

LTCC Multi Layer Ceramic Diplexer- 3216 (1206) size

- **AMANT3216120A5T**

FEATURES

1. Surface Mounted Devices with a small dimension of 3.2 X 1.6 X1.2 mm³ meet future miniaturization trend.
2. LTCC process
3. High stability in Temperature / Humidity Change
4. Automotive, Qualified to AEC-Q200



APPLICATIONS

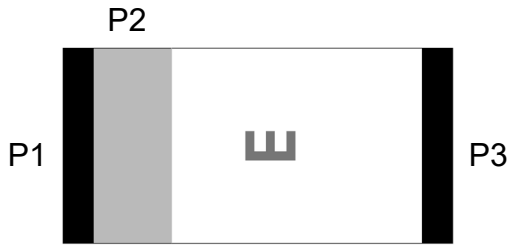
1. 2400 ~ 2500 MHz Working Frequency
2. Bluetooth, Wireless, HomeRF

Recommended Link Parts

Product Category	Walsin PN	Remark
capacitor	RTxxN	high Q MLCC for fine tune matching (automotive version)
chip antenna	AMANT2012090A0T	2.0 x 1.25mm, automotive version
chip antenna	AMANT5220110A0T	5.2 x 2.0mm, automotive version

CONSTRUCTION

Top view



PIN	Connection
1	Feeding
2	Identification Mark
3	Soldering terminal

DIMENSIONS

Figure	Symbol	Dimension (mm)
<p>The figure shows two views of the component. The left view is a front view showing a vertical rectangle with a total height labeled 'L'. It has a top black layer of thickness 'A', a middle grey layer of thickness 'A', and a bottom black layer of thickness 'A'. The width of the top black layer is labeled 'W'. The right view is a side view showing a vertical rectangle with a total width labeled 'T'.</p>	L	3.20 ± 0.20
	W	1.60 ± 0.10
	T	1.20 ± 0.10
	A	0.25 ± 0.15

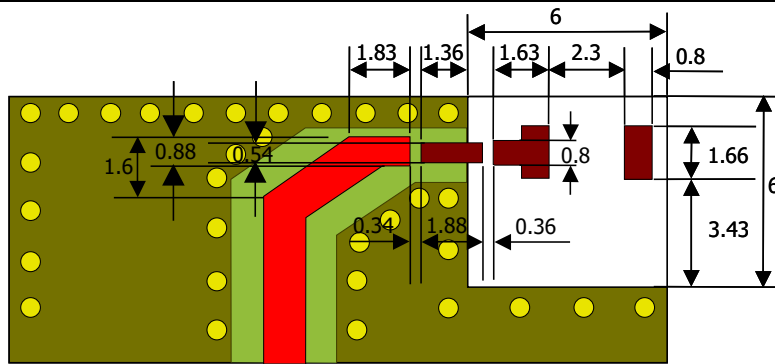
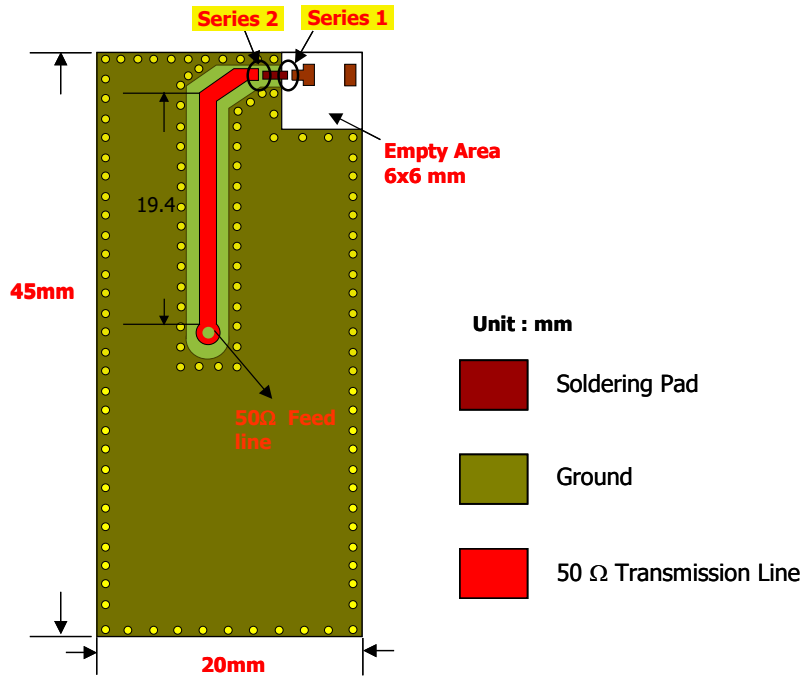
ELECTRICAL CHARACTERISTICS

AMANT3216120A5T		Specification
Working Frequency Range		2400 ~ 2500 MHz
Fc (GHz)		2.9
Gain (dBi)		2 (Typical)
VSWR		2 max.
Matching component value	Series 1	6.8nH
	Series 2	-
Power Capacity		3 W max.
Maximum Input Power		5 Watts for 5 minutes
Polarization		Linear
Azimuth Beamwidth		Omni-directional
Moisture sensitivity levels		MSL is LEVEL 1 (Refer to : IPC/JEDEC J-STD-020)
HBM ESD		Pass 1KV on all pins (Base on AEC-Q200-002)
MM ESD		Pass 200V (Base on EIA/JESD22-A115)
Operating & Storage Condition (Component)		
Operation Temperature Range: -55°C ~ +125°C		
Storage Temperature Range: -55°C ~ +125°C		
Storage Condition before Soldering (Included packaging material)		
Storage Temperature Range: +5 ~ +40°C		
Humidity: 30 to 70% relative humidity		

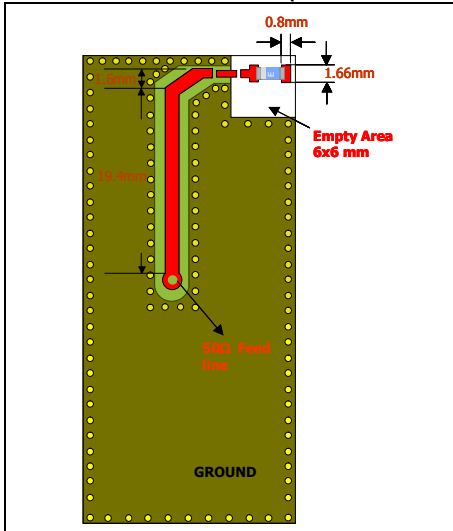
* This frequency must be adjusted to 2.45GHz with matching circuit.

SOLDER LAND PATTERN DESIGN

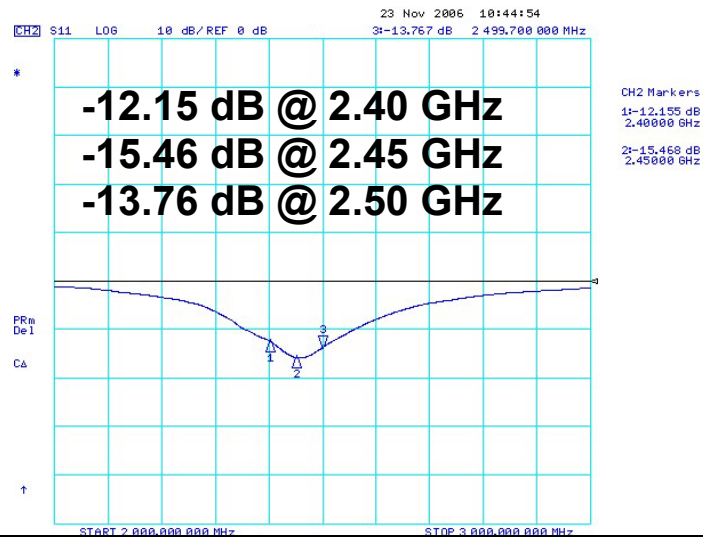
Figure



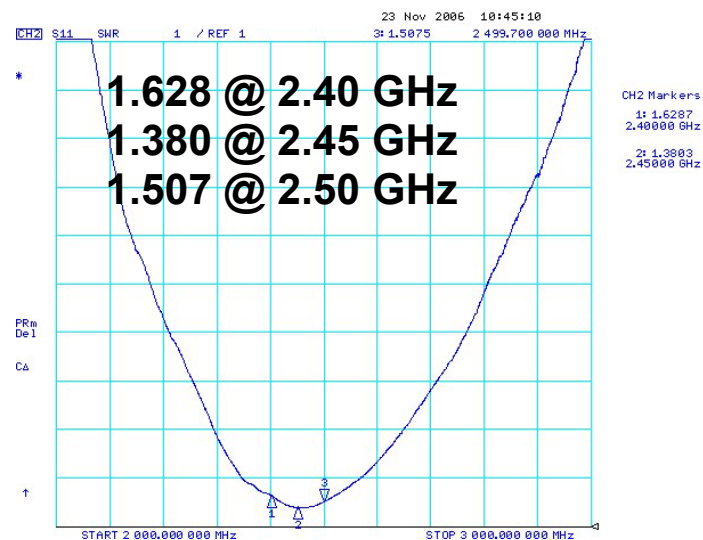
Antenna on Test Board (Thickness 1.2mm)



Antenna S11 on Test Board

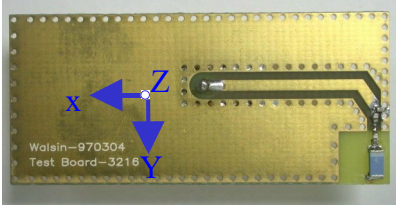


Antenna VSWR on Test Board



RADIATION PATTERN

Radiation Pattern and Gain were dependent on measurement board design. The specification of AMANT3216120A5T antenna was measured based on the PCB size and installation position as shown in the below figure Test Board



	Vertical	Horizontal
Y - Z Plane Average Gain= 0.948 dBi	<p>Peak Gain = 2.93dBi Average Gain = 0.60dBi</p>	<p>Peak Gain= -5.60dBi Average Gain=-10.19dBi</p>
X - Z Plane Average Gain= -2.147 dBi	<p>Peak Gain= -4.98 dBi Average Gain= -9.68dBi</p>	<p>Peak Gain= 1.61 dBi Average Gain= -2.99 dBi</p>
X - Y Plane Average Gain= -2.810 dBi	<p>Peak Gain= -3.79 dBi Average Gain= -8.89dBi</p>	<p>Peak Gain= 0.77 dBi Average Gain= -4.04 dBi</p>