

# AJAV-6751

## WCDMA/HSPA Band 1 and Band 5 3.0 mm × 4.2 mm Dual-Band Power Amplifier Module

### Product Brief

#### Description

The AJAV-6751 is a complete, high-performance power amplifier for WCDMA and HSPA wireless communications. Based on a unique, patented architecture, the AJAV-6751 integrates circuitry for TX filtering, RF coupling, power regulation, input and output matching, and power control. The PA (power amplifier) is powered by a connection to the battery and is implemented in a standard CMOS process.

The AJAV-6751 contains integrated directional couplers, 50-ohm input and output matching networks, and RF input and output DC blocking capacitors. All of these functions are integrated in a 15-pin surface-mount leadless package of 3 mm × 4.2 mm form-factor and 0.9-mm thickness, so it can minimize the number of external components.

The integrated LB and HB directional couplers are daisy-chained internally. One coupler input port and one coupler output port are shared by the both bands.

The AJAV-6751 has integrated on-chip Vref and on-module bias switch, so the external LDO regulators and switches for external Vref are not required. It also makes the PA fully digital-controllable by the baseband chipset. The Ven pin turns the PA on and off by the digital control signal. All of the digital control input pins, such as the Ven, Vmode0, and Vmode1, are fully CMOS compatible down to the 1.8V logic.

#### Features

- Thin package (0.9 mm typical)
- Fifteen-pin surface mounting package
- Small 3 mm × 4.2 mm package size
- Internal 50-ohm matching networks for both RF input and output
- Three-mode power control with Vmode0 and Vmode1
- Compatible with the APT application
- Low average current
- High capacity CMOS process
- High-performance 3G power amplifier
  - UMTS Band 1 (1920 MHz ~ 1980 MHz)
  - UMTS Band 5 (824 MHz ~ 849 MHz)
  - WCDMA, HSPA, and HSPA+ compliant
- Integrated Tx filtering
  - Delivers the best noise in the industry
- Integrated coupler
  - Coupler and Isolation ports for daisy chain
- Green – Lead-free and RoHS compliant

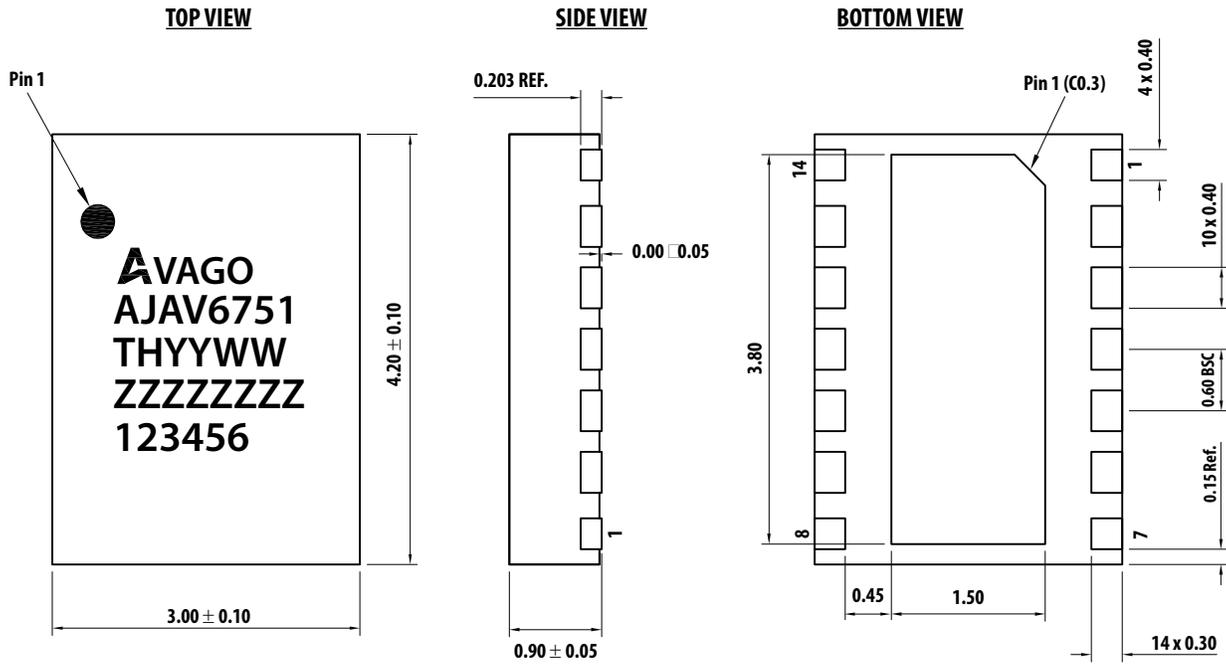
#### Applications

- Band 1 UMTS
- Band 5 UMTS

#### Ordering Information

| Part Number   | Number of Devices | Container                |
|---------------|-------------------|--------------------------|
| AJAV-6751-TR1 | 1,000             | 178 mm (7 in.) tape/reel |

## Marking Specification and Package Dimensions



**AJAV6751 = Device Code**  
**T = Country Code**  
**H = Manufacturing Site Code**  
**YY = Year**  
**WW = Work Week**  
**ZZZZZZZ = Assembly lot #**  
**123456 = International Marking Identification**

**Tolerances:**  
**.x ± .1**  
**.xx ± .05**

**Dimensions are in mm**

## Pin Description

| Pin # | Name  | Description       |
|-------|-------|-------------------|
| 1     | LB_EN | Low Band Enable   |
| 2     | LB_In | Low Band Input    |
| 3     | VBAT  | DC Supply Voltage |
| 4     | HB_In | Low Band Input    |
| 5     | VM1   | Mode Control      |
| 6     | VM0   | Mode Control      |
| 7     | HB_EN | High Band Enable  |
| 8     | CPLO  | Coupler Output    |

| Pin # | Name   | Description       |
|-------|--------|-------------------|
| 9     | GND    | RF input          |
| 10    | CPLI   | Coupler input     |
| 11    | HB_OUT | High band output  |
| 12    | VCC    | DC supply voltage |
| 13    | GND    | Ground            |
| 14    | LB_OUT | Low band output   |
| 15    | GND    | Ground            |

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For product information and a complete list of distributors, please go to our web site:

[www.avagotech.com](http://www.avagotech.com)

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