

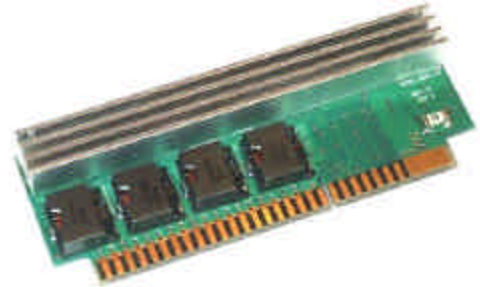
## NON-ISOLATED DC/DC CONVERTERS

12V Input / Programmable Output / 81A VRM 9.1 Compatible



### G7NB-81A180 PRELIMINARY

- High efficiency means less power dissipation
- Remote on/off
- 2-Wire Remote sense
- 5 bit VID digital voltage programming.
- Single wire current sharing



### Description

The G7NB-81A Series is a non-isolated step down DC/DC converters providing up to 81A of output current and designed to be compatible to the Intel VRM 9.1 specification. Standard features include current share, remote on/off, over current protection, remote sense and a power good signal. This product also makes use of adaptive positioning to improve transient response performance. These products may be used almost anywhere low-voltage silicon is being employed and a nominal 12V source is available. Typical applications include file servers, work stations and other computing applications.

### Input Specifications

Parameter	Min	Typ	Max	Notes
Input Voltage Range	10.8 VDC		13.2 VDC	
Input Current (disabled)		17mA		
Input Current (full load)			16A	
Reflected Ripple Current			500mA rms	With 100uF, 25mOhm capacitor and 200nH of input inductance.

### Output Specifications

Parameter	Min	Typ	Max	Notes
Output Current	0A		81A	
Set Point Accuracy	1.81V	1.83	1.85	no load, excluding Adaptive positioning, VID 00000
Adaptive Positioning (Droop Impedance)		800 uOhm		
Ripple and Noise		20mV		pk-pk, 0 to 20MHz Bandwidth Full load with two external 560uF oscon capacitors on output.
Turn on Time		8mS	16mS	
Transient Response Deviation Settling Time		100mV 175uS		di/dt = 5A/uS 30A Load step
Remote Sense Compensation		±0.3VDC		
Output Capacitance	4400uF		9000uF	For applications requiring higher or lower output capacitance please consult factory.

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## General Specifications

Parameter	Specification
Switching Frequency	1 MHz typical (fixed)
Dimensions	inches mm
	3.8 x 1.35 x .59 96.5 x 34.3 x 15
Weight	TBD
Operating Temperature	0°C to 70°C
Non-Operating Temperature	-40°C to 100°C
Protection Features	Over current Undervoltage
	110% to 170% max I <sub>o</sub> UVLO Vin < 10.8V
Remote On/Off	Active High
Efficiency (full load)	1.85V output 86%

## Voltage Identification (VID) Code

VID4	VID3	VID2	VID1	VID0	V <sub>o</sub> (VDC)
1	1	1	1	1	Output Off
1	1	1	1	0	1.1
1	1	1	0	1	1.125
1	1	1	0	0	1.15
1	1	0	1	1	1.175
1	1	0	1	0	1.2
1	1	0	0	1	1.225
1	1	0	0	0	1.25
1	0	1	1	1	1.275
1	0	1	1	0	1.3
1	0	1	0	1	1.325
1	0	1	0	0	1.35
1	0	0	1	1	1.375
1	0	0	1	0	1.4
1	0	0	0	1	1.425
1	0	0	0	0	1.45
0	1	1	1	1	1.475
0	1	1	1	0	1.5
0	1	1	0	1	1.525
0	1	1	0	0	1.55
0	1	0	1	1	1.575
0	1	0	1	0	1.6
0	1	0	0	1	1.625
0	1	0	0	0	1.65
0	0	1	1	1	1.675
0	0	1	1	0	1.7
0	0	1	0	1	1.725
0	0	1	0	0	1.75
0	0	0	1	1	1.775
0	0	0	1	0	1.8
0	0	0	0	1	1.825
0	0	0	0	0	1.85

## Pin Connections

Row A		Row B	
Pin	Function	Pin	Function
1	VIN+	62	VIN-
2	VIN+	61	VIN-
3	VIN+	60	VIN-
4	VIN+	59	VIN-
5	NC	58	VIN-
6	NC	57	VID4
7	VID3	56	VID2
8	VID1	55	VID0
9	Memory	54	Ishare
10	PWRGD	53	OUTEN
11	VO-sen-	52	VO-sen+
12	No Pin	51	No Pin
13	VO-	50	VO+
14	VO+	49	VO+
15	VO-	48	VO-
16	VO+	47	VO+
17	VO-	46	VO-
18	VO+	45	VO+
19	VO-	44	VO-
20	VO+	43	VO+
21	VO-	42	VO-
22	VO+	41	VO+
23	VO-	40	VO-
24	VO+	39	VO+
25	VO-	38	VO-
26	VO+	37	VO+
27	VO-	36	VO-
28	VO+	35	VO+
29	VO-	34	VO-
30	VO+	33	VO+
31	VO-	32	VO-

### Notes:

- Mechanical key between pins 11 & 12 and 51 & 52
- Pin 6 is electrical key.

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### CORPORATE

Bel Fuse Inc.  
206 Van Vorst Street  
Jersey City, NJ 07302  
Tel 201-432-0463  
Fax 201-432-9542  
[www.belfuse.com](http://www.belfuse.com)

### FAR EAST

Bel Fuse Ltd.  
8F/ 8 Luk Hop Street  
San Po Kong  
Kowloon, Hong Kong  
Tel 852-2328-5515  
Fax 852-2352-3706  
[www.belfuse.com](http://www.belfuse.com)

### EUROPE

Bel Fuse Europe Ltd.  
Preston Technology Management Centre  
Marsh Lane, Suite G7, Preston  
Lancashire, PR1 8UD, U.K.  
Tel 44-1772-556601  
Fax 44-1772-888366  
[www.belfuse.com](http://www.belfuse.com)