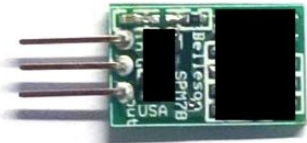


SP Standard Superpower

- ◇ Our mid-line (and first) regulator, great performance, small slim profile, up to 500mA output current.
- ◇ output voltage 3.3V to 30V
- ◇ positive and negative versions
- ◇ 500mA output current
- ◇ <2V drop out
- ◇ 2W max power dissipation

SPM Mini Superpower

Small and perfect for ADCs, DACs and clocks



- ◇ output voltage 3.3V to 30V
- ◇ positive and negative versions
- ◇ 225mA output current
- ◇ <1V drop out
- ◇ 350mW max power dissipation



Expert Opinion

After reading the Superpower patent, Bob Dobkin, Chief Technical Officer at Linear Technology Inc., co-inventor (with Bob Widlar) of LM317, and more recently LT3080, emailed to say "I can see how it will have excellent specs and is a neat way to make a regulator."

Comments from customers

"...saw a ~6db improvement in noise floor and imd dropped by 50%"



"The noise is lowered by about 4dB... and the response in my opinion is faster and it has more low end."

"I'm...listening to music and being thrilled by the improvement your Super Regulators have provided. I've performed many mods but this is the best bang for the buck by far!!"

YOUR comment here!



The world's most complete line of ultra high performance voltage regulators—



SUPERPOWER

- ◇ **SPZ** 3.3V to 30V @ 3A
- ◇ **SPHP** 3.3V to 100V @ 10A
- ◇ **SPLV** 1.2V to 2.5V @ 2A
- ◇ **SPM** 3.3 to 30V @ 225mA
- ◇ **SPJ** 3.3V to 30V @ 2A
- ◇ **SP** 3.3V to 30V @ 500mA
- ◇ **SPHV** to 400V (special order)

Superpower voltage regulators are the premier power regulation solution for the very best consumer and professional audio systems. Enhance your system's performance with the best available voltage regulators, from BelleSon!

Superpower—some details

Belleson offers the industry's broadest line of voltage regulators, with output voltage 1.2V to 100V and output current 225mA to 10A. (Up to 400V is available from SPHV by special order.)

Our unique patented design creates an inherent fixed voltage and a reference current. The reference current allows the fixed voltage to float, making it possible for V_{out} to be any value. This makes gain-bandwidth of the loop amplifier independent of output voltage, unlike other designs that increase gain to get higher output voltage.

Unlike previously published super regulators, the patented design (USPTO 8,294,440) guarantees start-up at the correct voltage.

Overall measured performance is better than other commercially available 3 pin regulators. Although specifications vary somewhat among the various products, generally they have

- ◇ low noise, less than 1ppm of V_{out}
- ◇ low drop out $\leq 1V$ @2A for some versions
- ◇ amazing ripple rejection, 110dB
- ◇ transient step recovery $< 10\mu\text{sec}$ for 1A step
- ◇ output impedance less than $10m\Omega$ from DC to 100kHz

Superpowers are available to fit standard LM78xx and LM1117 equivalent TO-220 footprints with output current to 3A (more with adequate heat sink), or with special pin connections for high power (SPHP) and high voltage (SPHV).

Used for linear raw supplies and to clean SMPS power, Belleson LLC has been improving electronic systems since 2010, let us improve yours!

SPZ 3A Micro Superpower

Our newest regulator fits a TO-220 footprint; SPZ puts amazing performance in a tiny space!



- ◇ output voltage 3.3V to 30V
- ◇ 3A output current
- ◇ positive and negative versions
- ◇ $\leq 1V$ drop out @ 2A
- ◇ 110dB PSRR/ripple rejection
- ◇ $< 1\mu\text{V/V}$ RMS noise, 20Hz–20kHz
- ◇ $< 10\mu\text{sec}$ recovery time for 1A current step

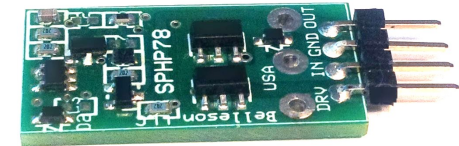
SPJ High Current Superpower

Our original high current regulator!

- ◇ output voltage 3.3V to 30V
- ◇ positive and negative versions
- ◇ 2A output current
- ◇ $\leq 1V$ drop out @2A
- ◇ 110dB PSRR/ripple rejection
- ◇ $< 1\mu\text{V/V}$ RMS noise, 20Hz–20kHz
- ◇ $< 10\mu\text{sec}$ recovery time for 1A current step

SPHP High Power Superpower

Our 1000W (10A at up to 100V) regulator uses an external power transistor (not shown) to deliver superbly regulated output with enough voltage and current for power amps.



- ◇ Delivers 1000W to load
- ◇ output voltage 3.3V to 100V
- ◇ 10A output current
- ◇ positive and negative versions
- ◇ $< 5\mu\text{V/V}$ RMS noise, 20Hz–20kHz
- ◇ $< 10\mu\text{sec}$ recovery time for 1A current step

SPLV Low Voltage Superpower

The perfect regulator for low voltage technologies such as the ESS 9018 Sabre³² reference DAC.



- ◇ output voltage 1.2V to 2.5V
- ◇ positive and negative versions
- ◇ 1A output current
- ◇ Operates from 5V input supply
- ◇ The usual fast transient response, low noise and high ripple rejection