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Space-Grade POL Delivers 10 A With 95% Efficiency

[VPT's](#) VSCPL1210SG is the first point-of-load dc-dc converter (POL) in the VSC series of space-grade COTS power supplies. Delivering up to 10 A of output current with peak efficiency up to 95%, the VSCPL1210SG expands VPT's NewSpace product offerings and completes a full power-conversion solution that includes isolated dc-dc converters, point-of-load converters, and EMI filters.

The VSC series is a commercial off-the-shelf (COTS) product line designed for smaller satellites in low Earth orbits (LEO), and NASA Class D missions where the balance of cost and guaranteed performance is critical. This series is radiation tested to 42 MeV/mg/cm² with no destructive SEE events (SEGR, SEB, SEL) and tested to 40 krad(Si), guaranteed to 30 krad(Si), for TID in accordance with VPT's in-house radiation hardness assurance (RHA) plan.

Operating from a 4.5-V to 13.2-V input and offering an adjustable output from 0.8 to 5.0 V, the VSCPL1210SG delivers reliable performance across the full temperature range of -55°C to +105 °C with no power derating. Its proprietary packaging enables dual-side heatsinking with low outgassing, while the surface-mount design supports streamlined reflow soldering and simplified board-level integration (see the figure).

To further expand the series, VPT will introduce two additional point-of-load converters later this year: the VSCPL0510SG with a 10-A output and the VSCPL1220SG with a 20-A output.

The VSC series complements VPT's hermetic hybrid SVL series of rad-hard products available on DLA SMDs. The VSCPL1210SG is manufactured in an ISO9001, J-STD-001, and IPC-A-610 certified facility and is available for order now. Sales are subject to all applicable U.S. export license restrictions and regulations.

For more information, see the VSCPL1210SG [page](#) or contact a local VPT [distributor](#).



Figure. "We designed the VSCPL1210SG to deliver high efficiency, tight regulation, and simplified board-level integration while maintaining the radiation tolerance required for LEO environments," said Brandon Witcher, principal design engineer. "The goal was to meet NewSpace performance needs without pushing beyond the cost constraints that define this market."