

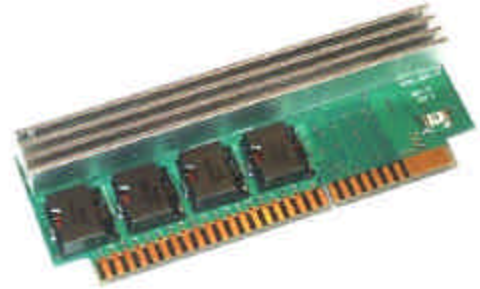
NON-ISOLATED DC/DC CONVERTERS

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 | 110% to 170% max I _o |
| Undervoltage | 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 _o (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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