

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

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

Voltage4.5 VDC Min.
 5 VDC Nom.
 5.5 VDC Max.
 Current10 A Nom.
 Remote Enable
 High = Disable2.4 VDC Min.
 Low = Enable
 0.4 VDC max. (open = enable)
 Enable/Disable Current250 μ A Nom.

Output Specifications

Current0 to 10 A
 Current Limit11 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
 Ripple20 mV pp
 Dynamic Response
 50 to 100 % load40 mV Nom.
 20 μ s Nom.
 100 to 50 % load40 mV Nom.
 20 μ s Nom.
 Temperature Regulation
 ± 0.02 % Vout/°C Max.

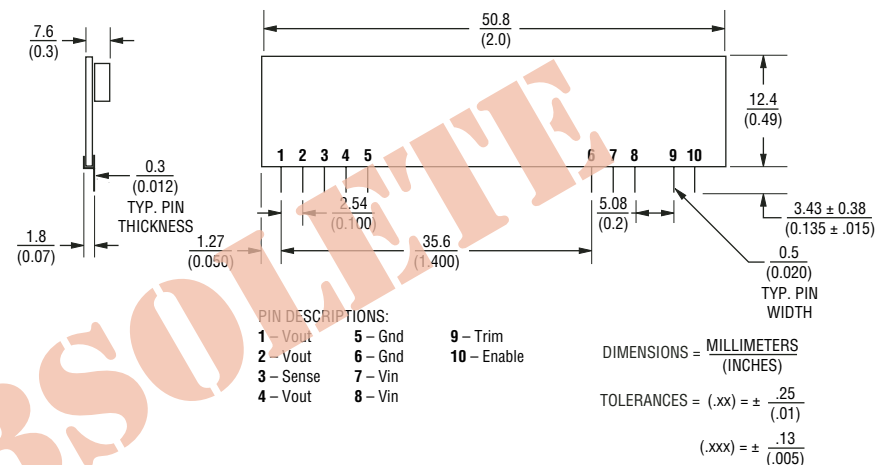
General Specifications

MBTF2,000 kHrs Nom.
 (80 % load, 25 °C)
 Operating Temperature-40 to +100 °C
 Storage Temperature-55 to +125 °C
 Switching Frequency300 kHz Nom.

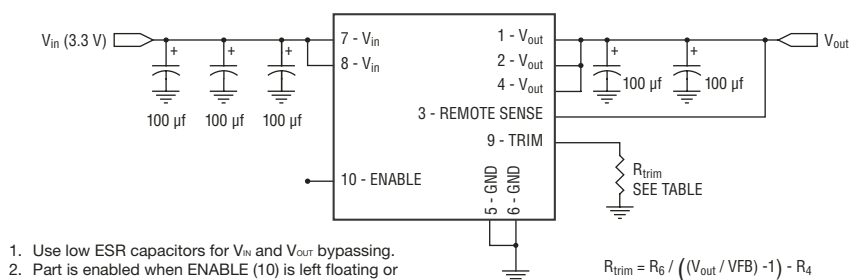
Standard Options

	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



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.

$$R_{trim} = R_6 / ((V_{out} / VFB) - 1) - R_4$$

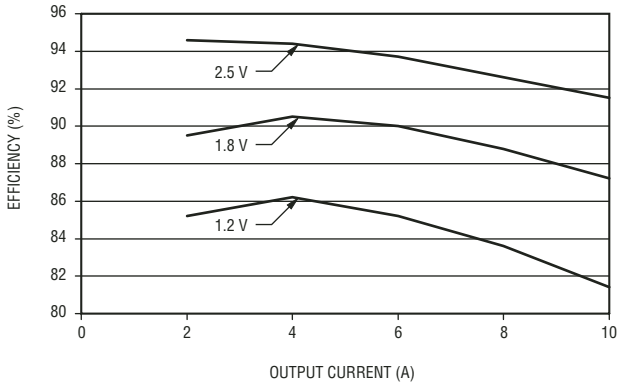
WHERE $R_4 = 23.7K$ Ohms
 $R_6 = 80.6K$ Ohms
 $VFB = 0.800$ VDC

V _{OUT}	R _{TRIM} (k Ω)
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

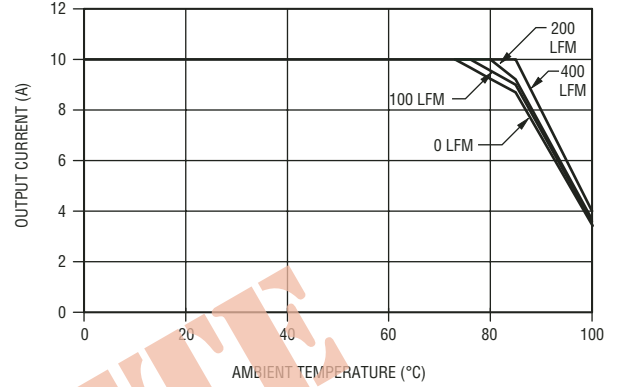
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Efficiency Curve

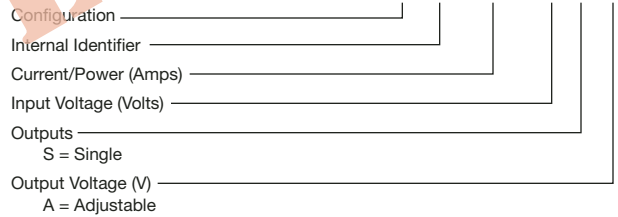


Temperature Derating



How to Order

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