

Brief Description

The ZSPM4141 is an ultra-low-power linear regulator optimized for minimal quiescent current losses via advanced, proprietary technology. It can improve energy efficiency and reduce heat due to power dissipation because it draws low nA-level quiescent current for light loads, yet it can regulate current loads as high as 200mA. The linear regulated output voltage is factory-configured to an option from 1.2V to 4.2V in 100mV steps. The ZSPM4141 also provides over-current protection.

Features

- Low operating voltage range: 2.5V to 5.5V
- Power-Down Mode for 100pA quiescent current
- Over-current protection: 250mA
- Output voltage options of 1.2V to 4.2V in 100mV steps (programmed at manufacturing)

Benefits

- Ultra-low 100pA quiescent current in power down mode
- Best-in-class quiescent current of 20nA at $I_{LOAD}=0$
- 0.5% DC line regulation (typical)
- Extends battery life
- Enables power harvesting applications
- High level of integration minimizes board space

Related IDT Smart Power Products

- ZSPM4121 Under-Voltage Load Switch for Smart Battery Management

Available Support

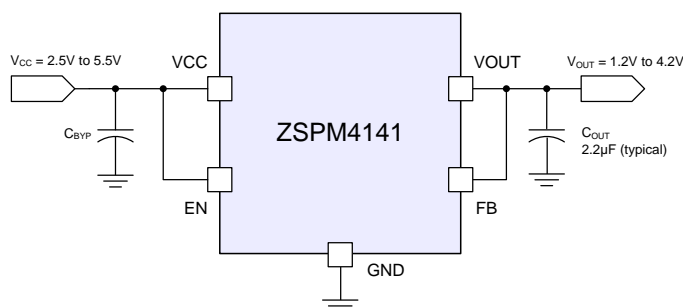
- ZSPM4141W12KIT Evaluation Kit
- Support Documentation

Physical Characteristics

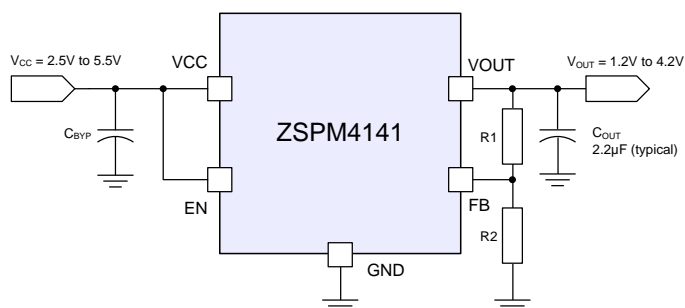
- Package: 8-pin DFN (2mm x2mm)

Typical ZSPM4141 Application Circuits

ZSPM4141 Basic (Fixed Output) Application



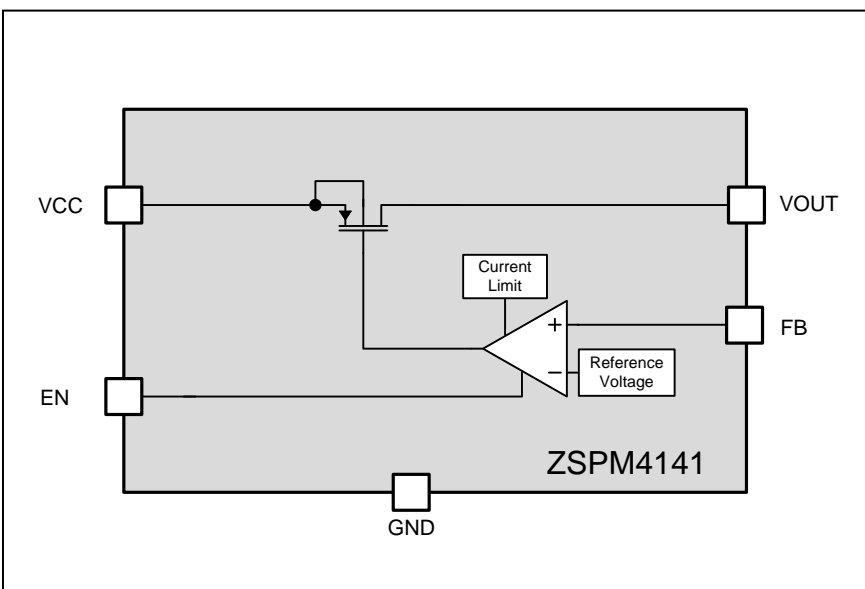
ZSPM4141A1W12 Variable VOUT via Resistor Divider



ZSPM4141 Block Diagram

Typical Applications

- Portable Electronics
- Industrial
- Medical
- Smart Cards
- RFID
- Energy-Harvesting Systems



Ordering Information

| Ordering Code* | Description | Package |
|----------------|-----------------------------------------------------------------------------|------------------|
| ZSPM4141AI1W12 | ZSPM4141 Ultra-Low Power Line Regulator — V_{OUT} factory set to 1.2V | 8-pin DFN / Reel |
| ZSPM4141AI1W18 | ZSPM4141 Ultra-Low Power Line Regulator — V_{OUT} factory set to 1.8V | 8-pin DFN / Reel |
| ZSPM4141AI1W25 | ZSPM4141 Ultra-Low Power Line Regulator — V_{OUT} factory set to 2.5V | 8-pin DFN / Reel |
| ZSPM4141AI1W30 | ZSPM4141 Ultra-Low Power Line Regulator — V_{OUT} factory set to 3.0V | 8-pin DFN / Reel |
| ZSPM4141AI1W31 | ZSPM4141 Ultra-Low Power Line Regulator — V_{OUT} factory set to 3.1V | 8-pin DFN / Reel |
| ZSPM4141AI1W33 | ZSPM4141 Ultra-Low Power Line Regulator — V_{OUT} factory set to 3.3V | 8-pin DFN / Reel |
| ZSPM4141AI1W42 | ZSPM4141 Ultra-Low Power Line Regulator — V_{OUT} factory set to 4.2V | 8-pin DFN / Reel |
| ZSPM4141W12KIT | ZSPM4141 Evaluation Kit w/ V_{out} adjusting resistors (default 1.2 Vout) | |

* W for 7" reel with 2500 parts. Custom V_{OUT} values are also available: 1.2V to 4.2V (typical) in 100mV increments.

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