

The SL500 converter is a standalone, 91% efficient COTS converter in a standard 2.4" x 4.6" x 0.52" full brick package. Protection features include overvoltage, overcurrent, overtemperature, and short circuit protection. The converter is parallelable for higher power requirements and synchronizable for noise sensitive systems. A 300 KHz fixed switching frequency aids in filtering of EMI. The SL500 EMI filter is third party qualified and meets Mil-Std-461F for conducted emissions.

Agency Approvals

100% Environmental Screening for Military Versions Meets MIL – Standards:
 MIL – STD – 454
 P4855 – 1A
 MIL – STD – 704D
 MIL – STD – 810E
 MIL – S – 901C
 MIL-STD- 461F with companion filter

Military Grade Environmental Screening

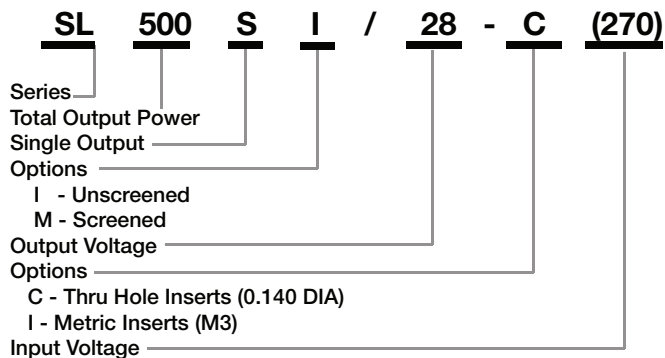
- All "Mil" Grade units receive the following:
- Stabilization Bake:**
 +125°C for 24 hours per Mil-Std-883, M1108, Condition B
- Temperature Cycling:**
 10 cycles at -55°C to +125°C (transition period 36 minutes) per Mil-Std-883, M1010, Condition B
- Burn-in:**
 160 hours at +85°C min.
- Final Testing**

Notes:
 See "Guide to Operation" for full details

Features

- Input Range from 200Vdc to 400Vdc
- No Derating from -55°C to +100°C
- Efficiency: Up to 91%
- Parallelable
- Synchronizable
- Power Density: Up to 87W / in³
- Non-latching Overtemperature Protection
- Fixed Frequency Power Conversion
- Latching Output Overvoltage Protection

How to Order



Model Number (Unscreened)	Nominal Output (Vdc)	Output Current (Amps)
SL500SI/28 (270)	28	17.9
SL500SI/24 (270)	24	20.9
SL500SI/15 (270)	15	25
SL500SI/12 (270)	12	25
SL500SI/5 (270)	5	40
SL500SI/3.3 (270)	3.3	40

Notes:
 Standard unit has pins out the top with 6-32 THD inserts, written as SL500SI/28-270

Input Characteristics - 270Vdc Input

	MIN	TYP	MAX	UNITS
Input Voltage	200	270	400	Vdc
Brown Out (75%) Full Load	185			Vdc
No Load Power Dissipation		27		W
Inrush Current <20 μ S Duration		30		A
Reflected Ripple Current		2.8		A rms
Logic Disable Current (Sink)			0.5	mA
Logic Disable Power In			2	W
Input Ripple Rejection (120HZ)		60		dB
Efficiency Up To		91		%
Input Transient Per MIL-STD-704D (Operating 100ms)			500	Vdc
EMI	Use Companion Filter			

Output Characteristics

	MIN	TYP	MAX	UNITS
Set Point Accuracy			1	% Vout
Load Regulation			± 0.3	% Vout
Line Regulation			± 0.2	% Vout
Ripple P-P (20MHz)		1	3	% Vout
Trim Range	90		110	% Vout
Remote Sense				
12V, 15V, 24V, 28V			0.50	Vdc
3.3V, 5V			0.25	Vdc
Overvoltage Protection		125	135	% Vout
Current Sharing			± 8	% Iout / at Full Load
Transient Response				% Vout / μ S
50-75% Load (0.2A/ μ S)			3/300	Setting Time to Within 1% Vout
Temperature Drift		0.01	0.03	%Vout / $^{\circ}$ C
Long Term Drift		0.02	0.05	%Vout / 1KHrs
Current Limit	110		140	%Iout
Short Circuit Current	25		75	%Iout Hiccup Type
Turn-on Time (Power Input)		150		mS FL 270V
Logic Turn-on Time		90		mS FL 270V
Switching Frequency		300		KHz
Sync Input Voltage	4.5		5.5	Vp-p
Sync Input Frequency	330		360	KHz
Sync Input Duty Cycle	15		55	%
Turn-on Overshoot			0.1	% Vout

Note: Output Ripple is measured with 1 μ F ceramic and 22 μ F low ESR Tantalum Capacitor

SL500 Series - Data Sheet

All specifications are typical @ 25 $^{\circ}$ C with nominal input voltage under full output load conditions, unless otherwise noted. Details subject to change without notice.

Temperature Characteristics

	MIN	TYP	MAX	UNITS
Operating (Baseplate)	-55		+100	°C
Storage (Ambient)	-55		+125	°C
Over Temperature Shutdown		+105	+110	°C / Auto Recovery
Thermal Resistance (Case to Ambient)		5.71		°C / W

Isolation Characteristics

	MIN	TYP	MAX	UNITS
Input to Output	1000			Vdc
Output to Base-plate	500			Vdc
Input to Base-plate	1000			Vdc
Insulation Resistance (Measured at 50 VDC)	50			Mohm
Input to Output Capacitance		0.003		μF

Mechanical Characteristics

	TYP	UNITS
Weight	7.6	oz
Size	2.4 x 4.6 x 0.52	in
	61 x 116.9 x 13.2	mm
Volume	5.74	in ³
	94	cm ³
Mounting (STD)	Threaded, #6-32	
Construction	5 sided metal can, nickel plated cover, aluminum baseplate	

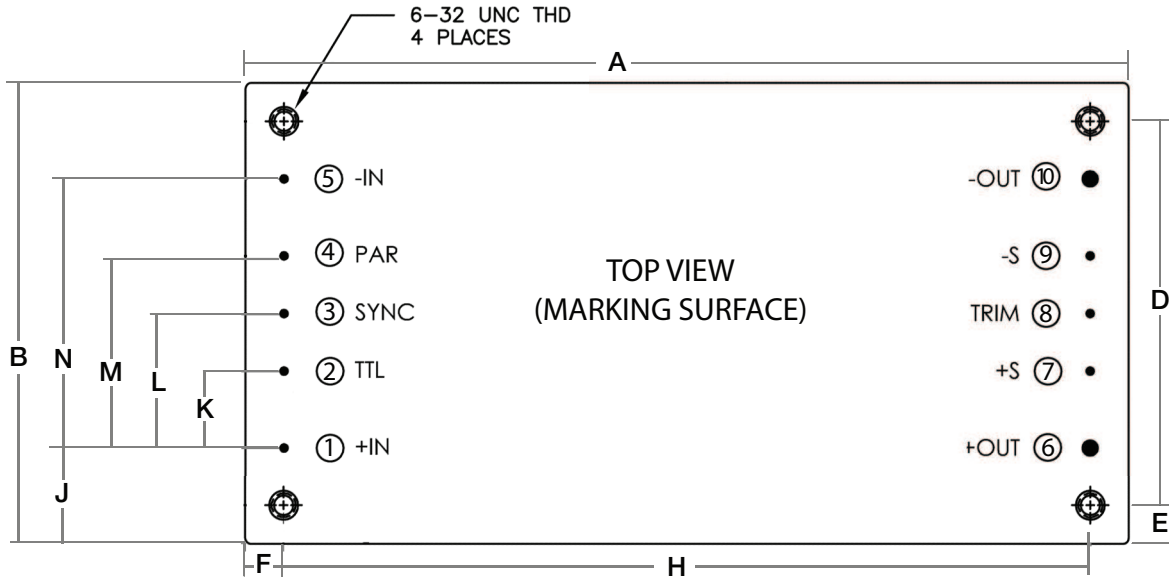
SL500 Series - Data Sheet

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

Case Drawings

Standard Model

Pin placement on top of unit



C Option

Thru hole inserts (0.140 DIA)

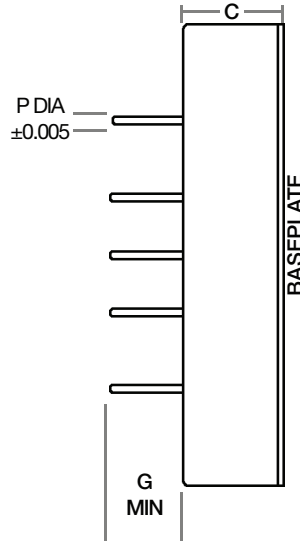
Model number written as SL500SI/28-C (270)

Tolerances: Inches x.xx = ± 0.03
 x.xxx = ± 0.015
 mm x.xx = ± 0.4
 x.x = ± 0.8

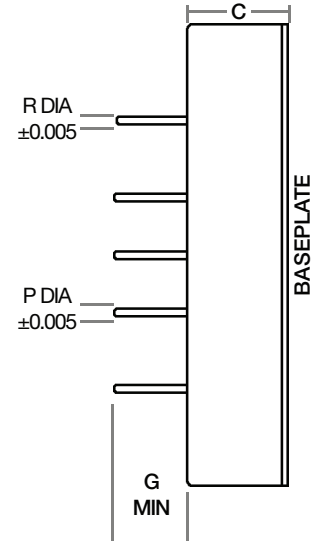
Material: Pin = Brass (Solder Plating)
 Baseplate = Aluminum 5050-H32
 Case = Steel
 Finish = Nickel Plating

Mounting: 6-32 THD inserts are provided in baseplate
 Metric: M3 inserts

INPUT PINS



OUTPUT PINS



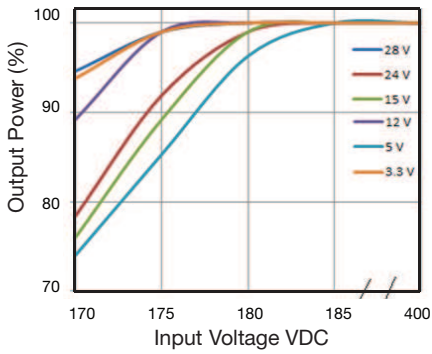
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R
inch	4.60	2.40	.52	2.000	.20	.20	.375	4.200	.50	.400	.700	1.000	1.400	.040	.080
mm	116.9	61.0	13.2	50.80	5.1	5.1	9.53	106.68	12.7	10.20	17.8	25.40	35.60	1.02	2.03

SL500 Series - Data Sheet

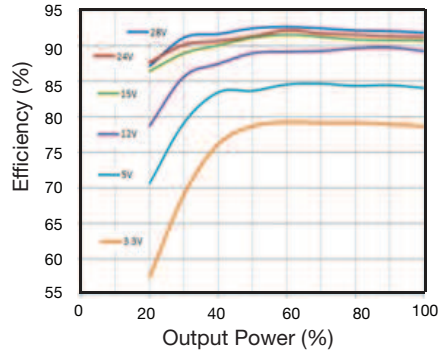
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Characteristics

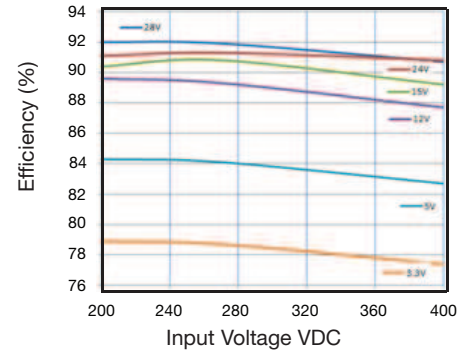
I. Input Voltage vs. Output Power



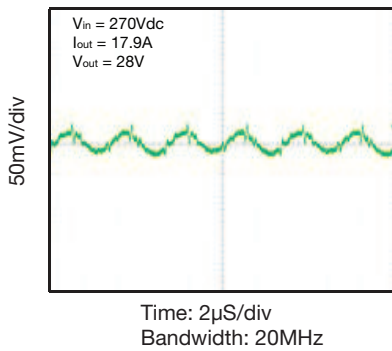
II. Efficiency vs. Output Power



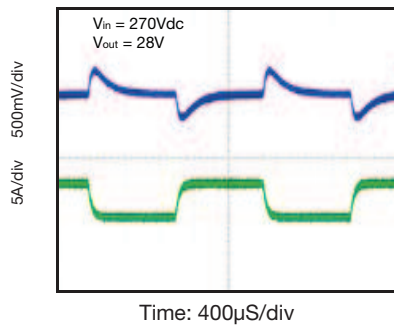
III. Efficiency vs. Input Voltage



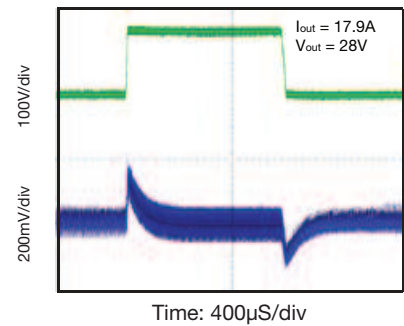
IV. Output Voltage Ripple



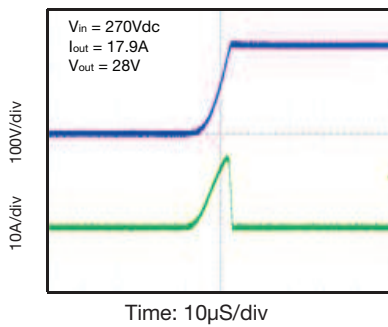
V. Load Transient Response



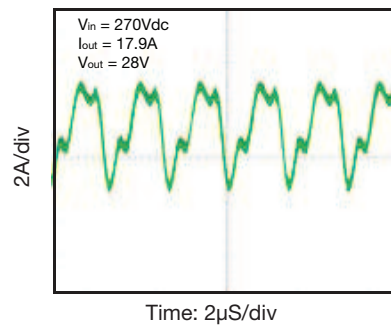
VI. Input Transient Response



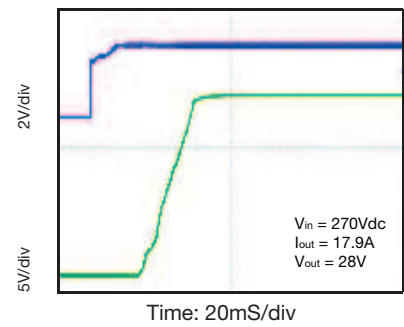
VII. Input Inrush Current



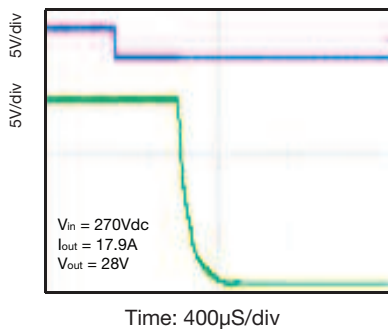
VIII. Input Current Ripple



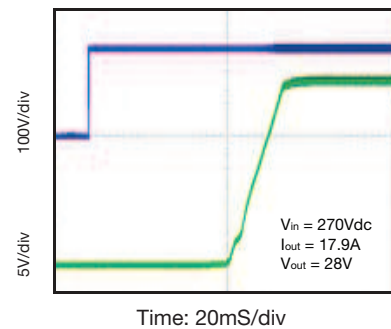
IX. TTL Turn On



X. TTL Turn Off



XI. Turn On



XII. Turn Off

