Features

- Low output ripple
- 10 amp output current
- 92 % efficiency
- Low 0.5 ˝ profile
- Power good
- Remote sense

- Adjustable Vout
- Short-circuit protection with auto-restart
- Fast transient response
- High-temperature operation
- Remote enable
- Output precharge capability

BOURNS®

SLN10A-5SA Series – Power Module

General Information

The SLN10A adds a new meaning to low cost DC-DC converters. This non-isolated SIP uses a 5 V input to provide 10 Amps of output current at voltages ranging from 0.8 V to 2.5 V. The SLN10A output is adjustable by the user to provide any voltage within its range. Its extra low 0.8 V output will power even the latest in ASICs, microprocessors, and DSPs.

The SLN10A has an industry standard pin-out, is 2 inches long, and only 0.5 inches high. Its total footprint is a space saving 0.75 in². Features include Enable/Disable, output voltage trim, remote sense, short circuit protection with auto-restart, fast transient response, and high temperature operation. The SLN10A is one of the most cost-effective DC-DC converters available.

Input Specifications

Voltage ....4.5 VDC Min.
5 VDC Nom.
5.5 VDC Max.
Current ....10 A Nom.
Remote Enable
   High = Disable.....................2.4 VDC Min.
   Low = Enable
   ....0.4 VDC max. (open = enable)
Enable/Disable Current ....250 µA Nom.

Output Specifications

Current ....0 to 10 A
Current Limit ....11 to 18 A
Voltage Setpoint Accuracy
   ....±1 %Vnom (nominal)
   ±2 %Vnom (max.)
   optional ....±0.5 %Vnom (nominal)
   ±1 %Vnom (max.)
Line Regulation ....±0.1 %Vnom
Load Regulation....................±0.2 % Vnom
Ripple...20 mV pp
Dynamic Response
   50 to 100 % load..................40 mV Nom.
   20 µs Nom.
   100 to 50 % load..................40 mV Nom.
   20 µs Nom.
Temperature Regulation
   ....±0.02 %Vout/°C Max.

General Specifications

MBTF ....2,000 kHrs Nom.
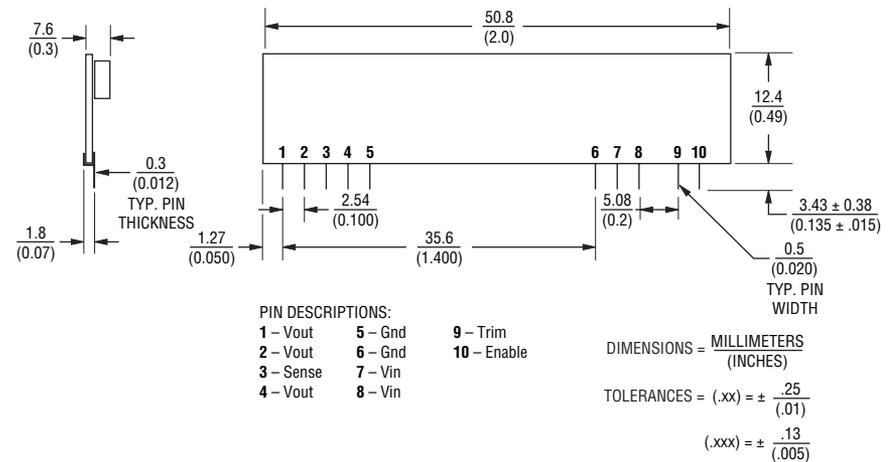(80 % load, 25 °C)
Operating Temperature........-40 to +100 °C
Storage Temperature...........-55 to +125 °C
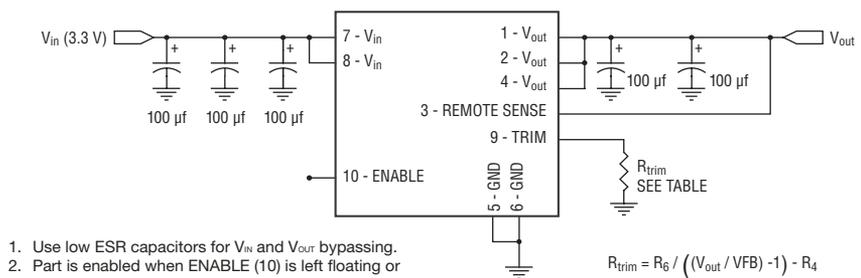Switching Frequency............300 kHz Nom.

Standard Options

	Nominal Input (V)	Input Voltage (V)	Output Voltage (V)	Output Current (A)	Ripple Max. (mV pp)	Efficiency Typ. (%)
SLN10A-5SA	5	4.5 to 5.5	0.8 to 3.5	10	40	90

Product Dimensions

PIN DESCRIPTIONS:
1 – Vout **5** – Gnd **9** – Trim
2 – Vout **6** – Gnd **10** – Enable
3 – Sense **7** – Vin
4 – Vout **8** – Vin

DIMENSIONS = $\frac{\text{MILLIMETERS}}{\text{(INCHES)}}$

TOLERANCES = (.xx) = ± $\frac{.25}{(.01)}$

(.xxx) = ± $\frac{.13}{(.005)}$

Product Schematic

1. Use low ESR capacitors for V_{IN} and V_{OUT} bypassing.
2. Part is enabled when ENABLE (10) is left floating or grounded.
3. Apply 2.4 to 5 VDC to ENABLE (10) to disable (shut down) the part.
4. Use the table above to determine an R_{TRIM} resistor for the desired voltage.
5. To get an intermediate voltage between 0.800 V and 3.500 V, use the equation at right.
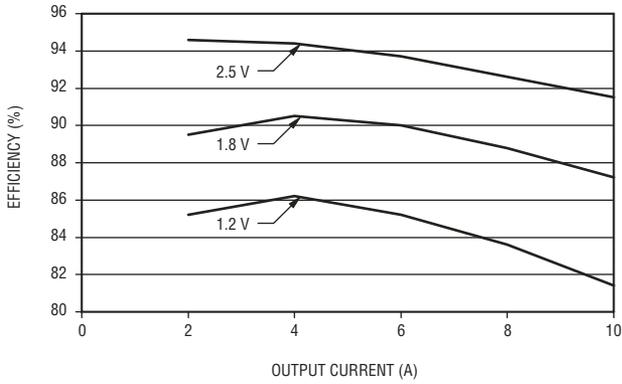
$R_{trim} = R_6 / \left((V_{out} / VFB) -1 \right) - R_4$
WHERE R_4 = 23.7K Ohms
R_6 = 80.6K Ohms
VFB = 0.800 VDC

V_{OUT}	R_{TRIM} (kΩ)
3.5	0.182
3.0	5.62
2.5	14.3
2.0	30.1
1.5	68.1
1.0	301
0.8	open

Efficiency Curve
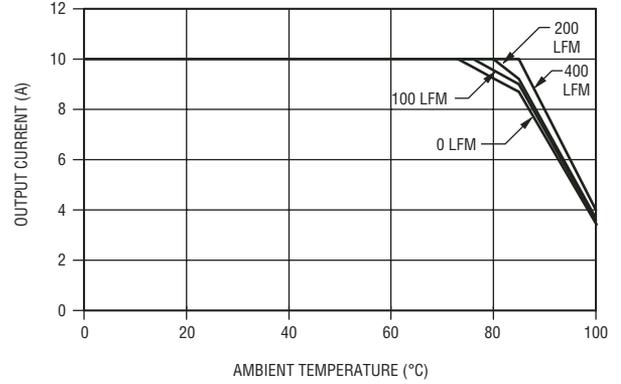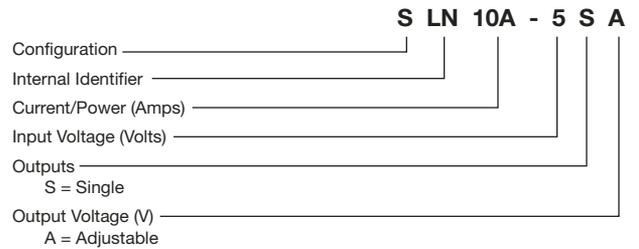

EFFICIENCY (%) vs OUTPUT CURRENT (A)

2.5 V
1.8 V
1.2 V

Temperature Derating

OUTPUT CURRENT (A) vs AMBIENT TEMPERATURE (°C)

200 LFM
400 LFM
100 LFM
0 LFM

How to Order

S LN 10A - 5 S A

Configuration
Internal Identifier
Current/Power (Amps)
Input Voltage (Volts)
Outputs
  S = Single
Output Voltage (V)
  A = Adjustable

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