Switching buck regulators intended for automotive entertainment and infotainment applications

ON Semiconductor has introduced a new series of switching buck regulators for space-constrained, electromagnetic compatibility (EMC) sensitive automotive entertainment and infotainment applications. These highly integrated devices offer industry leading conversion ratios for battery connected switch-mode power supplies.

The NCV890100, NCV890101, NCV890130, NCV890131, NCV890200, NCV890201 and NCV890231 each incorporate an internal power switch and operate at 2 megahertz (MHz). The 2 MHz switching frequency allows the use of smaller, less costly inductors and capacitors for both the input and output filters. The switching frequency of the NCV890101, NCV890131, NCV890201 and NCV890231 devices can also be synchronized to an external clock source.

“These switching regulators are highly optimized for use in modern automotive information and entertainment applications,” said Jim Alvernaz, ON Semiconductor director of automotive products. The combination of the high switching frequency and an internal N-channel power switch enables the design of highly compact automotive power systems.”

While competitive devices are capable of converting 16 volt (V) down to 3.3 V, the devices in this new series from ON Semiconductor have the capacity to convert an 18 V input to outputs as low as 3.3 V and a 16 V input to outputs as low as 2.5 V, while maintaining a constant switching frequency of 2 MHz. These devices can operate over a voltage range from 4.5 V up to 36 V, and can tolerate load dump voltages up to 40 V (45 V for 890x3x versions), making them very well suited to

harsh automotive start-stop and cold-crank conditions. The NCV890100, NCV890101, NCV890130 and NCV890131 deliver 1.2 amperes (A) of peak output current, while the NCV890200, NCV890201 and NCV890231 deliver a peak output current of 2 A.

Packaging and pricing
The NCV890100, NCV890101, NCV890200, NCV890130, NCV890131, NCV890231 and NCV890201 are all AEC Q100 qualified and Production Part Approval Process (PPAP) capable. The devices are offered in Pb-free, RoHS-compliant DFN-8, DFN-10 and SOIC−8 packages, and are priced at $1.13 to $1.50 per unit in 2500 unit quantities.

For more information, visit http://www.onsemi.com [1].

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[1] http://www.onsemi.com