Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832
Email & Skype: info@chipsmall.com Web: www.chipsmall.com
Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China

Data sheet

SL20 with 48...56V

SL20.113

- Input: AC 115/230V **auto select**
- Output: 48...56V / 480W
- 93% Efficiency
- Ideal for parallel operation

PULS

CB scheme IEC60950

c UL us UL508 LISTED IND. CONT. EQ. 18 WM, 60°C

c UL us UL60950 E137006 CUL/CSA-C22.2 No 60950

Type approval acc. to:
- IEC / EN60950
- EN50178 Overvolt. cat. III
- EN60204

CE EMC and Low Volt. Directive

Datasheet

Input

Input voltage	AC 100-120V/220-240V, 47-63Hz, auto select
Rated tolerances • Continuous • Short-term (30s) at 48V/10A	 AC 85...132V or AC 184...264V AC 85...140V or AC 175...280V
Input current I_n	<12A (115V range) <6A (230V range)

Inrush current limiting with active bypass of the limiting resistor (NTC).

Inrush current I_{pk}	<18A @ AC 264V (T_{amb} = +25°C, cold start) <37A @ AC 264V (T_{amb} = +50°C, cold start)
Fuse loading I^2t	<5A^{2}s (T_{amb} = +25°C, cold start) <8A^{2}s (T_{amb} = +50°C, cold start)

To be fused with a 16A, B-type 'circuit-breaker' switch based on the usual thermomagnetic overload sensing principle (used anyway to fuse the input lines).

Transient handling	Transient resistance acc. to VDE 0160 / W2 (750V / 1.3ms), for *all* load conditions.
Hold-up time	30ms at 48V/10A, AC 230V$_{in}$ 35ms at 48V/10A, AC 120V$_{in}$ 15ms at 48V/10A, AC 100V$_{in}$

Efficiency, Reliability etc.*

Efficiency	typ. 93% (AC 230V, 48V/10A)
Losses	typ. 36.2W (AC 230V, 48V/10A)
MTBF	519.000h acc. to Siemensnorm SN29500 (48V/10A, 230V, T_{amb} = 40°C)
Life cycle (electrolytics)	The unit exclusively uses longlife electrolytics, specified for +105°C (cf. 'The SilverLine', p.2). High reliability, as • only five aluminium electrolytics and • no small aluminium electrolytics are used.

* For further information see data sheets„The SilverLine", „SilverLine Family Branches" and mechanics data sheet SL20

Output

Output voltage	DC 48...56V, adjustable by (covered) front panel potentiometer; preset: 48V ±0.5% Adjustment range guaranteed
Output noise suppression	Radiated EMI values below EN50081-1, even when using long, unscreened output cables.
Ambient temperature range T_{amb}	Operation: 0°C...+70°C (> 60°C: Derating) Storage: -25°C...+85°C

Rated continuous loading with convection cooling:

• T_{amb}=0°C - 60°C	48V/10A resp. 56V/8.6A
short-term (<30s)	48V/12.5A resp. 56V/10.7A
Derating	12W/K (at T_{amb} = 60-70°C)
Voltage regulation	better 2% over all
Ripple	incl. spikes (20MHz bandw.), 50Ω measurem.
• Output charact. S	<40mV$_{PP}$ (<0.09%)
• Output charact. P	<80mV$_{PP}$ (In: AC 230V, Out: 48V/10A)
(S/P: **S**ingle/**P**arallel Mode)	<100mV$_{PP}$ (In: AC 184V, Out: 56V/8.6A)
Over-voltage protection	At 58.6V ± 2.3%: switch to hiccup mode

Front panel indicators:
- Green LED on, when V_{out} = V_{out} adjusted
- Red LED on, when V_{out} < V_{out} adjusted

Parallel operation	Yes, up to ten SL20

To achieve current sharing the output V/I characteristic can be altered to be 'softer' (47.9V at 0A, 45.6V at 10A). This is done by repositioning an external bridge connection (without opening the unit).

Power Back Immunity	max. 57V

Construction/ Mechanics*

Housing dimensions and Weight

• W x H x D	220mm x 124mm x 102mm (+ DIN rail)
• Free space for ventilation	above/below 70mm recommended left/right 25mm recommended
• Weight	1.8kg

Design advantages:
- All connection blocks are easy to reach as mounted on the front panel.
- PVC insulated cable can be used for all connections, as the connection blocks are mounted in the cooler area on the underside of the unit.

Order information

Order number	Description
SL20.113	
SLZ02	(wall mounting set; contains 2 pcs.)

Start / Overload Behaviour

Start-up delay	typ. 0.55s
Rise time	appr. 20-80ms, depending on load
Overload behaviour	Puls Overload Design (see right-hand diagram)

Advantages:
- No disconnection/hiccup, thus overloading is possible also for a longer period of time (load start-up), ideal for parallel operation.
- High overload/short-circuit current due to straight characteristic; each bias point of the V/I characteristic extends 10A.
- Advantage: Due to the high and continuously supplied overload current the unit starts reliably even with awkward loads (DC-DC converters, motors). No 'sticking' can occur as, for example, with fold-back characteristics, and secondary fuses trigger more reliably.

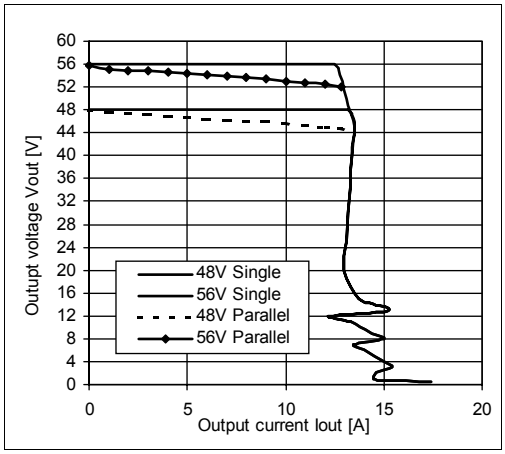
Further information

Further information, especially about
- EMC
- Connections
- Safety, Approvals
- Mechanics and Mounting,

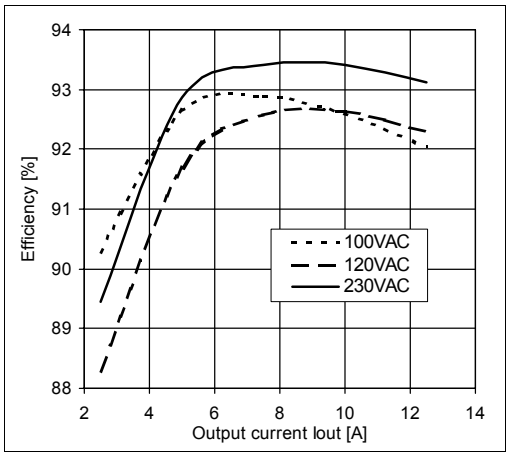
see page 2 of the „The SilverLine“ data sheet

For detailed dimensions
see SilverLine mechanics data sheet SL20

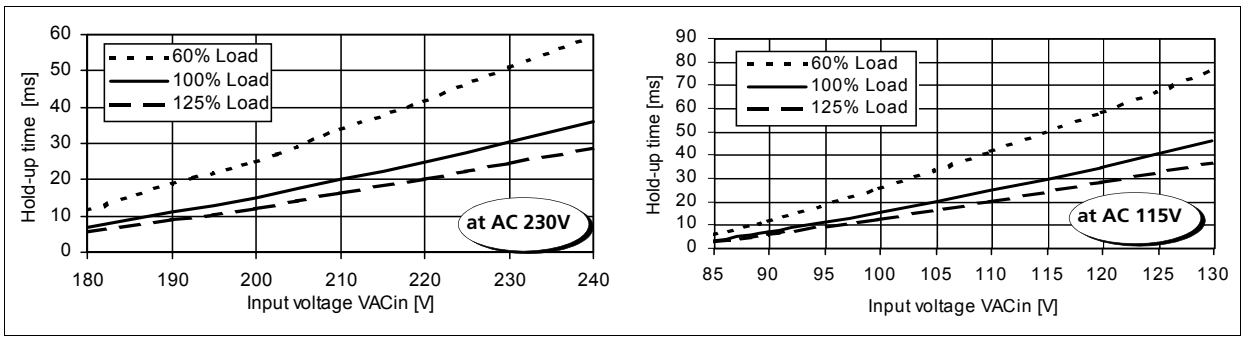
Output characteristic (typ.)



Efficiency (typ., at V_{out}=48V)



Hold-up time (min., at V_{out}=48V)



Unless otherwise stated, specifications are valid for AC 230V input voltage, +25°C ambient temperature, and 5 min. run-in time. They are subject to change without prior notice.

Your partner in power supply:

European Power Supply Manufacturers Association

Bayerns Best 50
Czech 100 Best
Europe's 500

PULS GmbH
Arabellastraße 15
D-81925 München
Tel.: +49 89 9278-0
Fax: +49 89 9278-199
www.puls-power.com