

Product Overview

NCP81142: VR Multi-Phase Controller

For complete documentation, see the [data sheet](#)

The NCP81142 Multi-Phase buck solution is optimized for Intel VR12.5 compatible CPUs with user configurable 4/3/2/1 phases. The controller combines true differential voltage sensing, differential inductor DCR current sensing, input voltage feed-forward, and adaptive voltage positioning to provide accurately regulated power for both Desktop and Notebook applications. The control system is based on Dual-Edge pulse-width modulation (PWM) combined with DCR current sensing providing the fastest initial response to dynamic load events at reduced system cost. It has the capability to shed to single phase during light load operation and can auto frequency scale in light load conditions while maintaining excellent transient performance.

High performance operational error amplifiers are provided to simplify compensation of the system. Patented Dynamic Reference Injection further simplifies loop compensation by eliminating the need to compromise between closed-loop transient response and Dynamic VID performance. Patented Total Current Summing provides highly accurate digital current monitoring.

Applications

- Industrial CPU based applications

End Products

- Infotainment, Mobile, Automation, Medical and Security

Part Electrical Specifications

Product	Compliance	Status	Topology	Phases	Control Mode	V _{CC} Min (V)	V _{CC} Max (V)	f _{sw} Typ (kHz)	t _{res} Typ (ns)	Package Type
NCP81142MNTXG	Pb-free Halide free	Active	Step-Down		Voltage Mode	4.75	5.25	590		QFN-32

For more information please contact your local sales support at www.onsemi.com

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