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Small, Efficient POL Delivers Up To 33 W For Industrial Applications

Flex Power Modules' PNA series non-isolated point of load regulators (POLs) offer excellent efficiency and thermal performance in a small form factor. The first device in the series, the PNA2405S3S, features a compact size (0.51 x 0.48 x 0.24 in) and wide input voltage range of 9 V to 36 V, making it well suited for a range of industrial applications, including robotics, factory automation and process control, and covering both 12-V and 24-V power systems (see the figure).

The regulator has a high efficiency of 95.5% at 12-V input and 5.5-V output at full load. It delivers an adjustable output of 0.9 V to 5.5 V, at up to 6 A of output current, which translates to a maximum power output of 33 W. The PNA series provides good thermal performance, and can operate at full load in ambient temperatures above 100°C. It has an operating temperature range of -40°C to + 125°C.

The regulator is available at a competitive cost, and provides an attractive price/performance ratio. It offers an MTBF of up to 71.84 million hours.

A voltage tracking function enables one regulator to use the output voltage of another as a reference to follow its turn-on and turn-off behavior. This simplifies power-up sequencing. The regulator also includes a power good (PG) function, for further control of sequencing, and supports soft start with time-based sequencing. The regulator can be synchronized to an external clock, eliminating beat frequencies reflected back to the input supply rail.

The PNA2405S3S will be available in Q2 2021. Samples are available now. Further information can be found at www.flexpowermodules.com or by contacting pm.info@flex.com.

Figure. To save board space, the PNA series is provided in a small form factor, measuring 13 x 12.35 x 6.2 mm (0.51 x 0.48 x 0.24 in). This supports bottom-side PCB mounting, thus further reducing space requirements.