



# MP28210

## Ultra-Low 500nA I<sub>q</sub>, Wide Input 2V-5.5V, 1A Step-Down Regulator with 1.2x1.6mm CSP Package

**PRELIMINARY SPECIFICATIONS SUBJECT TO CHANGE**

### DESCRIPTION

The MP28210 is a monolithic power-management unit containing 1A, high-efficiency, step-down, switching converter. The nanoamp quiescent current provides extremely high efficiency when the load current is down in the  $\mu\text{A}$  range. With minimum input voltage as low as 2V, the MP28210 allows the system to operate directly from the battery.

The constant-on-time control scheme provides fast transient response, high light-load efficiency, and requires minimal capacitance. The regulation can be made tight by integrating an error amplifier to correct the output voltage.

The CTRL pins control the on/off and output voltage selection functions.

Fault protection features include under-voltage lockout (UVLO), over-current protection (OCP), and thermal shutdown.

The MP28210 requires a minimal number of readily available, standard, external components and is available in a small CSP-12 (1.2mmx1.6mm) package.

### FEATURES

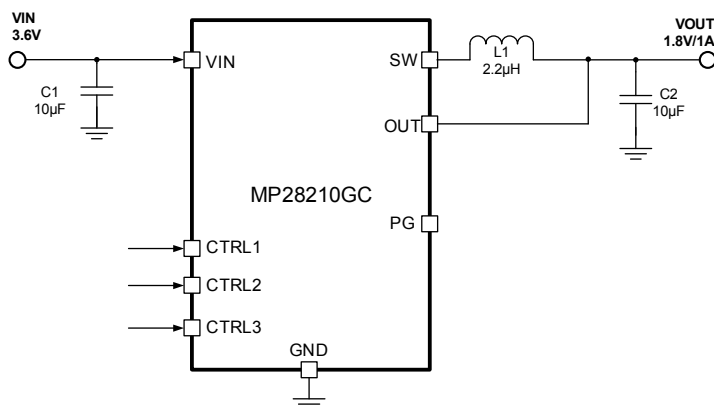
- Ultra-Low I<sub>q</sub>: 500nA
- Wide 2.0V to 5.5V Operating Input Range
- 7 Selectable Output Voltages
- Up to 1A Output Current
- 1.5MHz Switching Frequency in Continuous Conduction Mode (CCM)
- 100% Duty Cycle in Dropout
- 0.25 $\Omega$  and 0.25 $\Omega$  Internal Power MOSFET Switches
- Cycle-by-Cycle Over-Current Protection (OCP)
- Short-Circuit Protection (SCP) with Hiccup Mode
- Available in a CSP-12 (1.2mmx1.6mm) Package

### APPLICATIONS

- Wearables
- IOT
- Portable Instruments
- Battery-Powered Devices

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### TYPICAL APPLICATION



### Efficiency vs. Load Current

