

PRODUCT SUMMARY

SKY87000-13: Step-Down Regulator with Auto-Bypass LDO for Multi-Band/Mode RF Power Amplifiers

Applications

- Multi-mode RF PAs
- Smartphones, mobile phones, cellular phones
- Wireless USB data cards
- Portable media devices

Features

- Input voltage range: 2.7 to 5.5 V
- Dynamic output voltage: 0.4 V to 4.25 V
 - 0.16 V to 1.7 V reference input range
 - 2.5 times the reference input voltage to regulator output gain
- Internally compensated current/mode architecture:
 - 2 MHz switching frequency
 - 2.2 μ H chip inductor
 - Two 4.7 μ F output capacitors
 - Wide duty cycle range (100% duty cycle operation)
- Integrated 85 m Ω (typical) bypass regulator
- Less than 10 μ s response for 1 V output step
- Up to 2 A typical output current
- Small 9-bump WLCSP package (MSL1, 260 °C per JEDEC J-STD-020) package



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Description

The SKY87000-13 dynamically controls the operating voltage of a multi-mode WCDMA or GSM/EDGE Power Amplifier (PA) solution. The SKY87000-13 outputs a voltage between 0.40 V and 4.25 V, giving optimum efficiency for all operating states.

The output voltage of the device is controlled by an analog signal from the baseband processor. The SKY87000-13 can support up to 2 A of total load current with step-down and bypass regulators. The 2 MHz switching frequency is optimized for a typical 2.2 μ H inductor and reduced output capacitance.

To further improve system performance, an 85 m Ω bypass linear regulator is included that allows the PA to be powered directly from the battery. The bypass regulator output voltage is offset from the step-down regulator, which improves extreme load transient and dynamic output transition performance.

The SKY87000-13 is available in a 9-bump Wafer Level Chip Scale Package (WLCSP) with 0.5 mm pin pitch. A typical application schematic diagram is shown in Figure 1.

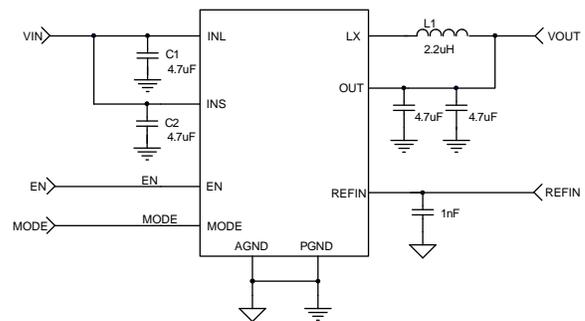


Figure 1. SKY87000-13 Typical Application Schematic

Ordering Information

Model Name	Manufacturing Part Number	Evaluation Board Part Number
SKY87000-13 Step-Down Regulator with Auto-Bypass LDO	SKY87000-13-001	SKY87000-13-001-EVB

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