

**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**

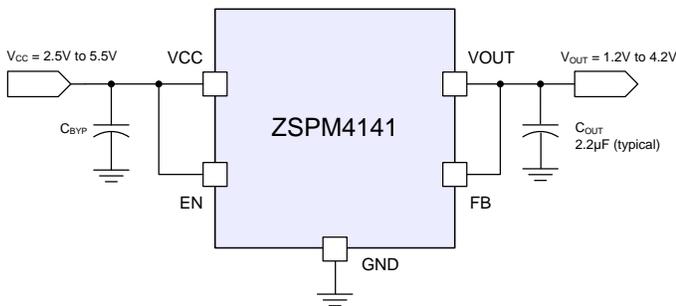
- ZSPM4141W12KIT Evaluation Kit
- Support Documentation

**Physical Characteristics**

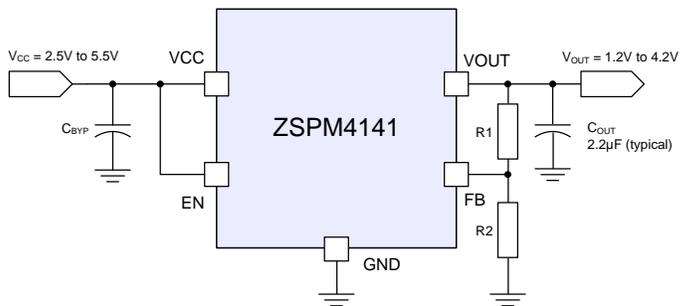
- Package: 8-pin DFN (2mm x2mm)

**Typical ZSPM4141 Application Circuits**

**ZSPM4141 Basic (Fixed Output) Application**

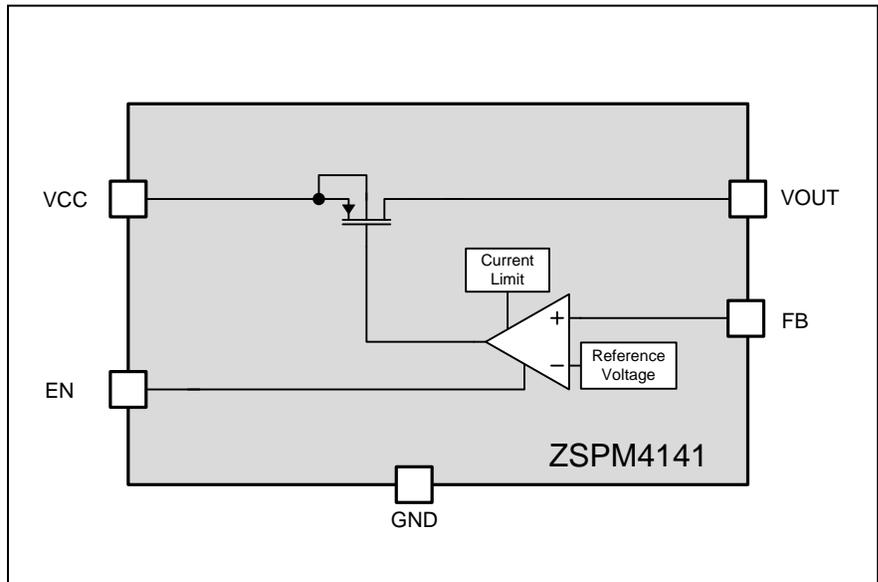


**ZSPM4141A1W12 Variable VOUT via Resistor Divider**



**ZSPM4141 Block Diagram**

- Typical Applications**
- Portable Electronics
  - Industrial
  - Medical
  - Smart Cards
  - RFID
  - Energy-Harvesting Systems



**Ordering Information**

Ordering Code*	Description	Package
ZSPM4141A1W12	ZSPM4141 Ultra-Low Power Line Regulator —V <sub>OUT</sub> factory set to 1.2V	8-pin DFN / Reel
ZSPM4141A1W18	ZSPM4141 Ultra-Low Power Line Regulator —V <sub>OUT</sub> factory set to 1.8V	8-pin DFN / Reel
ZSPM4141A1W25	ZSPM4141 Ultra-Low Power Line Regulator —V <sub>OUT</sub> factory set to 2.5V	8-pin DFN / Reel
ZSPM4141A1W30	ZSPM4141 Ultra-Low Power Line Regulator —V <sub>OUT</sub> factory set to 3.0V	8-pin DFN / Reel
ZSPM4141A1W31	ZSPM4141 Ultra-Low Power Line Regulator —V <sub>OUT</sub> factory set to 3.1V	8-pin DFN / Reel
ZSPM4141A1W33	ZSPM4141 Ultra-Low Power Line Regulator —V <sub>OUT</sub> factory set to 3.3V	8-pin DFN / Reel
ZSPM4141A1W42	ZSPM4141 Ultra-Low Power Line Regulator —V <sub>OUT</sub> factory set to 4.2V	8-pin DFN / Reel
ZSPM4141W12KIT	ZSPM4141 Evaluation Kit w/V <sub>out</sub> adjusting resistors (default 1.2 V <sub>out</sub> )	

\* W for 7" reel with 2500 parts. Custom V<sub>OUT</sub> values are also available: 1.2V to 4.2V (typical) in 100mV increments.

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