

The UQ48120ABCD-21 power module is designed to meet high efficiency and low profile requirements for telecommunication, computer servers, enterprise networking equipment and other applications that use a 48V (36~75V) input bus.

- High efficiency 93%@12V/15A
..... 93%@12V/21A
- High useable current (5.0mm B-type Sink-Plate)
..... 12V/16.0A at 70°C 200LFM
- Low thermal resistance 3.4°C/W (200LFM)

Part Number *	Maximum Input	Maximum Output	Efficiency
UQ48120ABCD -21	36V~75V	275W	12V/21A 252W 93%
UQ48050ABCD -50	36V~75V	275W	5.0V/50A 250W 91%
UQ48033ABCD -60	36V~75V	221W	3.3V/60A 198W 90%
UQ48025ABCD -80	36V~75V	230W	2.5V/80A 200W 88%
UQ48018ABCD -100	36V~75V	210W	1.8V/100A 180W 86%
UQ48015ABCD -100	36V~75V	180W	1.5V/100A 150W 84%

Part Number *	Maximum Input	Maximum Output	Efficiency

* Options for **UQ48120ABCD-EF** are as follows:

- A** (Enable Logic): **P**: Positive **N**: Negative
B (Pin Dimension): **0**: 0.12" **1**: 0.16" **2**: 0.20" **3**: 0.24"
C (Standoff Height): **0**: 0.02" **1**: 0.08" **2**: 0.16"
D (Base-Plate/Module Thickness): **M**: 1.0mm Metal Plate/0.34" **A**: 3.0mm Sink-Plate/0.42" **B**: 5.0mm Sink-Plate/0.50"
EF (Output): **00** to **A0** for output current rating

UQ48120N20B-21: 1/4 brick 48V to 12V/21A dc/dc converter with options of negative control logic, 0.20" pin length, 0.02" standoff height and special modified 5.0mm Sink-Plate. The total height is 0.02"+0.50"=0.52".

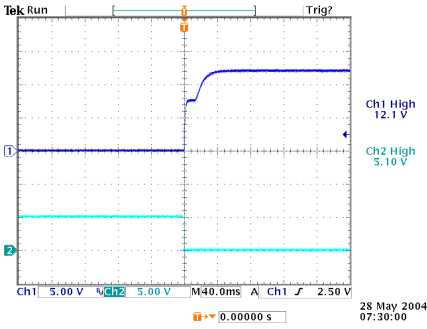
ABSOLUTE MAXIMUM RATINGS		
Temperature	Operation	-40°C to +120°C
	Storage	-55°C to +125°C
Input Voltage Range	Operation:	
	24V Models	-0.5V to +40Vdc
	48V Models	-0.5V to +80Vdc
	Transient (100mS):	
	24V Models	50V Maximum
	48V Models	100V Maximum
Isolation Voltage	Input to Output	2.0KV Minimum
	Input to Case	1.0KV Minimum
	Output to Case	1.0KV Minimum
Remote Control Voltage		-0.5V to +12Vdc

GENERAL SPECIFICATIONS		
Conversion Efficiency	Typical	See table
Switching Frequency	Typical	300KHz
MTBF	Bellcore	2.17×10 ⁶ hrs @40°CGB.
OTP	Internal	125°C
Weight		1.95 oz
Foot Print		2.30"×1.50"

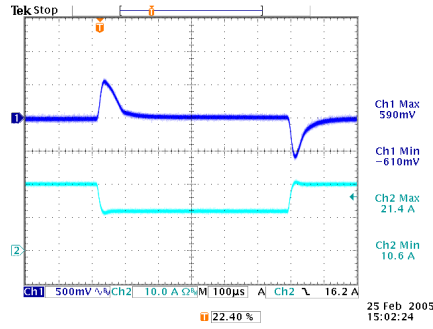
CONTROL FUNCTIONS		
Remote Control	Logic High	+3.0V to +6.5V
	Logic Low	0V to +1.0V
Input Current of Remote Control Pin		-0.5mA ~ +1.5mA

INPUT SPECIFICATIONS		
Operation Voltage Range	24V Models	+18V to +36Vdc
	48V Models	+36V to +75Vdc
Reflected Ripple Current	L _{EXT} = 10uH	20mA Max
Power ON Voltage Ranges	24V Models	+17.5V to +17.9Vdc
	48V Models	+35.0V to +35.8Vdc
Power OFF Voltage Ranges	24V Models	+17.0V to +17.4Vdc
	48V Models	+34.0V to +34.8Vdc
Off State Input Current	V _{NOM}	6mA Max
Latch-State Input Current	V _{NOM}	8mA Max
Input Capacitance	24V Models	33.0uF Max
	48V Models	15uF Max

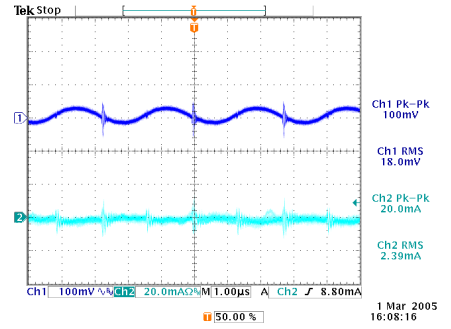
OUTPUT SPECIFICATIONS		
Voltage Accuracy	Typical	±1%
Line Regulation	Full Input Range	±0.2%
Load Regulation	10%~100%	±0.2%
Temperature Drift	-40°C ~100°C	±0.02%/°C
Output Tolerance Band	All Conditions	±3%
Ripple & Noise (20MHz)	Peak-Peak (RMS)	3% (1%) V _o
Over Voltage Protection	V _{NOM} , 10% Load	115~130 %V _o
Output Current Limits	V _{NOM}	105%~125%
Voltage Trim	V _{NOM} , 10% Load	±10%
Input Ripple Rejection (<1KHz)	V _{NOM} , Full Load	-50dB
Step Load (2.5A/uS)	50%~75% Load	400mV/500uS
Start-Up Delay Time	V _{NOM} , Full Load	20mS/250mS



Start-Up Waveform
(V_{IN} : 50V, Load: 18A)



Transient Response
(V_{IN} : 50V, Load: 20A/10A@2.5A/ μ S)

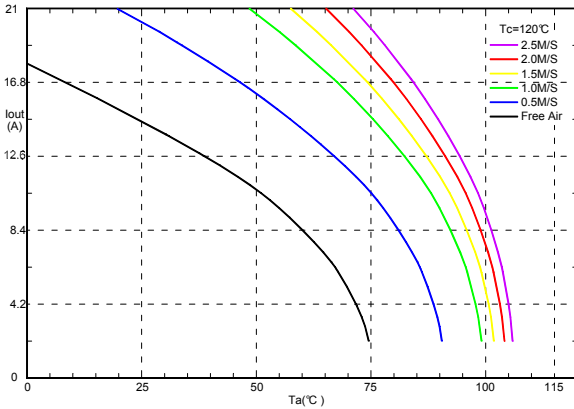


Output Ripple/Noise and Input Ripple Current
(V_{IN} : 50V, Load: 18A, L_{IN} =10uH)

To be provide in next version

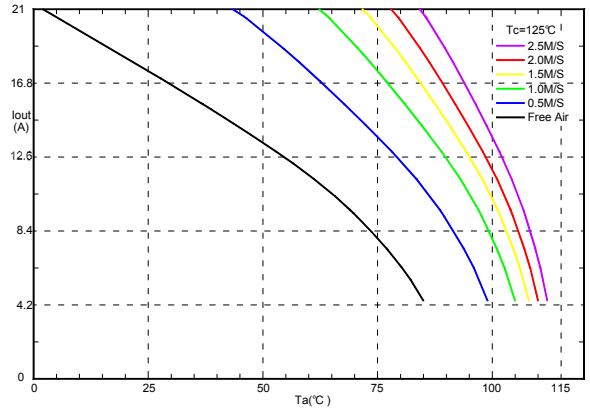
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Thermal Plot with 55°C-200LFM Airflow at +IN/+OUT Direction

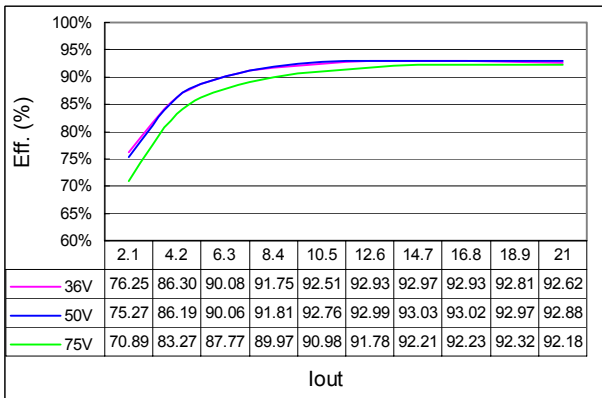


Derating Plot of UQ48120N20B-21

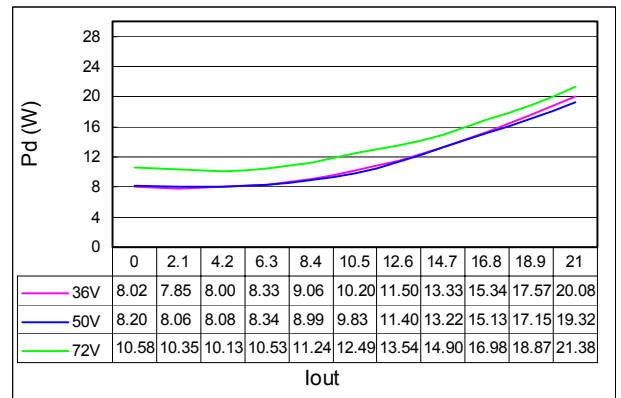
Thermal Plot with 55°C-200LFM Airflow at +IN/-IN Direction



Derating Plot of UQ48120N20T-21



Efficiency Plot



Power Loss Plot

Important Note: General specifications and the performances referring to standard series only, no special customer specification display here except requested items.