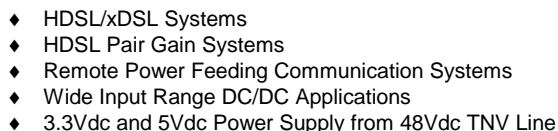


- ◆ Wide Input Voltage Range of 36-130V
- ◆ High Efficiency for Extended Operating Range
- ◆ Input-Output Isolation
- ◆ Independent Circuit Protection for Each Output
- ◆ 90 Days Warranty
- ◆ Compact Size
- ◆ UL1950, CSA22.2-950 and EN60950 Approved
- ◆ Backward compatible with the PD-NPM-0307¹



¹ The “EP” suffix to the part number indicates a plastic cover, without epoxy potting as well as enhanced efficiency and extended temperature range.



PD-NPM-0307EP

DSL NTU POWER MODULE: 36-130V_{DC} INPUT, 3.3V_{DC}, 5V_{DC} OUTPUT

ABSOLUTE MAXIMUM RATINGS*

| | |
|---|-----------------|
| Input Voltage | - 0.5 to 140V |
| Inhibit Input Voltage | - 0.5 to 130V |
| Storage Temperature | - 40°C to 100°C |
| Isolation Voltage (Input to Output 1, Output 2) | 1500V |

*These are stress ratings. Exposure of the device to any of these conditions may adversely effect long-term reliability. Proper operation other than those specified in the PERFORMANCE/FUNCTIONAL SPECIFICATIONS is not implied.

PERFORMANCE / FUNCTIONAL SPECIFICATIONS

Unless otherwise indicated, the data below applies to the specified operating input voltage, load (resistive), and temperature range. C_{in}=10μF.

| Parameter | Conditions | Min | Typ | Max | Units |
|--|--|-----------|------|------|-----------------|
| Input Data | | | | | |
| Input Voltage ⁴ | | 36 | | 130 | V |
| Inhibit Threshold | | 0.4 | | 2.4 | V |
| Input Current | At Minimum Input Voltage, Full Load | | | 280 | mA |
| Input Reflected Ripple | Measured on 10μF ESR≤1Ω external capacitor. BW=20MHz | | | 200 | mV |
| Output Data | | | | | |
| Output 1 Voltage ¹ | Maximum Load | 3.2 | 3.3 | 3.4 | V _{dc} |
| Output 2 Voltage ¹ | Maximum Load | 4.85 | 5.05 | 5.15 | V _{dc} |
| Total Output Power | | | | 6.5 | W |
| Output 1 Current | | 0.3 | | 1.5 | A |
| Output 2 Current | | 0.03 | | 0.3 | A |
| Total Regulation ² | Outputs are proportionally loaded: I _{min} < I _{load} < I _{max} I _{min} < I _{load} < I _{max} | | | | |
| Line/Load/Temperature | | | | | |
| Output 1 | | | | ±1 | % |
| Output 2 | | | | ±2 | % |
| Output 1 Cross Regulation | Output1=Full Load, I _{min} ≤ Output 2 ≤ I _{max} | | | ±2.0 | % |
| Output 2 Cross Regulation | Output2=Full Load, I _{min} ≤ Output 1 ≤ I _{max} | | | ±2.5 | % |
| Ripple and Noise⁵ | | | | | |
| Measured on 0.1μF ceramic capacitor BW=20MHz @25°C Ambient Temperature | | | | | |
| Output 1 | | | 50 | 70 | mVp-p |
| Output 2 | | | 50 | 70 | mVp-p |
| Hold-Up Time | With external input capacitor C _{in} = 47μF, Output Power = 6W. V _{in} Min = 70V, Maximum Load | 10 | | | mSec |
| Efficiency | V _{in} = 72V, Maximum Load | 80 | 82 | | % |
| Switching Frequency | | | 125 | | KHz |
| Output Short Protection | Safe period for short circuit on either or both outputs | | | ∞ | Sec |
| Reliability | | | | | |
| MTBF | Continuous Operation @30°C Ambient Temperature. Prediction method: Bellcore TR-332 Issue 5, Method 1 Case III Software Version 5.30 | 1,000,000 | | | Hours |
| Environmental Data | | | | | |
| Ambient Temperature ⁵ | Continuous Operation. No Derating | -40 | | +85 | °C |
| Relative Humidity | Non-Condensing, Per IEC 68-2-56 | | | 93 | % |

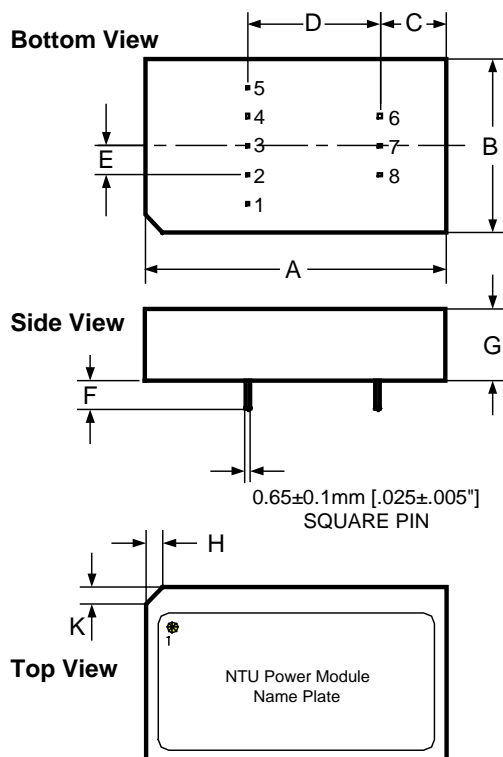
- The PD-NPM-0307EP allows for up to ±100mV output voltage adjustment for both Output 1 and Output 2. Connecting a resistor, R_{ADJ}, between Pin 5 and Pin 1 will increase the output voltage of Output 1 and Output 2. Connecting a resistor, R_{ADJ}, between Pin 5 and Pin 2 will decrease the output voltage of Output 1 and Output 2.
$$V_{out} = V_{out - Typical} \pm \frac{6.25}{51 + R_{ADJ}(K\Omega)}$$
- Output currents below the minimum rate may cause total regulation to divert from rated specifications. In cases where Output 1 or Output 2 is not in use, the unused output should be loaded for minimal current consumption with a resistor.
- The unit is designed to meet EN55022 Class B Standard with an external EMI filter. For filter design recommendations, refer to the PowerDsine xDSL Power Modules Application Note.
- In order to comply with the EN60950 standard in telecommunication networks, the unit's input voltage must not exceed 120V_{dc}.
- In order to comply with the EN60950 standard, the maximum operating ambient temperature must be 85°C.
- Output ripple may reach 150mV at ambient temperatures below -10°C.
- When the Inhibit function is not used it is recommended to permanently connect the Inhibit terminal to V_{in} RTN (pin 8).



PD-NPM-0307EP

DSL NTU POWER MODULE: 36-130V_{DC} INPUT, 3.3V_{DC}, 5V_{DC} OUTPUT

MECHANICAL DETAILS



DIMENSIONS

| | mm | Inch |
|---|------------|--------------|
| A | 52.00±0.50 | 2.05"±0.02" |
| B | 30.00±0.50 | 1.18"±0.02" |
| C | 11.42±0.50 | .45"±0.02" |
| D | 22.86±0.25 | .90"±0.01" |
| E | 5.08±0.25 | .20"±0.01" |
| F | 5.00±0.50 | .196"±0.02" |
| G | 12.50 MAX | .492" MAX |
| H | 3.00±0.25 | 0.117"±0.01" |
| K | 3.00±0.25 | 0.117"±0.01" |

PIN CONNECTIONS

| Pin # | Function | Description |
|-------|-----------------|--|
| 1 | Output 1, 2 RTN | Return line for Output 1 and Output 2 |
| 2 | Output 1 | Primary output, regulated, 3.3V/1.5 Amp maximum |
| 3 | Output 2 | Secondary output, regulated, 5V/0.3 Amp maximum |
| 4 | NC | Not connected |
| 5 | ADJ (NC) | Output Voltage Adjustment |
| 6 | Vin | Positive supply terminal. Typically feeds from the line through bridge rectifier to prohibit voltage reversal. |
| 7 | Inhibit | Logic input, relative to Vin RTN (pin 8) with an internal pull down resistor. High logic level will inhibit operation of the module, and the device's current consumption will drop to an idle level. Leaving this pin unconnected, or connecting it to a low logic level, will enable the outputs. When the Inhibit function is not used it is recommended to permanently connect the Inhibit terminal to Vin RTN (pin 8). |
| 8 | Vin RTN | Negative supply terminal pin. Typically feeds from the line through the bridge rectifier prohibit voltage reversal. |

PD-NPM-0307EP V11 0900

PowerDsine Ltd. Tel: +972-9-775-5100 • Fax: +972-9-775-5111 • Email: sales@powerdsine.com
PowerDsine, Inc. Tel: +1-631-756-4680 • Fax: +1-631-756-4691 • Email: sales@powerdsineusa.com
PowerDsine Europe Tel: +49-6187-900-849 • Fax: +49-6187-292848 • Email: europe@powerdsine.com