



The high efficiency *Aurora* Converter family provides up to 40W/10A output with industry standard 2" x 1" metal package, which is designed with the efficiently patented "Coupled-Inductor SR" topology. The low profile module design with silicone potted metal package offers optional 2:1 or 4:1 wide Vin range and eliminates the hot spots to further secure much better thermal performance.



Part Number *	Maximum Input	Maximum Output	Efficiency
AB48120abcd-ef	36V~75V 39W	12.0V/3A 36W	93%
AB48050abcd-ef	36V~75V 45W	5.0V/8A 40W	90%
AB48033abcd-ef	36V~75V 37W	3.3V/10A 33W	90%
AB48025abcd-ef	36V~75V 29W	2.5V/10A 25W	88%

Part Number *	Maximum Input	Maximum Output	Efficiency
AB24120abcd-ef	18V~36V 39W	12.0V/3A 36W	93%
AB24050abcd-ef	18V~36V 45W	5.0V/8A 40W	90%
AB24033abcd-ef	18V~36V 37W	3.3V/10A 33W	90%
AB24025abcd-ef	18V~36V 29W	2.5V/10A 25W	88%

* Options for **AB series** are listed as follows:

- a** (Enable Logic): **P**: Positive **N**: Negative
- b** (Pin Dimension): **0**: 0.15" **1**: 0.20"
- c** (Standoff Height): **0**: 0.00"(Standard) **1**: 0.02"
- d** (Packaging/Module Thickness): **E**: Enclosed standard type/0.40" **D**: Customized
- ef** (Output): **00** to **10** for output current rating

Part Number *	Maximum Input	Maximum Output	Efficiency
AB36120abcd-ef	18V~75V 39W	12.0V/3A 36W	92%
AB36050abcd-ef	18V~75V 45W	5.0V/8A 40W	89%
AB36033abcd-ef	18V~75V 37W	3.3V/10A 33W	89%
AB36025abcd-ef	18V~75V 29W	2.5V/10A 25W	87%

Example: **AB48050P10E-08** is a *Aurora* Converter in 2" x 1" case offering 36~75V input to 5.0V/8A output with positive control logic, 0.20" pin length, 0.00" of standoff height in a standard enclosed type package.

<u>ABSOLUTE MAXIMUM RATINGS</u>		
Temperature	Operation	-40°C to +110°C
	Storage	-55°C to +125°C
Input Voltage Range	Operation:	
	24V Models	-0.5V to +40Vdc
	48V Models	-0.5V to +80Vdc
	36V Models	-0.5V to +80Vdc
	Transient (100mS):	
24V Models	50V Maximum	
48V Models	100V Maximum	
36V Models	100V Maximum	
Isolation Voltage	Input to Output	2.0KV Minimum
	Input to Case	1.0KV Minimum
	Output to Case	0.5KV Minimum
Remote Control Voltage		-0.5V to +12Vdc

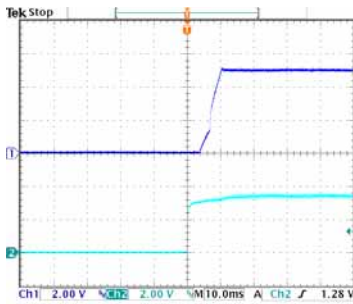
<u>INPUT SPECIFICATIONS</u>		
Operation Voltage Range	24V Models	+18V to +36Vdc
	48V Models	+36V to +75Vdc
Reflected Ripple Current	36V Models	+18V to +75Vdc
	$L_{EXT} = 10\mu H$	20mA Max
Power ON Voltage Ranges	24V Models	+17.0V to +18.0Vdc
	48V Models	+34.0V to +36.0Vdc
	36V Models	+17.0V to +18.0Vdc
Power OFF Voltage Ranges	24V Models	+15.6V to +16.6Vdc
	48V Models	+31.2V to +33.2Vdc
	36V Models	+15.6V to +16.6Vdc
Off State Input Current	V_{NOM}	3mA Max
Latch-State Input Current	V_{NOM}	8mA Max
Input Capacitance	24V Models	10uF Max
	48V Models	2.2uF Max
	36V Models	4.7uF Max

<u>GENERAL SPECIFICATION</u>		
Conversion Efficiency	Typical	See table
Switching Frequency	Typical	400KHz
MTBF	Bellcore	7.6×10^6 hrs @GB/25°C.
	TR-332 issue 6	(AB48050P10E-08)
OTP	Internal	115°C (Tc)
Weight		35g

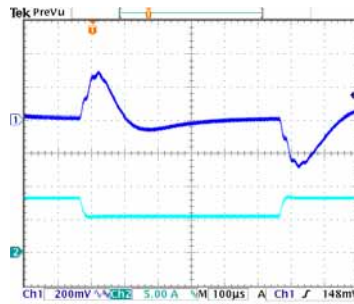
<u>OUTPUT SPECIFICATIONS</u>		
Voltage Accuracy	Typical	±1.5%
Line Regulation	Full Input Range	±0.3%
Load Regulation	10%~100%	±0.3%
Temperature Drift	-40°C ~100°C	±0.03%/°C
Output Tolerance Band	All Conditions	±4%
Ripple & Noise (20MHz)	Peak-Peak (RMS)	3% (1%) V_O
Over Voltage Protection	V_{NOM} , 10% 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)	75%~100% Load	±3% V_O /500uS
Start-Up Delay Time	V_{NOM} , Full Load	20mS/250mS

<u>CONTROL FUNCTIONS</u>		
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

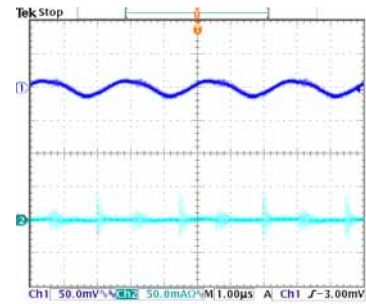
Important Note: General specifications and the performances referring to standard series only, no special customer specification display here except requested items.



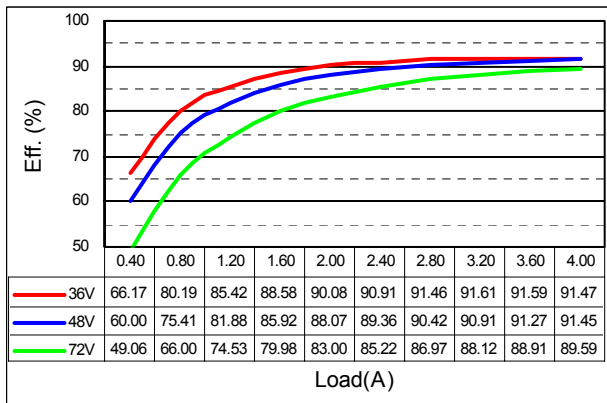
Start-Up Waveform
(V_{IN} : 50V, Load: 8A)



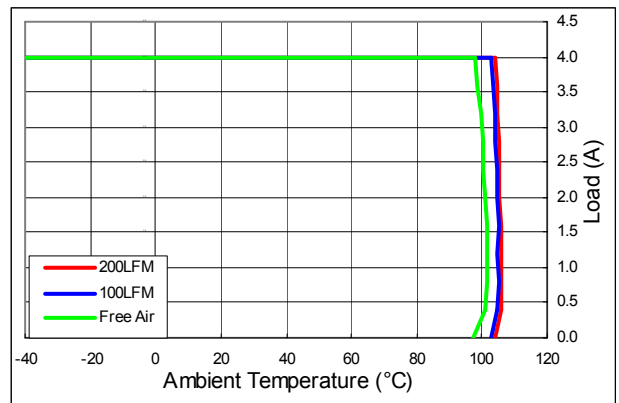
Transient Response
(V_{IN} : 50V, Load: 8A/6A@2.5A/µs)



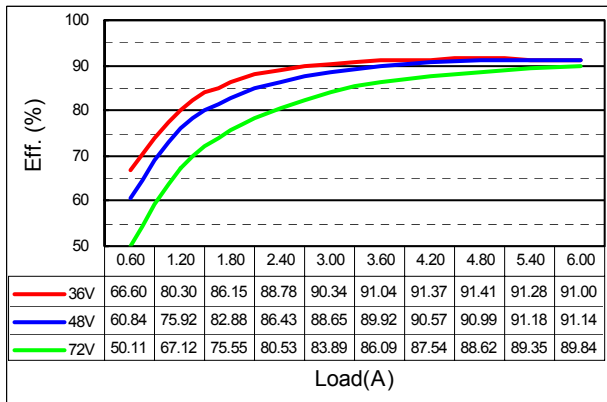
Output Ripple/Noise and Input Ripple Current
(V_{IN} : 50V, Load: 8A, L_{IN} =10µH)



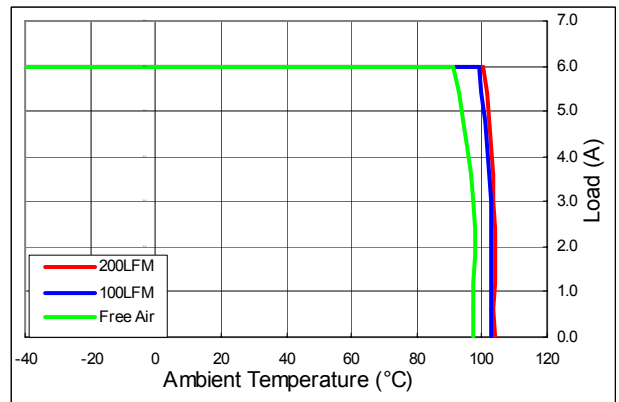
Efficiency Plot of AB48050N20M-04



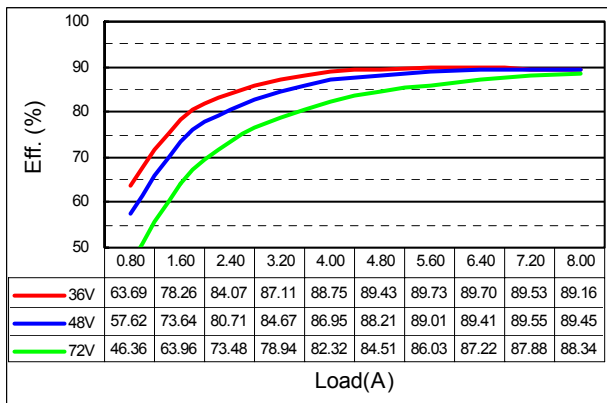
Derating Curves of AB48050N20M-04 for $T_C = 110^\circ\text{C}$



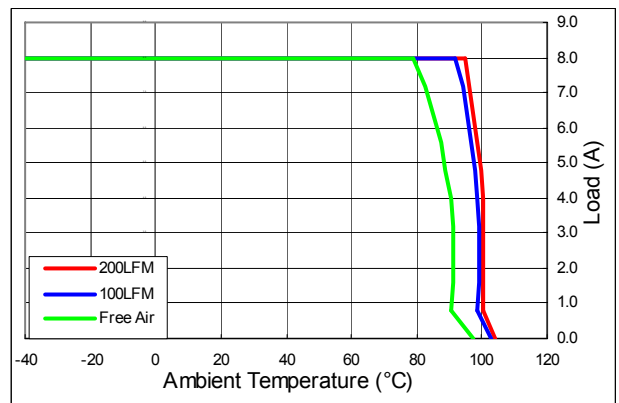
Efficiency Plot of AB48050N20M-06



Derating Curves of AB48050N20M-06 for $T_C = 110^\circ\text{C}$

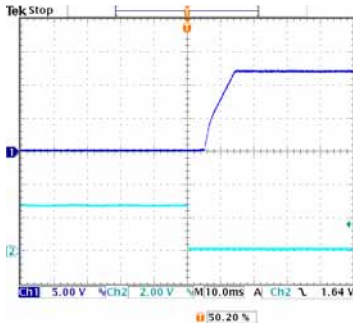


Efficiency Plot of AB48050N20M-08

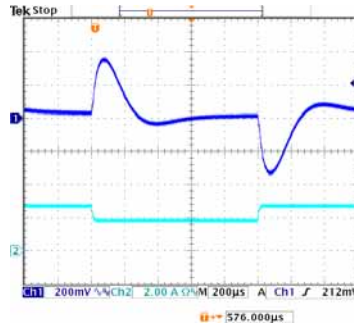


Derating Curves of AB48050N20M-08 for $T_C = 110^\circ\text{C}$

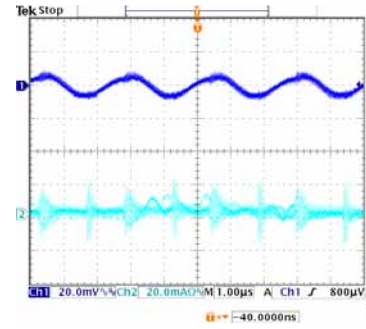
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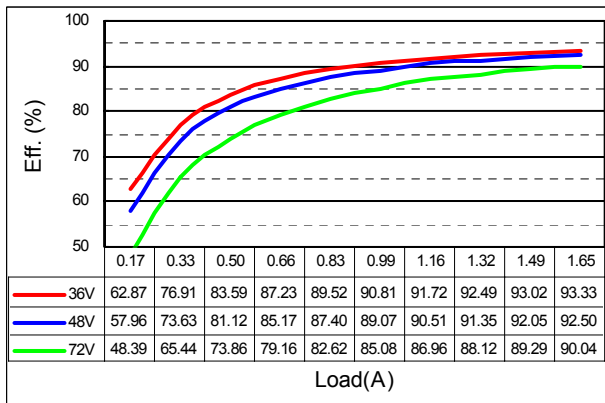
Start-Up Waveform
(V_{IN} : 50V, Load: 3.3A)



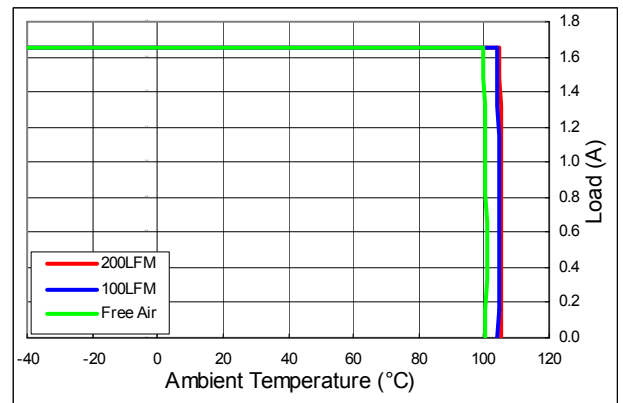
Transient Response
(V_{IN} : 50V, Load: 3.3A/2.5A@2.5A/ μ S)



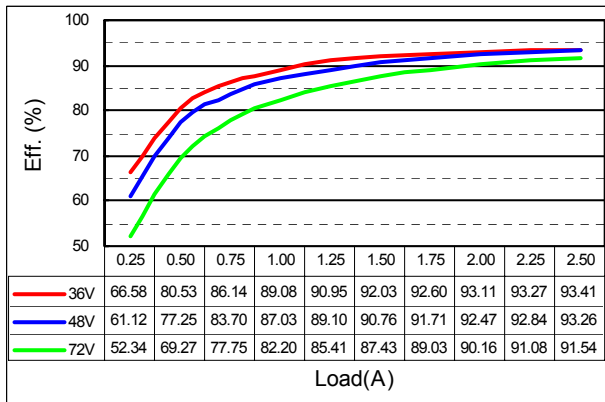
Output Ripple/Noise and Input Ripple Current
(V_{IN} : 50V, Load: 3.3A, L_{IN} =10uH)



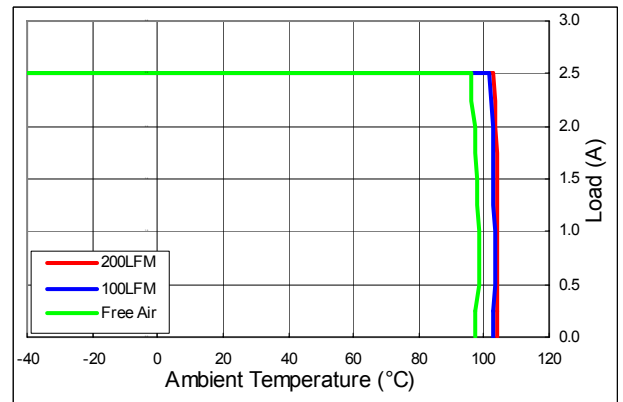
Efficiency Plot of AB48120N20M-02



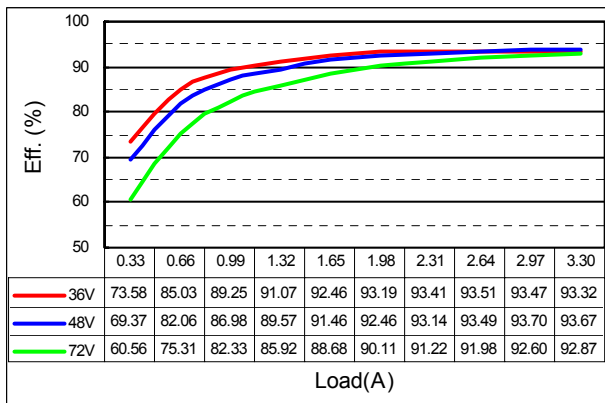
Derating Curves of AB48120N20M-02 for $T_c = 110^\circ\text{C}$



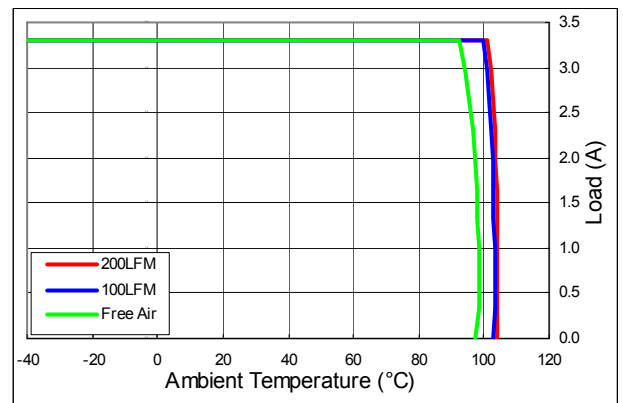
Efficiency Plot of AB48120N20M-03



Derating Curves of AB48120N20M-03 for $T_c = 110^\circ\text{C}$



Efficiency Plot of AB48120N20M-04

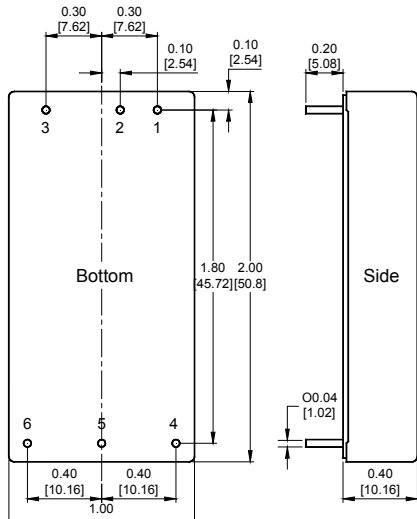


Derating Curves of AB48120N20M-04 for $T_c = 110^\circ\text{C}$

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Aurora Converter Family

Budgetary Datasheet



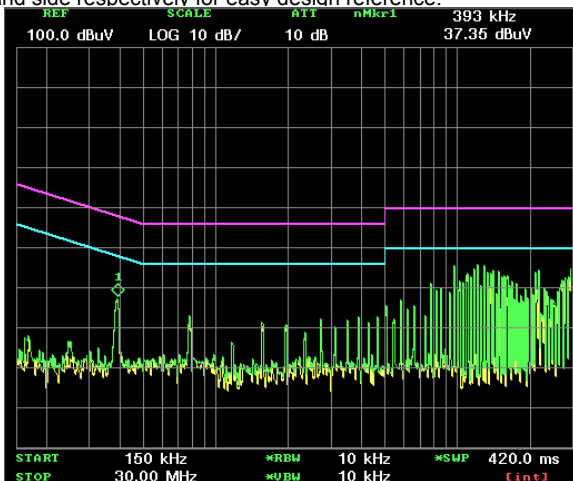
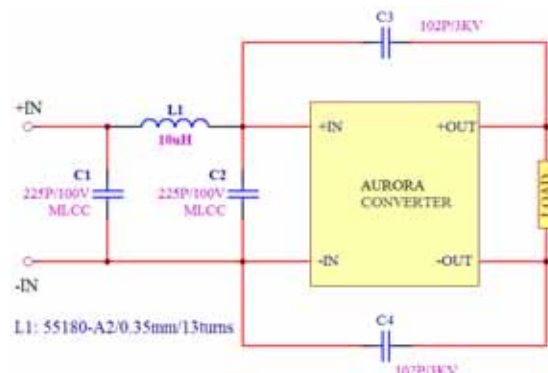
Designation	Function Description	Pin #	Dimensions: Inches [mm]
+Vi	Negative Input	1	Tolerances: .xx±0.02 (.x±0.5) .xxx±0.01 (.x±0.25)
-IN	Positive Input	2	
Remote	ON/OFF control	3	Weight: 35g
+Vo	Positive Output	4	Base plate: Non-conductive
-Vo	Negative Output	5	Pin material: Copper alloy
TRIM	Output voltage adjust	6	Pin plating: Gold over Nickel

Physical Information and Pin Connections

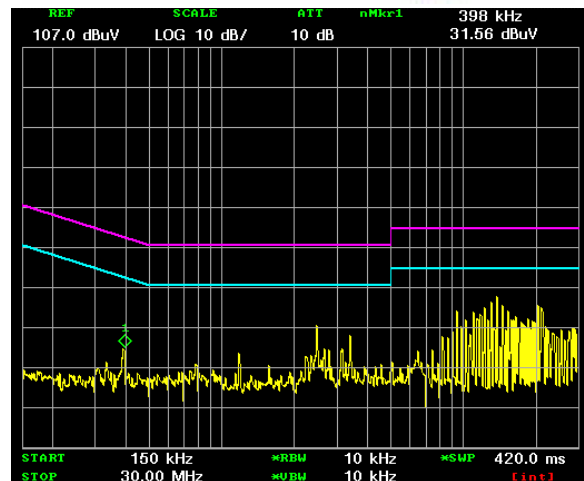
Unique EMC Solution:

By extremely sophisticated design intelligence that results in an excellent circuit layout, plus the prudently-chosen magnetic components, *Aurora* converter family features both high efficiency and low conductive EMC level. The *Aurora* converter passes the EN55022 class-B standard with the input filter circuit shown on right hand side, which is mainly composed of two 1812 size 2.2uF/100V MLCC capacitors and one 55180-A2 MPP core with 13 turns of winding (OD= 5mm, H= 2.5mm).

The measured EMC level for 48V to 5V (40W) model and 48V to 12V (40W) model are shown at below left hand side and right hand side respectively for easy design reference.



EMC Performance of AB48050N20M-08



EMC Performance of AB48120N20M-03

- NOTE:**
1. It is recommended that the input is protected by fuses or other protection devices at the system board.
 2. ALL specifications are typical at nominal input, full load and 25 °C unless otherwise noted.
 3. Specifications are subject to change without notice.
 4. Printed or downloaded datasheets are not subject to Glary document control.
 5. Product labels shown, including safety agency certificates, may vary based on the date of manufacture.
 6. Information provided in this documentation is for ordering purposes only.
 7. This product is not designed for use in critical life support systems, equipment used in hazardous environments, nuclear control systems or other such applications, which necessitate specific safety and regulatory standards other than the ones listed in this datasheet.

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