2.4 and 2.4, 5 GHz Ceramic and MID Chip Antennas

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2.4 and 2.4, 5 GHz Ceramic and MID Chip Antennas offer outstanding performance, design flexibility and easy integration, making them ideal for various markets and applications

Features and Advantages

Product and Technical Differences														
Attribute	2.4, 5GHz Ceramic Chip Edge-Mount, Antenna (Series 211964)			2.4, 5GHz Ceramic Chip Corner-Mount, Antenna (Series 206774)			2.4, 5 GHz SMT MID Chip Antenna (Series 146175)		2.4,5GHz SMT Ceramic Antenna (Series 206514)		2.4 GHz SMT MID Chip Antenna (Series 47948)	2.4 GHz SMT Ceramic Antenna (Series 206513)
Size	3.20(L) by 1.60(W) by 1.20(H) mm			3.20 by 1.60 by 0.65mm			5.00(L) by 3.00(W) by 4.00(H) mm		4.00 by 3.00 by 4.00mm		3.00 by 3.00 by 4.00mm	3.00 by 3.00 by 4.00mm
PCB Keep-out	6.00(L) by 4.00(W)mm			5.90 by 5.85mm			6.00(L) by 4.00(W)mm		6.60 by 4.70mm		4.00 by 4.00mm	4.00 by 4.00mm
Material	Ceramic			Ceramic			MID-LDS		Ceramic		MID-LDS	Ceramic
Antenna Type	Loop			LTCC			Loop		Loop		Monopole	Monopole
Frequency Range	*2.4 to 2.5 GHz	**2.4 to 2.5 GHz	**5.15 to 5.85 GHz	*2.4 to 2.5 GHz	**2.4 to 2.5GHz	**5.15 to 5.85 GHz	2.4 GHz	5 GHz	2.4 GHz	5 GHz	2.4 to 2.5 GHz	2.4 GHz
Return Loss	<-6 dB	<-5 dB	<-5 dB	<-10dB	<-7dB	<-10dB	<-6 dB		<-8 dB	<-5 dB	<-7 dB	<-6 dB
Peak Gain	2.7dBi	2.1dBi	2.2dBi	1.9dBi	1.7dBi	1.8dBi	3 dBi	4.2 dBi	3.5 dBi	6.2 dBi	3.3 dBi	3.0 dBi
Total Efficiency	>80%	>70%	>65%	>60%			70% for both 2.4 and 5 GHz		>75%		>70%	>55%
Polarization	Linear			Linear			Linear		Linear		Linear	Linear
Operating Temperature	-40 to +85°C			-40 to +85°C			-40 to +125°C		-40 to +85°C		-40 to +125°C	-40 to +125°C
Key Advantages	Single band and dual band. High operating efficiency			Miniature in size but big in RF performance			Small clearance zone; high RF performance; dual-band; halogen-free		Miniature in size and low in cost		Miniature in size but big in RF performance	Miniature and identical in size with series 47948
	Symmetrical radiator design offers significant design flexibility by allowing reversed lateral placement on the PCB without affecting radiation pattern or performance			Small size, low cost, corner mount			Laser Direct Structuring (LDS)-formed circuitry yields high, consistent RF performance, leveraging the excellent laser structuring precision, speed, accuracy and repeatability of LDS technology		Cost-economical		Environmentally sustainable halogen-free LDS-MID housing withstands high reflow temperatures during assembly processing	Cost-economical
												

* Config. 1, single band ** Config. 2, dual band

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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 and Reel
Designed In: Millimeters
RoHS: Yes
Halogen Free: Yes
Glow Wire Compliant: No

ELECTRICAL
RF Power (Watt): 2
Return Loss: Refer to Product Specifications
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
Material: Ceramic
(206513, 211964, 206514, 206774)
LCP-LDS (146175, 147948)
Plating:
Silver (Ag) (206513, 211964, 206514, 206774)
Copper (Cu), Nickel (Ni), Gold (Au) (146175, 47948)
Operating Temperature: -40 to +125°C
-40 to +85°C (211964, 206514, 206774)

Ordering Information

Series No.	Frequency Band (MHz)	Dimensions (mm)
206513	2.4 to 2.5	3.00(L) by 3.00(W) by 4.00(H)
47948		
206514	2.4 to 2.5 and 5.15 to 5.85	3.00(L) by 4.00(W) by 4..00(H)
146175		5.00(L) by 3.00(W) by 4.00(H)
211964		3.20(L) by 1.60(W) by 1.20(H)
206774		3.20 by 1.60 by 0.65mm

www.molex.com/link/antenna_iot.html

Order No. 987650-5702 Rev. 7 APS/0k/GF/2021.02