



## Product Overview

### NCP6131: IMVP7 1-, 2-, 3-Phase CPU Controller + 1-Phase GPU Controller

For complete documentation, see the data sheet

#### Product Description

NCP6151S/NCP6151SA/NCP6131S/NCP6131SA dual output four plus one phase buck solution is optimized for Intel VR12 compatible CPUs. 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 and reduced system cost. It also sheds to single phase during light load operation and can auto frequency scale in light load while maintaining excellent transient performance.

#### Features

- Meets Intel VR12/IMVP7 specifications
- Current mode dual-edge modulation for fastest initial response to transient loading
- Dual high performance operational error amplifier
- One digital soft start ramp for both rails

#### Applications

- Desktop and notebook processors

#### Part Electrical Specifications

| Product         | Compliance             | Status | Topology | Phases | Control Mode | V <sub>CC</sub> Min (V) | V <sub>CC</sub> Max (V) | f <sub>sw</sub> Typ (kHz) | t <sub>res</sub> Typ (ns) | Package Type |
|-----------------|------------------------|--------|----------|--------|--------------|-------------------------|-------------------------|---------------------------|---------------------------|--------------|
| NCP6131S52MNR2G | Pb-free<br>Halide free | Active |          |        |              |                         |                         |                           |                           | QFN-52       |

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