

RHCP* and Helix SMT GPS† Molded Interconnect Device (MID) Antennas

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Eliminating space and PCB real-estate constraints, LDS-MID GPS antennas combine ease of integration with reduced cost of implementation over a variety of wireless navigation device applications



(From left to right) RHCP (Series 146216) and Helix (Series 146235) SMT GPS LDS-MID Antennas

Remark: The products shown above do not represent their actual or relative antenna sizes

Features and Benefits

Circular or elliptical polarization antennas	Overcome the effects of signal propagation anomalies and ground reflections specific to linearly polarized antennas
Highly compact SMT antennas	Embeds easily within device chassis while offering valuable PCB real estate, vertical space and cost-savings
Small clearance zone ("out-of-bound" area available for electronic component placement) of 5.00mm around antenna	Enables maximization of PCB real estate around the antenna
Application of Laser Direct Structuring (LDS) chip antenna technology in manufacturing	Ensures consistent antenna RF performance given the excellent laser structuring repeatability, precision and accuracy of LDS technology
High-temperature housing material	Withstands high reflow temperatures in standard SMT processes
RoHS compliant and halogen free	Meets RoHS regulatory and environmental sustainability standards



Automotive GPS System

Non-Automotive Transportation



Wearable Devices

Applications

Transportation (Automotive and non-Automotive)	Consumer
GPS	Wearable devices
Industrial	Kid safety tracking devices
Parcel tracking systems	

Specifications

Reference Information

Packaging: Tape on reel
 Reference Platform: 100.00 by 100.00 by 1.00mm (146216); 100.00 by 50.00 by 1.00mm (146235)
 Designed In: Millimeters
 RoHS: Yes
 Halogen Free: Yes
 SMT Compatible: Yes

Electrical

RF Power (Watt): 2
 Return Loss - S11(dB): < -10
 Average Total Radiation Efficiency (%): >57 (146216); 55 (146235)
 Peak Gain (dBi): 1.0 (146216); 1.4 (146235)
 Polarization: RHCP (146216); Elliptic (146235)
 Input Impedance (ohms): 50

Mechanical

Peeling Force (min.): 8N

Physical

Housing: LCP-LDS, Vectra E840ILDS, 40% mineral-filled LDS grade
 Flammability: UL 94V-0
 Plating: Hatched Area — 0.05µm Gold (Au) min.
 MID Plane — 1.0~2.5µm Nickel (Ni)
 Under-plating — 12~16µm Copper (Cu)
 Operating Temperature: -40 to +125°C

*RHCP – An industry acronym for "Right Hand Circularly Polarized".

†GPS - Global Positioning System. Civilian GPS uses the L1 frequency of 1575.42 MHz in the Ultra High Frequency (UHF) band spanning 300MHz to 3GHz

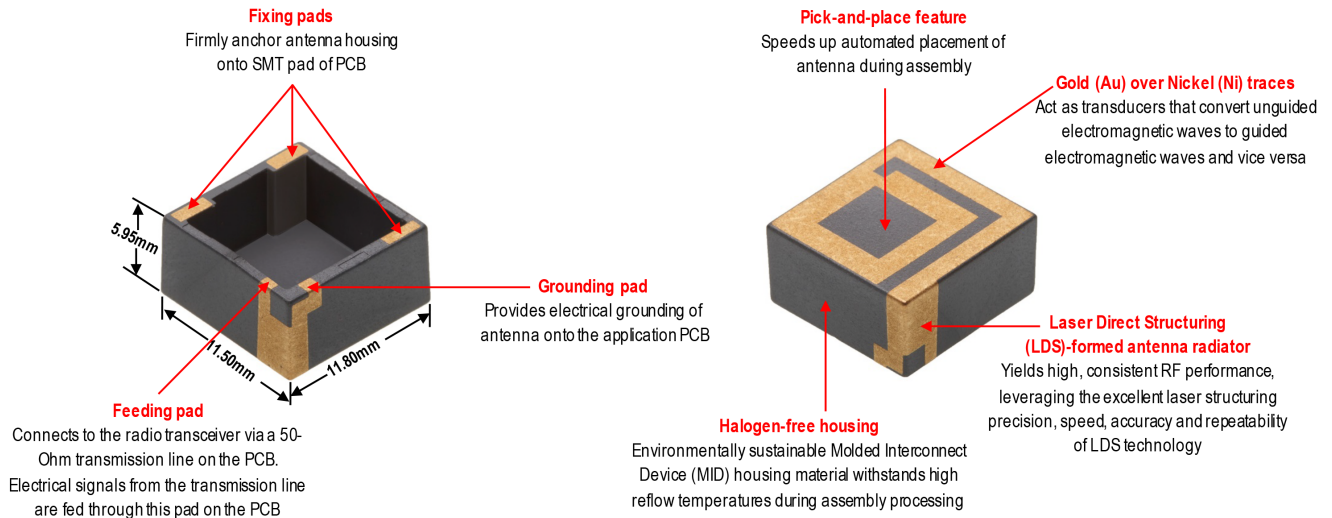
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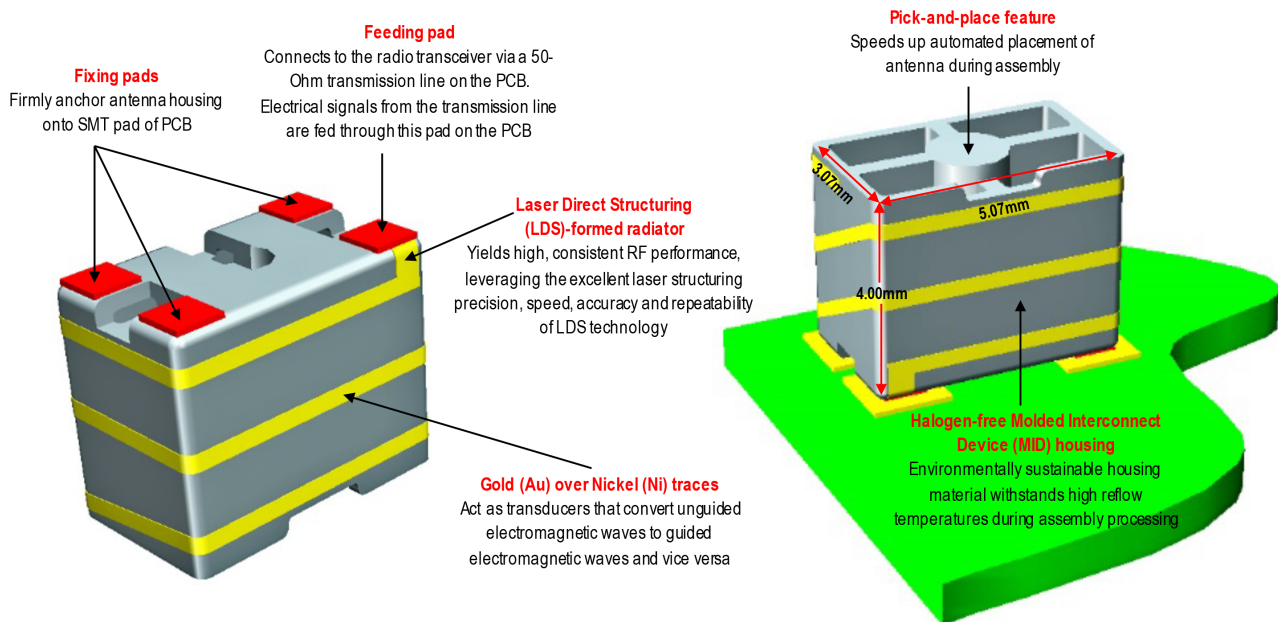
Ordering Information

Series No.	Frequency Band (MHz)	Dimensions (mm)
146235	1575 +/-3	5.00(L) by 3.00(W) by 4.00(H)
146216		11.80(L) by 11.50(W) by 5.95(H)

Product Features



RHCP SMT GPS LDS-MID Antenna (Series 146216)



Helix SMT GPS LDS-MID Antenna (Series 146235)

www.molex.com/link/standard_antennas.html