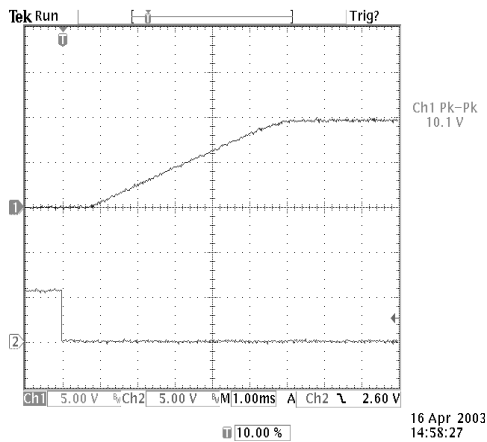


Figure 5

Turn on (Enable)

Waveform: 0A Load

Waveform: 25A Load

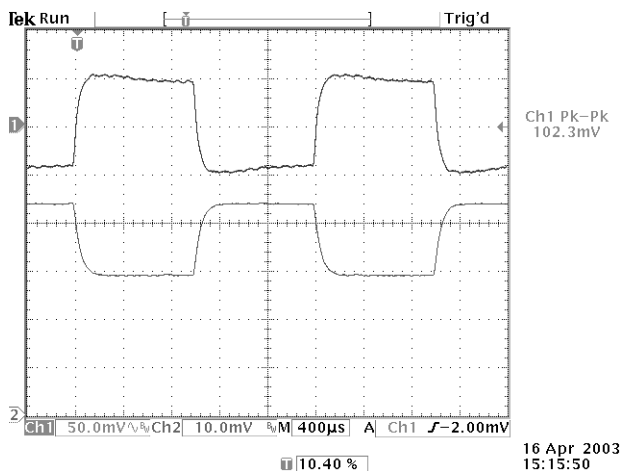


CH1 = Vout CH2 = Enable On

CH1 = Vout CH2 = Enable On

Figure 6

Load Transient

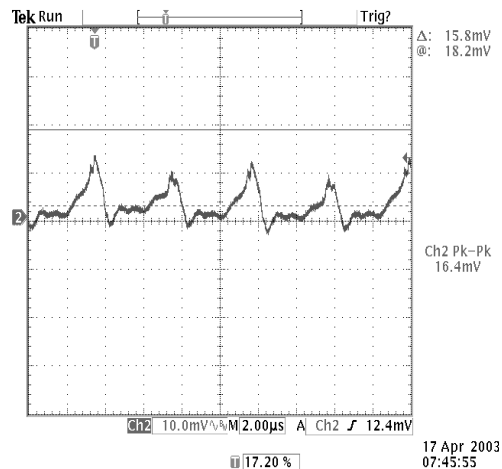


CH1 = Vout
CH2 = Load Current stepped from 14 - 21A, 5A/div

Figure 7

Input Reflected Ripple

Vin = 48V, Load = 25A

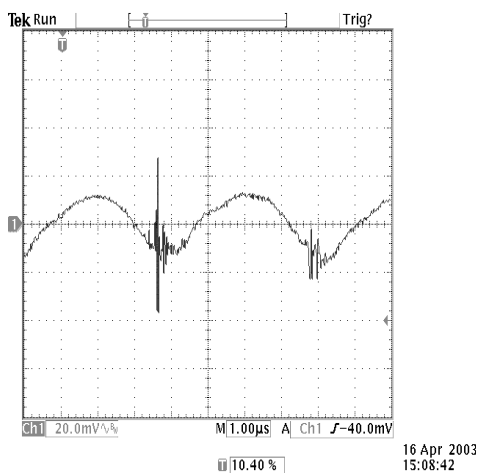


CH2 = Input Current Ripple: 20mA/div

Figure 9

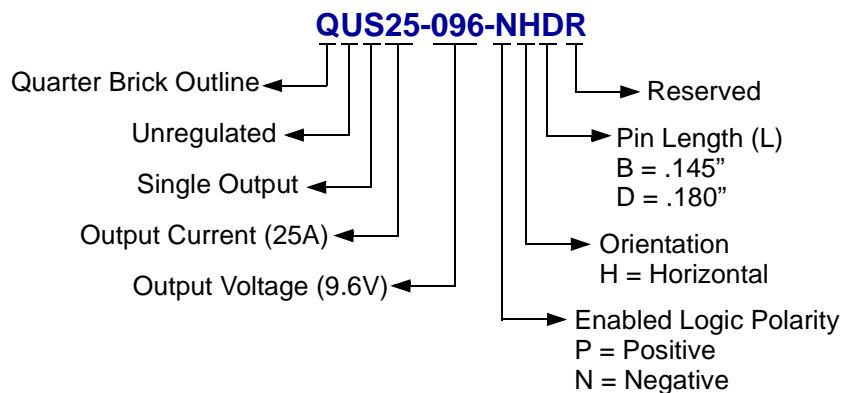
Output Ripple/Noise

Waveform Vin = 48V, Load = 25A



Ripple/CH1 = Vout

Figure 8

Ordering Information**Standard Part:** QUS25-096-NHBR