SteVAL-1PS01EJR

Evaluation board based on the ST1PS01EJR 400 mA nano-quiescent synchronous step-down converter

Features
- 500 nA input quiescent current at $V_{IN}=3.6$ V (not switching)
- 94% typical efficiency at 1 mA load ($V_{IN}=3.6$ V, $V_{OUT}=3.3$ V)
- 100% duty cycle
- 1.8 V to 5.5 V input operating range
- Undervoltage lockout: 1.57 V ($V_{IN}$ falling, typ.)
- Up to 400 mA output current capability
- Low power control operation for the best efficiency
- Embedded soft-start circuit
- Tiny external components: $L=2.2$ µH typ.
- Selectable output voltages: 1.8 V to 3.3 V
- Output voltage Power Good
- ±1.5% output voltage accuracy ($V_{OUT}$, $T_A=25$ °C)
- Dynamic output voltage selection (D0, D1)
- Available in flip-chip package
- Suitable for the following applications:
  - Wearable applications
  - Personal tracking monitors
  - Smart watches, sport bands
  - Energy harvesting, wireless sensors
  - Wearable and fitness accessories
  - Industrial sensors, portable low power devices
  - Single cell Li-Ion battery applications
  - Bluetooth® low energy
  - Zigbee
- Hardware is WEEE and RoHS compliant

Description
The STEVAL-1PS01EJR evaluation board features the ST1PS01 is a nano-quiescent miniaturized synchronous step-down converter that is designed for applications where high efficiency, PCB size and thickness are the key factors.

The converter can provide up to 400 mA output current with an input voltage ranging from 1.8 V to 5.5 V. The output voltage can be dynamically adjusted from 1.8 V to 3.3 V using two digital control inputs.

Thanks to the enhanced peak current control (PCC), the ST1PS01 can achieve very high efficiency conversion using only a 2.2 µH inductor and two small capacitors. The advanced design circuitry used minimizes the quiescent current.
1 Block diagram

Figure 2. STEVAL-1PS01EJR block diagram
Figure 3. STEVAL-1PS01EJR schematic
## Revision history

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<tr>
<td>21-Dec-2018</td>
<td>1</td>
<td>Initial release.</td>
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