

## Product Overview

### NCP81143: VR Multi-Phase Controller

For complete documentation, see the data sheet.

The NCP81143 Multi-Phase buck solution is optimized for Intel VR12.5 compatible CPUs with user configurable 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.

The NCP81143 offers two internal MOSFET drivers with a single external PWM signal. 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	Pricing (\$/Unit)	Compliance	Status	Topology	Phases	Control Mode	V <sub>CC</sub> Min (V)	V <sub>CC</sub> Max (V)	f <sub>sw</sub> Typ (kHz)	Package Type
NCP81143MNTXG	0.6667	Pb-free Halide free non AEC-Q and PPAP	Active	Step-Down	1/2/3	Voltage Mode	4.75	5.25	1000	QFN-36

For more information please contact your local sales support at [www.onsemi.com](http://www.onsemi.com).

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