PRELIMINARY PRODUCT SUMMARY

SKY77328: iPAC™ PAM for Quad-Band GSM / GPRS

Applications

- Quad-band cellular handsets encompassing
  - Class 4 GSM850/900
  - Class 1 DCS1800 PCS1900
  - Class 12 GPRS multi-slot operation

Features

- Low input power range
  - 0 to 6 dBm
- High efficiency
  - GSM850 56%
  - GSM900 56%
  - DCS 54%
  - PCS 53%
- BiCMOS PA controller and interface IC
  - Low power control slope
  - Fast response time
  - Improved control accuracy
- Integrated closed loop power amplifier control
- Internal Icc sense resistor for PAC
- Input/Output matching 50 Ω internal (with DC blocking)
- 20-pin package
- Small outline
  - 6 mm x 6 mm
- Low profile
  - 1.2 mm maximum
- Gold plated, lead-free contacts
- MSL3/250 °C

Description

The SKY77328 Power Amplifier Module (PAM) is designed in a low profile (1.2 mm), compact form factor for quad-band cellular handsets comprising GSM850/900, DCS1800, and PCS1900 operation. The PAM also supports Class 12 General Packet Radio Service (GPRS) multi-slot operation.

The module consists of separate GSM850/900 PA and DCS1800/PCS1900 PA blocks, impedance-matching circuitry for 50 Ω input and output impedances, and a Power Amplifier Control (PAC) block with an internal current-sense resistor. The custom BiCMOS integrated circuit provides the internal PAC function and interface circuitry. Fabricated onto a single Gallium Arsenide (GaAs) die, one Heterojunction Bipolar Transistor (HBT) PA block supports the GSM850/900 bands and the other supports the DCS1800 and PCS1900 bands. Both PA blocks share common power supply pins to distribute current. The GaAs die, the Silicon (Si) die, and the passive components are mounted on a multi-layer laminate substrate. The assembly is encapsulated with plastic overmold.

RF input and output ports of the SKY77328 are internally matched to a 50 Ω load to reduce the number of external components for a quad-band design. Extremely low leakage current (2.5 μA, typical) of the dual PA module maximizes handset standby time. The SKY77328 also contains band-select switching circuitry to select GSM (logic 0) or DCS/PCS (logic 1) as determined from the Band Select (BS) signal. In Figure 1 below, the BS pin selects the PA output (DCS/PCS OUT or GSM850/900 OUT) and the Analog Power Control (VAPC) controls the level of output power.

The VBATT pin connects to an internal current-sense resistor and interfaces to an integrated power amplifier control (iPAC™) function, which is insensitive to variations in temperature, power supply, process, and input power. The ENABLE input allows initial turn-on of PAM circuitry to minimize battery drain.

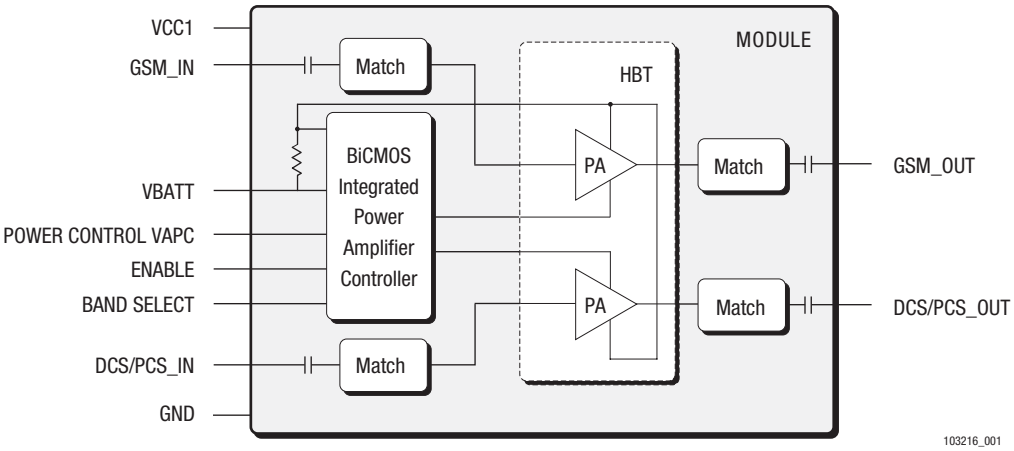

Figure 1. Functional Block Diagram

NEW

Skyworks offers lead (Pb)-free "environmentally friendly" packaging that is RoHS compliant (European Parliament for the Restriction of Hazardous Substances).