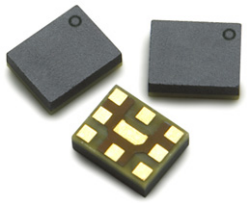
ACMD-6013

LTE Band 13 Duplexer with Public Safety Band Rejection

Product Brief



Description

The Avago ACMD-6013 is a highly miniaturized duplexer designed for use in LTE Band 13 (746 – 756 MHz DL, 777 – 787 MHz UL) handset applications. It is specially designed to reduce or eliminate the A-MPR power backoff normally required to meet NS-07 Public Safety Band (768-775 MHz) radiated emission limits.

Low Insertion Loss in the Tx channel minimizes current drain from the power amplifier, while low Rx channel Insertion Loss improves receiver sensitivity.

The ACMD-6013 enhances the sensitivity and dynamic range of handset receivers by providing high isolation of the transmitted signal from the receiver input and high rejection of transmit-generated noise in the receive band.

The Tx-Ant path of the ACMD-6013 provides at least 20 dB (24 dB Typ) rejection in the Public Safety Band. The duplexer utilizes Avago Technologies innovative temperature-compensated FBAR technology, dramatically reducing the guard frequency required to transition from pass-band to stop-band.

The ACMD-6013 is designed with Avago Technologies' innovative Film Bulk Acoustic Resonator (FBAR) technology, which makes possible ultra-small, high-Q filters at a fraction of their usual size. The excellent power handling capability of FBAR bulk-mode resonators supports the high output power levels used in mobile communications applications, while adding virtually no distortion.

The ACMD-6013 also utilizes Avago Technologies' advanced Microcap bonded-wafer, chip scale packaging technology. This process allows the filters to be assembled into a molded chip-on-board module with an overall size of only 2.0 x 2.5 mm and maximum height of 0.95 mm. The ACMD-6013 is compatible with standard 2.0 x 2.5 mm duplexer PCB footprints.

Applications

LTE Handsets or data terminals operating in the Band 13 frequency range.

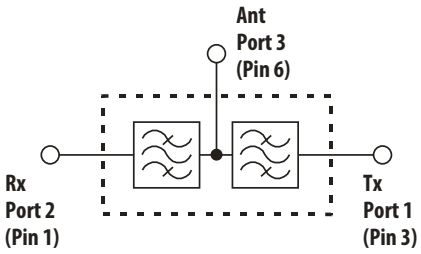
Features

- Miniature Size
  - 2.0 x 2.5 mm size
  - 0.95 mm Max Height
  - Standard 2 x 2.5 mm PCB footprint
- Temperature Compensated
- High Isolation
- High Power Rating
  - 33 dBm Abs Max Tx Power
- Environmental
  - RoHS Compliant
  - Halogen free
  - TBBPA Free

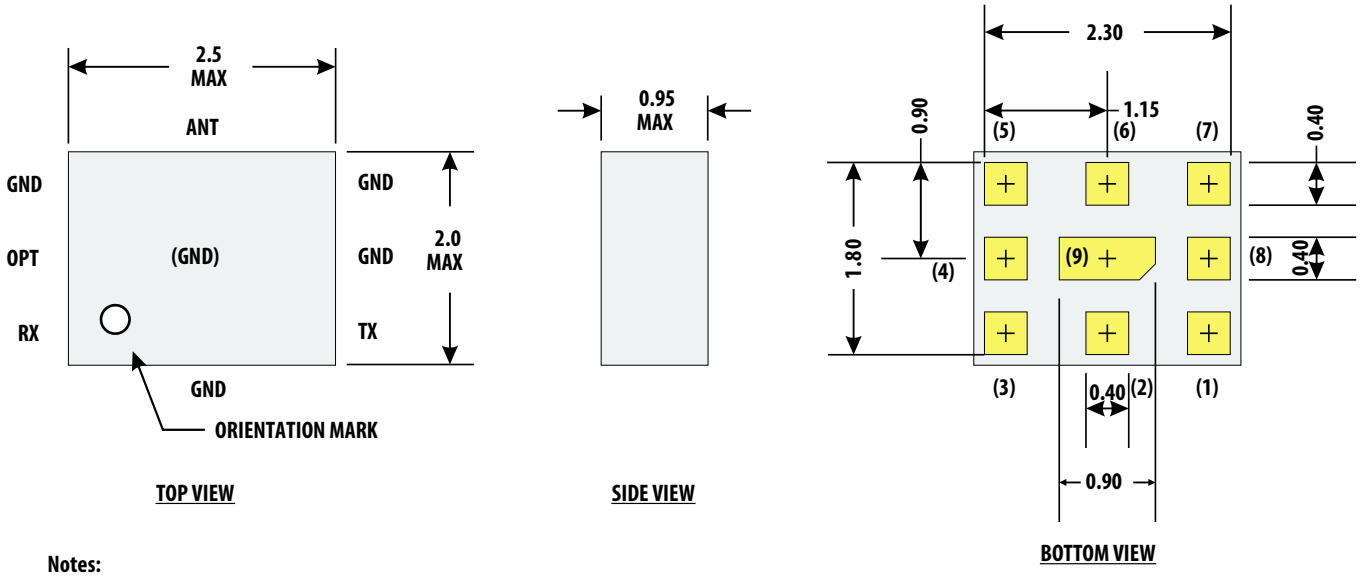
Specifications

- Rx Band Performance, 746 – 756 MHz, – 20 to +85°C
  - Insertion Loss: 2.7 dB Max
  - Rx Noise Blocking: 50 dB Min
- Tx Band Performance, 777.5 – 787 MHz, – 20 to +85°C
  - Insertion Loss: 3.5 dB Max
  - Tx Interferer Blocking: 53 dB Min
- Tx-Ant Path
  - Public Safety Band Rejection: 20 dB Min, 24 dB Typ.

Functional Block Diagram



Package Dimensions



Notes:

1. Dimensions in millimeters
   Tolerance: X.X ± 0.1 mm
   X.XX ± 0.05 mm
2. Dimensions nominal unless otherwise noted
3. Angles 45° nominal
4. I/O Pads (3 ea)
   Size: 0.40 X 0.40 mm
   Spacing to ground metal: 0.30 mm
5. Contact areas are gold plated

Pin Connections:

1	Rx (or Rx(+))
2, 4, 5, 7, 9	Gnd
3	Tx
6	Ant
8	Optional: Gnd, NC, or Rx(–)

Ordering Information

Part Number	No. of Devices	Container
ACMD-6013-BLK	100	Tape Strip or Anti-static Bag
ACMD-6013-TR1	3000	178 mm (7-inch) Reel

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

pub-005355 – January 7, 2016