NB50S

50 Watts Output Power

SINGLE OUTPUT

How to Order:

NB 50 S M / 5 - A - D

- Series
- Total Output Power
- Single Output
- Industrial (I) or Military (M)
- Output Voltage: Maximum current as stated in chart
- Options:
  - A- pins out side of unit
  - B- pins out bottom of unit
  - C- pins out top of unit
  - D- through hole inserts (STD threaded)
  - I - M2.5 inserts

FEATURES

- **.38 Inch Profile**
- **Synchronization**
- **N + 1 Redundancy**
- **Remote Turn On (TTL)**
- **Parallelable Operation**
- **Output Voltage Trim Pin**
- **Over Temperature Protection**
- **Output Overvoltage/Overcurrent**
- **Built-In Test (Output Power Good)**
- **100% Environmental Screening (Military Version)**

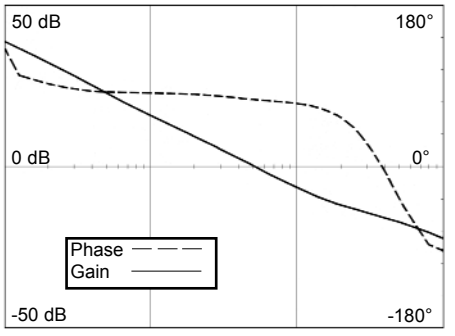
SELECTION CHART

Nominal Output Voltage	Output Current (Amps)	Model Number (Industrial)	Model Number (Military)
2	10	NB50SI/2-A	NB50SM/2-A
3.3	10	NB50SI/3.3-A	NB50SM/3.3-A
5	10	NB50SI/5-A	NB50SM/5-A
5.2	9.6	NB50SI/5.2-A	NB50SM/5.2-A
12	4.2	NB50SI/12-A	NB50SM/12-A
15	3.3	NB50SI/15-A	NB50SM/15-A
24	2.1	NB50SI/24-A	NB50SM/24-A
28	1.8	NB50SI/28-A	NB50SM/28-A

INPUT CHARACTERISTICS

	PER CHANNEL			
	Min.	Typ.	Max.	Units
Input Voltage	14	28	40	Vdc
Brown Out (75% of Full Load) [fig. I]*		12		Vdc
No Load Power Dissipation		2	4	Watt
Inrush Charge [fig. VII]*			2	mc
Reflective Ripple Current [fig. VIII]*		15		%
Logic Disable Current (Sink)		100	150	µA
Logic Disable Power In		1.2	2.5	W
Input Ripple Rejection (120 Hz)		55		dB
Input Ripple Rejection (800 Hz)		45		dB
Efficiency (FL) [fig. II & III]*	73	78-84		%
3.3 Vdc Output (FL)	67	74		%
2 Vdc Output (FL)	62	67		%
EMI: Units conform to MIL-STD-461D (on the input leads) with companion filter				
Input Transient: Units conform to MIL-STD-704D for transients up to 50V for 0.1 second				

STABILITY



OUTPUT CHARACTERISTICS

		PER CHANNEL		
	Min.	Typ.	Max.	Units
Set Point Accuracy			1 †	% V_{out}
Load Regulation		5	0.2%[1]	mV
Line Regulation		5	0.2%[1]	mV
Ripple P-P (10 MHz) (2V-24V) [fig. IV]*		45	150	mV
Ripple P-P (10 MHz) (28V)		0.2%	1%	% V_{out}
Trim Range	100		110	% V_{out}
Remote Sense Compensation		0.5		Vdc
Overvoltage Protection (2V, 3.3V)		140		% V_{out}
Overvoltage Protection (5V-28V)		125		% V_{out}
Current Sharing		±10		% I_{out}
Transient Response (Vout 1%) Time/Overshoot [fig.V & VI]*				
20-80% Load		350/300		µS/mV
Low Line - High Line		300/350		µS/mV
50-100% Load		250/300		µS/mV
Temperature Drift		0.01	0.05	%/°C
Long Term Drift		0.01	0.02	%/1KHrs
Current Limit	105	125	150	% I_{out}
Short Circuit Current	25		75	% I_{out}
Turn On Time [fig. XI]*		1.5		mS
Logic Turn On Time [fig. IX]*		1.5		mS

† 1% or 50mV, whichever is greater
[1] .2% or 25 mV, whichever is greater
* figures on page 21

All specifications are typical @+25°C with nominal input voltage under full output load conditions, unless otherwise noted. Specifications subject to change without notice.

TEMPERATURE CHARACTERISTICS

	Min.	Typ.	Max.	Units
Operating				
Industrial Grade	-40		+71	°C
Military Grade	-55		+100	°C
Storage (Ambient)	-55		+125	°C
Over Temperature Shutdown				
Industrial Grade		+75		°C
Military Grade		+105		°C
Thermal Resistance Case - Ambient		12		°C/W

MILITARY GRADE - Environmental Screening

All "Mil" Grade units receive the following:

Stabilization Bake: +125°C for 24 hours per Mil-Std-883, M1108, Condition B

Temperature Cycling: 10 cycles at -55°C to +125°C (transition period 36 minutes) per Mil-Std-883, M1010, Condition B

Burn-in: 160 hours at +85°C min.

Final Testing

See "Guide to Operation" for full details

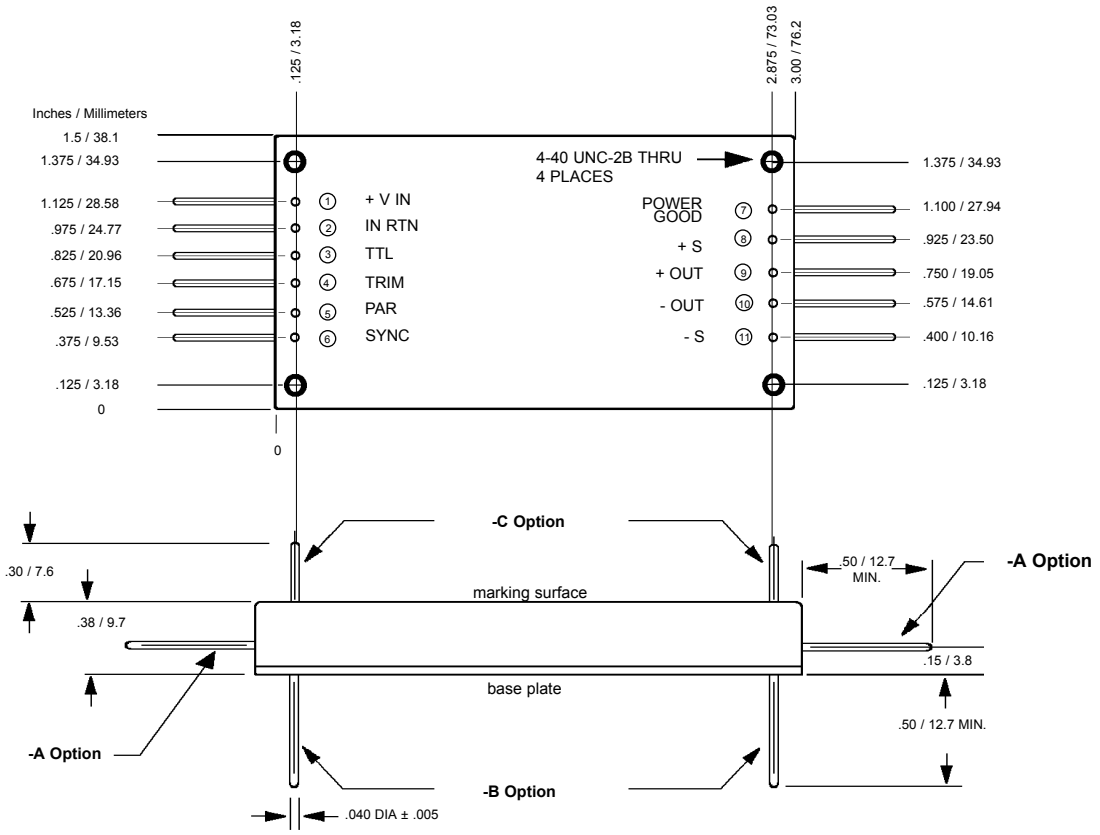
ISOLATION CHARACTERISTICS

	Min.	Typ.	Units
Isolation:			
Input to Output	500		Vdc
Output to Base	250		Vdc
Input to Base	500		Vdc
Input to Output Capacitance		0.022	µf
Insulation Resistance (@50 Vdc)	50		MOhm

MECHANICAL CHARACTERISTICS

Weight	3.2	oz.
	90	grams
Size	3.0 x 1.5 x 0.38	inch
	76.2 x 38.1 x 9.7	mm
Volume	1.71	$inch^3$
	28	cm^3
Material	Pin	Brass (Solder Plating)
	Baseplate	Aluminum 5052-H32
	Case	28 Gauge Steel (cold rolled)
Finish		Nickel Plating
Mounting	Standard	4-40 inserts provided in baseplate
	I Option	M2.5 metric inserts (4 places)
	D Option	0.115 DIA thru holes (4 places)

CASE DRAWINGS



Tolerances: inches - x.xx = ±0.03, x.xxx = ±0.015 mm - x.x = ±0.8, x.xx = ±0.40

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