

## Features

- Three Integrated Voltage Regulators (IVR): 4A, 2A, & 4A
- No discrete inductors or capacitors required
- Industry's highest current density: 0.4A / mm<sup>2</sup>
- Programmable output voltage: 0.50V to 1.20V
- Output voltage set point accuracy:  $\pm 1.0\%$  over PVT
- Ultra-fast transient response with no output caps
- Programmable fast DVS: up to 6 mV/ns
- Programmable auto-phase shedding
- High efficiency and wide bandwidth
- Extensive fault protection, programming and warning: OVLO, UVLO, OVP, OCP, short-circuit
- Accurate current ( $\pm 10\%$ ), voltage ( $\pm 2\%$ ), and temperature reporting ( $\pm 4^\circ\text{C}$ )
- Adjustable, fast soft-start with low in-rush current
- Programmable power-up sequencing
- 28MHz I3C interface (compatible to I2C) to coordinate sequencing, telemetry and diagnostics with system and SoC

## Applications

- Server POL
- Optical transceiver SoCs & Modules
- Client/Enterprise/Data Center SSD & NAS
- Networking & Communication SoCs
- Artificial Intelligence (AI) Processors

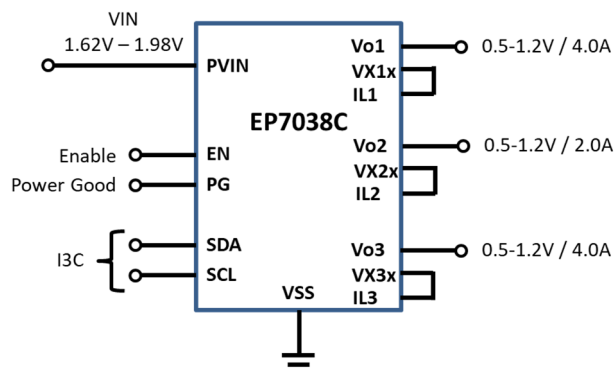
## Description

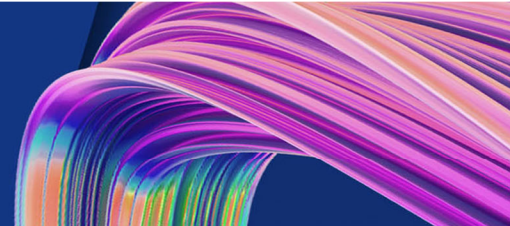
The EP7038 is a high-performance highly Integrated Voltage Regulator (IVR) with three outputs totaling 10A that enables the full integration of multiple voltage rails all in one IC, eliminating all external components. Operating from a 1.8V input supply, the EP7038 offers the industry best density, efficiency, transient performance and dynamic voltage scaling (DVS) from any system input voltage.

The three outputs are capable of 0.5V to 1.20V with 4A, 2A, and 4A respectively to provide flat efficiency curves and ultra-wide bandwidth. The EP7038 offers extensive independent programmability for each of its three outputs, requiring no external discrete components. Highly accurate telemetry, diagnostics, warnings and protection as well as operating parameters such as output voltage, soft-start time and sequencing, DVS ramp speed, and phase shedding are all programmable via the I3C interface. The EP7038 reduces PCB power management area and components by 10x or more, reduces system power loss by 10-50%, and reduces power routing complexity on the PCB.

Offered in a 5mm x 5mm x 0.75mm FcCSP package, the EP7038C is perfect for space constrained and thin profile applications. Die form is available.

## Typical Application





#### Data Sheet Notice & Legal Disclaimer

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