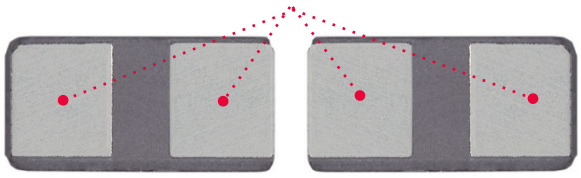
Wi-Fi-ready MID Chip and Ceramic SMT Antennas

molex®

Ultra thin ceramic and LDS-MID antennas enable fast and easy integration into Wi-Fi devices for maximum performance at minimal implementation cost

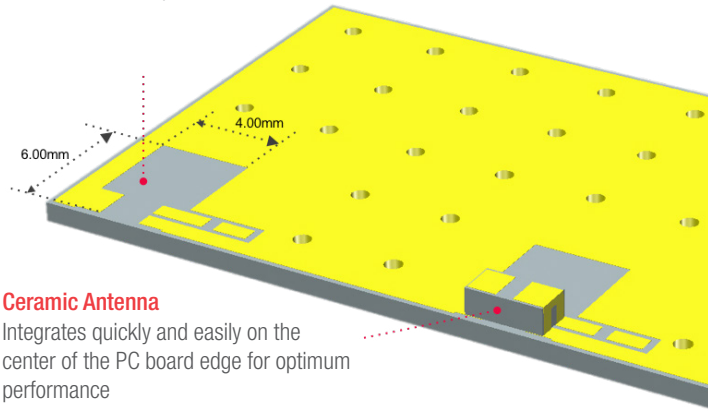
Features and Benefits

Symmetrical radiator design
Offers significant design flexibility by allowing reversed lateral placement on the PCB without affecting radiation pattern or performance



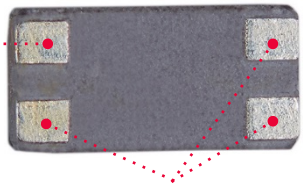
The 2.4/5GHz SMT Ceramic Antenna with its symmetrical design maintain the same radiation pattern even when rotated 180 degrees to the horizontal

Clearance Zone
Ensures little or no EMI interference from neighboring electronic components affecting antenna performance



Ceramic Antenna
Integrates quickly and easily on the center of the PC board edge for optimum performance

Feeding pad
Connects to the radio transceiver via a 50-Ohm transmission line on the PCB. Electrical signals from the transmission line are fed through this pad on the PCB

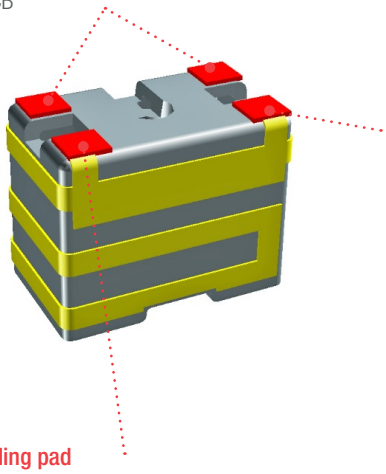


Grounding pad
Provides electrical grounding of antenna onto the application PCB

Reference PCB layout of the 2.4/5GHz SMT Ceramic Antenna (Refer to AS-203006-001 for more information)

(Dummy) Fixing pads
Firmly anchor antenna housing onto SMT pad of PCB

Underside view of the 2.4/5GHz SMT Ceramic Antenna showing Feeding and Ground Pads

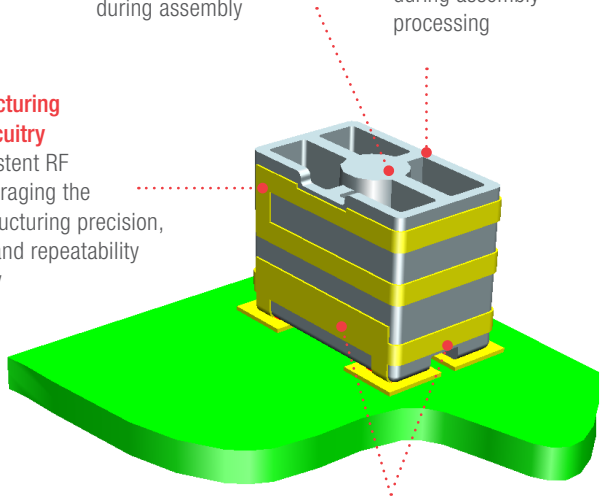


Grounding pad
Provides electrical grounding of antenna onto the application PCB

Halogen-free Molded Interconnect Device (MID) housing
Environmentally sustainable housing material withstands high reflow temperatures during assembly processing

Pick-and-place feature
Speeds up automated placement of antenna during assembly

Laser Direct Structuring (LDS)-formed circuitry
Yields high, consistent RF performance, leveraging the excellent laser structuring precision, speed, accuracy and repeatability of LDS technology



Feeding pad
Connects to the radio transceiver via a 50-Ohm transmission line on the PCB. Electrical signals from the transmission line are fed through this pad on the PCB

2.4/5 GHz SMT MID Chip Antenna (Series 146175)

Gold (Au) over Nickel (Ni) traces
Act as transducers that convert unguided electromagnetic waves to guided electromagnetic waves and vice versa

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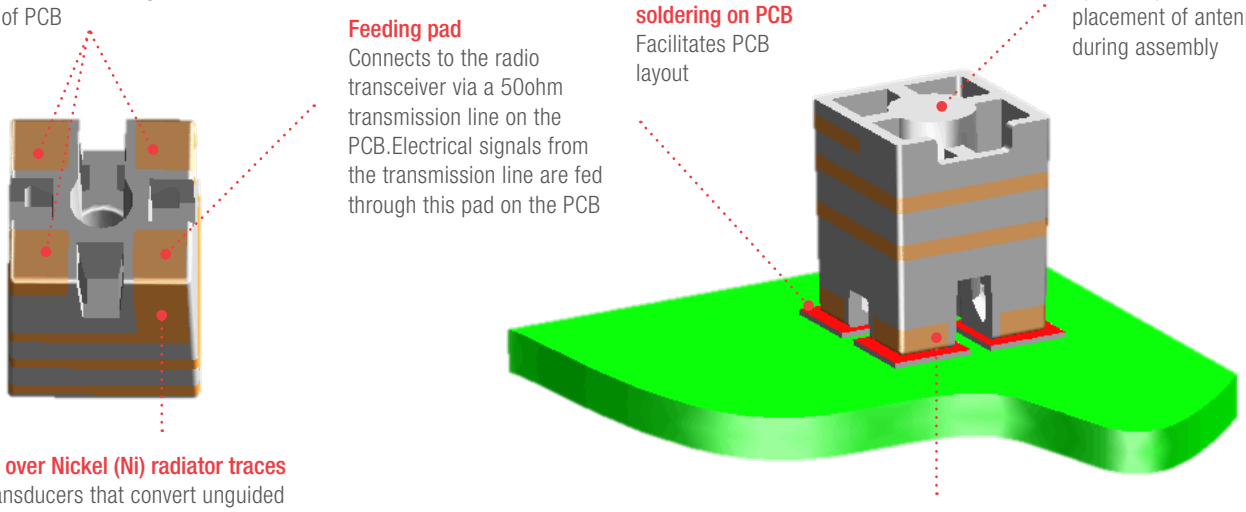
(Dummy) Fixing pads
Firmly anchors antenna housing onto SMT pad of PCB

Feeding pad
Connects to the radio transceiver via a 50ohm transmission line on the PCB.Electrical signals from the transmission line are fed through this pad on the PCB

Footprint for soldering on PCB
Facilitates PCB layout

Pick-and-place feature
Speeds up automated placement of antenna during assembly



Gold (Au) over Nickel (Ni) radiator traces
Act as transducers that convert unguided electromagnetic waves to guided electromagnetic waves and vice versa

Halogen-free Molded Interconnect Device (MID) housing
Environmentally sustainable housing material withstands high reflow temperatures during assembly processing

2.4GHz SMT MID Chip Antenna (Series 47948)

Applications

Connected Home
- Security and Surveillance
- Home Automation
- Home Streaming
- Entertainment
- Smart Appliances
- Energy and Utilities

Wireless Infrastructure
- Wireless Solutions

Telecommunications/Networking
- Infrastructure/Networking

Commercial Vehicles
- Networking

Specifications

REFERENCE INFORMATION
Packaging: Tape on reel
Reference Platform:100.00 by 40.00 by 1.00mm (47948, 146175); 40.00 by 20.00 by 1.00mm (203006)
Designed In: mm
RoHS: Yes
Halogen Free: Yes
Ground Clearance:
6.00 by 4.00mm (146175, 203006)
4.00 by 4.00mm (47948)
SMT Compatible: Yes

ELECTRICAL
RF Power (Watt): 2
Return Loss - S11(dB): <-7 (47948); <-6 (146175); <-10 (203006)
Average Total Radiation Efficiency(%): Refer to Product Specifications
Peak Gain (dBi): Refer to Product Specifications
Input Impedance (ohms): 50

MECHANICAL
Refer to Product Specifications

PHYSICAL
Housing: LCP-LDS, Vectra E840ILDS, 40% mineral-filled LDS grade (47948, 146175); Ceramic (203006)
Flammability: UL 94V-0
Plating:
Operating Temperature: -40 to 125°C

Ordering Information

Series No.	Frequency Band (MHz)	Dimensions (mm)
203006	2400 to 2483.5 5150 to 5850	3.20(L) by 1.60(W) by 1.10(H)
146175		5.00(L) by 3.00(W) by 4.00 (H)
47948	2400 to 2483.5	3.00(L) by 3.00(W) by 4.00 (H)

www.molex.com/link/standard_antennas.html

Order No. 987650-5702 Rev. 3 APS/0k/GF/2017.08