

ISSUE: [March 2024](#)

## Space COTS DC-DC Converters Deliver Up To 100 W For New Space Applications

From [VPT](#), a HEICO company, the VSC100-2800S is an addition to the VSC series of space COTS dc-dc converters. Designed for the “new space” market, the VSC series complements VPT’s hermetic hybrid SV/SVL series of rad hard products available on DLA SMDs. The VSC series is intended for use in commercial rad-tolerant satellite applications and NASA Class D missions where the balance of cost and guaranteed performance is critical.

The VSC100-2800S converters generate a single output of +3.3 V at 66 W (VSC100-2800S-283R3S), +5 V at 100 W (VSC100-2805S), +12 V at 100 W (VSC100-2812S), or +15 V at 100 W (VSC100-2815S). Each of these models has a trim range of +10%/-20%. The converters operate from a wide input voltage range of 16 V to 40 V plus 50-V transient.

Within the converter, sensitive semiconductors are RLAT to 40 krad (Si) per MIL-STD-883 Method 1019 and guaranteed to 30 krad (Si) TID. Converters are characterized to LET > 42 MeV/mg/cm<sup>2</sup> for catastrophic events and LET > to 30 MeV/mg/cm<sup>2</sup> for SET and SEFI. The company’s proprietary packaging creates a dual-side heatsinking option with very low outgassing.

VPT’s vice president of engineering, Leonard Leslie, stated, “Drawing on VPT’s extensive expertise in the development of radiation-hardened dc-dc converters, the VSC series ensures the optimal level of radiation performance for low Earth orbit (LEO) applications, all while maintaining an exceptionally competitive cost.”

The VSC family of commercial rad tolerant products from 5 W to 100 W+ are for use on the many new space low-cost, high-volume constellations with reduced radiation requirements, with the VSC100-2800S as the newest addition to the VSC family. The VSC100-2800S is available for immediate sale.

The VSC100-2800D (a version with dual output) will be released and available for sale by the end of 2024. Sales are subject to all applicable U.S. export license restrictions and regulations. Additional information can be obtained by contacting a local VPT distributor. For more information, see the [VSC100-2800S DC-DC Converter page](#).



(a)

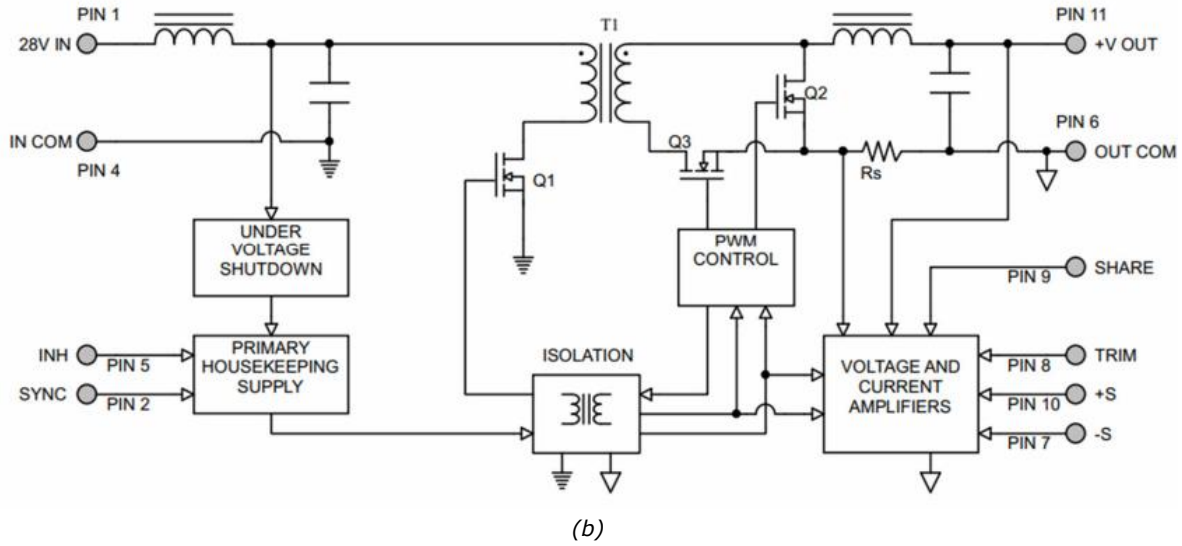


Figure. A photo (a) of one of the VSC100-2800S dc-dc converters and a simplified block diagram for the converter series (b). Guaranteed to 30 MeV/mg/cm<sup>2</sup> for SEE and to 30 krad(Si) for TID, the VSC100-2800S dc-dc converters are designed for use in smaller satellites in low earth orbit and NASA Class D missions where the balance of cost and guaranteed performance is critical. Performance is guaranteed through the use of radiation lot acceptance tested (RLAT) components.