

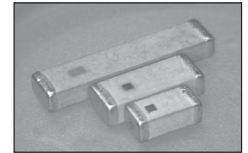
# NGAW Series

## Surface Mount Multilayer Chip Antenna



### FEATURES

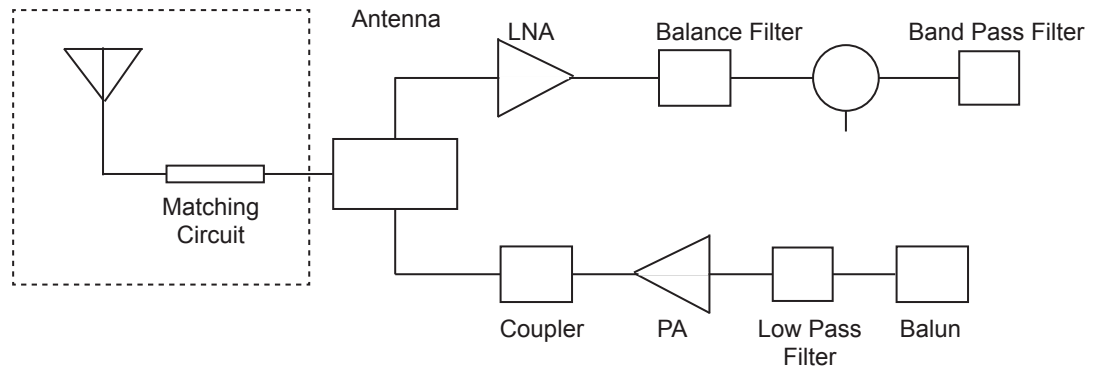
- LIGHT WEIGHT, COMPACT
- WIDE BANDWIDTH
- LOW COST LTCC CONSTRUCTION
- SURFACE MOUNTABLE CONSTRUCTION
- TAPED AND REELED FOR AUTOMATIC INSERTION



### CHARACTERISTICS

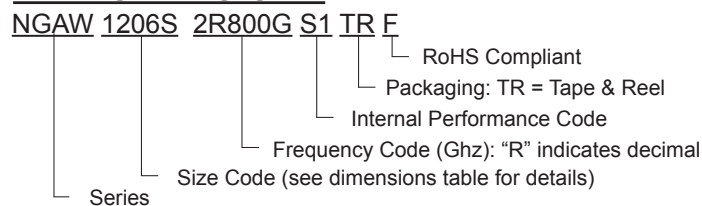
Case Code	0402	0603	1206	5221	6020	7020
Frequency Range	2.45GHz	2.45 ~ 5.50GHz	2.45 ~ 7.00GHz	2.45GHz	2.64GHz	0.900 ~ 2.47GHz
Case Code	8010	1032	1060	1240	1540	
Frequency Range	5.40GHz	1.60GHz	7.00GHz	0.433GHz	2.20GHz	
Operating Temperature Range	-40°C ~ +85°C					
Impedance	50Ω					
Power Capacity	2 ~ 3 Watts					
Resistance to Solder Heat	+260°C for 10 seconds					

### Typical Application



Other suggested applications are shown on page 4.

### PART NUMBER SYSTEM



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### NGAW0402 Size

Part Number	Standard Values - Case Size 0402 (1.0 x 0.5 x 0.4mm)					
	Center Frequency	Bandwidth	Peak Gain	Return Loss	Impedance (Ω)	Power Capacity (W)
<a href="#">NGAW0402S2R45GS1TRF</a>	2.450GHz	≤ 50MHz	+0.7 dBi typ.	4.5 dBi min.	50Ω	2W

### NGAW0603 Size

Part Number	Standard Values - Case Size 0603 (1.6 x 0.8 x 0.45mm)						
	Center Frequency	Bandwidth	Peak Gain	Return Loss	VSWR	Impedance (Ω)	Power Capacity (W)
<a href="#">NGAW0603S2R45GS1TRF</a>	2.450GHz	2.40 ~ 2.48GHz	1.1 dBi typ.	9.5 dBi min.	-	50Ω	2W
<a href="#">NGAW0603S5R50GS1TRF</a>	5.500GHz	2.40 ~ 2.48GHz 5.15 ~ 5.85GHz	0.7 dBi typ. 3.5 dBi typ.	3.5 dBi min. 9.0 dBi min.	-	50Ω	2W
<a href="#">NGAW0603S5R50GS2TRF</a>	5.500GHz	2.40 ~ 2.484GHz 5.15 ~ 5.85GHz	-	-	4 max. 5 max.	50Ω	3W

### NGAW1206 Size

Part Number	Standard Values - Case Size 1206 (3.2 x 1.6 x 1.2mm)						
	Center Frequency	Bandwidth	Peak Gain	Return Loss	VSWR	Impedance (Ω)	Power Capacity (W)
<a href="#">NGAW1206S2R45GS1TRF</a>	2.450GHz	2.40 ~ 2.50GHz	1.00 dBi typ.	10 dB min.	-	50Ω	3W
<a href="#">NGAW1206S2R45GS2TRF</a>	2.450GHz	≥100MHz	2.50 dBi typ.	10 dB min.	<2	50Ω	2W
<a href="#">NGAW1206S2R45GS3TRF</a>	2.450GHz	2.40 ~ 2.50GHz	1.65 dBi typ.	10 dB min.	-	50Ω	3W
<a href="#">NGAW1206S6R050GSTRF</a>	6.050GHz	2.40 ~ 2.50GHz 2.49 ~ 5.85GHz 5.85 ~ 7.20GHz	2.50 dBi min. 1.40 dBi min. 1.00 dBi min.	10 dB min.	-	50Ω	3W
<a href="#">NGAW1206S7R00GS3TRF</a>	7.000GHz	5.50 ~ 8.50GHz	3.00 dBi Typ.	8.5 dBi min.	-	50Ω	3W

### NGAW5221 Size

Part Number	Standard Values - Case Size 5221 (5.2 x 2.1 x 2.0mm)						
	Center Frequency	Bandwidth	Peak Gain	Return Loss	VSWR	Impedance (Ω)	Power Capacity (W)
<a href="#">NGAW5221S2R45GS3TRF</a>	2.450GHz	2.40 ~ 2.50GHz	1.50 dBi min.	7.0 dB min.	-	50Ω	3W
<a href="#">NGAW5221S2R45GS4TRF</a>	2.450GHz	2.40 ~ 2.48GHz	-2.20 dBi min.	3.5 dB min.	-	50Ω	2W
<a href="#">NGAW5221S2R54GS5TRF</a>	2.540GHz	≥200MHz	2.50 dBi typ.	-	< 2	50Ω	3W

### NGAW6020 Size

Part Number	Standard Values - Case Size 6020 (6.0 x 2.0 x 1.0mm)						
	Center Frequency	Bandwidth	Peak Gain	Return Loss	VSWR	Impedance (Ω)	Power Capacity (W)
<a href="#">NGAW6020S2R640GS1TRF</a>	2.64GHz	≥200MHz	2.6 dB typ.	0.7 dB typ.	< 2	50Ω	3W

### NGAW7020 Size

Part Number	Standard Values - Case Size 7020 (7.0 x 2.0 x 2.0mm)					
	Center Frequency	Bandwidth	Peak Gain	Return Loss	Impedance (Ω)	Power Capacity (W)
<a href="#">NGAW7020S1R60GS1TRF</a>	1.60GHz	1.561 ~ 1.602GHz	-1.1 dBi	10 dB min.	50Ω	3W
<a href="#">NGAW7020S2R40GS3TRF</a>	2.45GHz	2.40 ~ 2.50GHz	2.5 dBi	9.0 dB min.	50Ω	3W
<a href="#">NGAW7020S2R470GS1TRF</a>	2.45GHz	2.40 ~ 2.50GHz	1.7 dBi	10 dB min.	50Ω	3W
<a href="#">NGAW7020S900MS1TRF</a>	0.90GHz	0.858 ~ 0.928GHz	-2.0 dBi	4.5 dB min.	50Ω	2W

For full specifications of each NIC part number, please visit the specific part number page available at [www.niccomp.com](http://www.niccomp.com) or by clicking on the part numbers.

### Performance Passives By Design

# NGAW Series

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### NGAW8010 Size

Part Number	Standard Values - Case Size 8010 (8.5 x 1.6 x 1.2mm)					
	Center Frequency	Bandwidth	Peak Gain	Return Loss	Impedance (Ω)	Power Capacity (W)
<a href="#">NGAW8010S5R40GS1TRF</a>	5.40GHz	2.40 ~ 2.50GHz 4.90 ~ 5.90GHz	1.0 dBi 2.3 dBi	10 dB min.	50Ω	2W

### NGAW1032 Size

Part Number	Standard Values - Case Size 1032 (10.0 x 3.2 x 1.5mm)						
	Center Frequency	Bandwidth	Peak Gain	Return Loss	Isolation	Impedance (Ω)	Power Capacity (W)
<a href="#">NGAW1032S1R60GS1TRF</a>	1.60GHz	2.40 ~ 2.50GHz 1.561 ~ 1.602GHz	1.5 dBi 1.5 dBi	9.0 dB min. 4.5 dB min.	20 dBi min. 15 dBi min.	50Ω	2W

### NGAW1060 Size

Part Number	Standard Values - Case Size 1032 (10.0 x 6.0 x 1.2mm)					
	Center Frequency	Bandwidth	Peak Gain	Return Loss	Impedance (Ω)	Power Capacity (W)
<a href="#">NGAW1060S7R0GS1TRF</a>	7.00GHz	3.10 ~ 10.30GHz	2.2 dBi	8.5 dB min.	50Ω	3W

### NGAW1240 Size

Part Number	Standard Values - Case Size 1032 (10.0 x 3.2 x 1.5mm)					
	Center Frequency	Bandwidth	Peak Gain	Return Loss	Impedance (Ω)	Power Capacity (W)
<a href="#">NGAW1240S433MS1TRF</a>	0.433GHz	0.428 ~ 0.438GHz	-1.72 dBi	8.5 dB min.	50Ω	3W

### NGAW1540 Size

Part Number	Standard Values - Case Size 1032 (10.0 x 6.0 x 1.2mm)					
	Bandwidth Tuned Version 1	Bandwidth Tuned Version 2	Return Loss Tuned Version 1	Return Loss Tuned Version 2	Impedance (Ω)	Power Capacity (W)
<a href="#">NGAW1540S2R20GS1TRF</a>	0.70 ~ 0.80GHz 1.70 ~ 2.10GHz	0.824 ~ 0.960GHz 1.71 ~ 2.69GHz	3.5 dB min.	4.5 dB min.	50Ω	3W

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# NGAW Series

## Surface Mount Multilayer Chip Antenna



### APPLICATIONS

Part Number	Applications	Link to Datasheet
NGAW0402S2R45GS1TRF	2.45 GHz WiFi / BLE Multilayer Chip Antenna	<a href="https://www.niccomp.com/products/catalog/NGAW0402S2R45GS1TRF.pdf">https://www.niccomp.com/products/catalog/NGAW0402S2R45GS1TRF.pdf</a>
NGAW0603S2R45GS1TRF	2.45 GHz WiFi / BLE Multilayer Chip Antenna	<a href="https://www.niccomp.com/products/catalog/NGAW0603S2R45GS1TRF.pdf">https://www.niccomp.com/products/catalog/NGAW0603S2R45GS1TRF.pdf</a>
NGAW0603S5R50GS1TRF	2.4 & 5.1 GHz WiFi Multilayer Chip Antenna	<a href="https://www.niccomp.com/products/catalog/NGAW0603S5R50GS1TRF.pdf">https://www.niccomp.com/products/catalog/NGAW0603S5R50GS1TRF.pdf</a>
NGAW0603S5R50GS2TRF	2.4 & 5.1 GHz WiFi Multilayer Chip Antenna	<a href="https://www.niccomp.com/products/catalog/NGAW0603S5R50GS2TRF.pdf">https://www.niccomp.com/products/catalog/NGAW0603S5R50GS2TRF.pdf</a>
NGAW1032S1R60GS1TRF	GNSS L1 & 2.4 GHz Multilayer Chip Antenna	<a href="https://www.niccomp.com/products/catalog/NGAW1032S1R60GS1TRF.pdf">https://www.niccomp.com/products/catalog/NGAW1032S1R60GS1TRF.pdf</a>
NGAW1060S7R0GS1TRF	7 GHz Multilayer Chip Antenna	<a href="https://www.niccomp.com/products/catalog/NGAW1060S7R0GS1TRF.pdf">https://www.niccomp.com/products/catalog/NGAW1060S7R0GS1TRF.pdf</a>
NGAW1206S2R450GS1TRF	2.45 GHz WiFi / BLE Multilayer Chip Antenna	<a href="https://www.niccomp.com/products/catalog/NGAW1206S2R450GS1TRF.pdf">https://www.niccomp.com/products/catalog/NGAW1206S2R450GS1TRF.pdf</a>
NGAW1206S2R45GS2TRF	2.45 GHz WiFi / BLE Multilayer Chip Antenna	<a href="https://www.niccomp.com/products/catalog/NGAW1206S2R45GS2TRF.pdf">https://www.niccomp.com/products/catalog/NGAW1206S2R45GS2TRF.pdf</a>
NGAW1206S2R45GS3TRF	2.45 GHz WiFi / BLE Multilayer Chip Antenna	<a href="https://www.niccomp.com/products/catalog/NGAW1206S2R45GS3TRF.pdf">https://www.niccomp.com/products/catalog/NGAW1206S2R45GS3TRF.pdf</a>
NGAW1206S6R050GS1TRF	2.4 /4.9 /5.8 GHz Multilayer Chip Antenna	<a href="https://www.niccomp.com/products/catalog/NGAW1206S6R050GS1TRF.pdf">https://www.niccomp.com/products/catalog/NGAW1206S6R050GS1TRF.pdf</a>
NGAW1206S7R00GS3TRF	5.5 GHz Multilayer Chip Antenna	<a href="https://www.niccomp.com/products/catalog/NGAW1206S7R00GS3TRF.pdf">https://www.niccomp.com/products/catalog/NGAW1206S7R00GS3TRF.pdf</a>
NGAW1240S433MS1TRF	433 MHz ISM Multilayer Antenna	<a href="https://www.niccomp.com/products/catalog/NGAW1240S433MS1TRF.pdf">https://www.niccomp.com/products/catalog/NGAW1240S433MS1TRF.pdf</a>
NGAW1540S2R20GS1TRF	2.2 GHz LTE Multilayer Antenna	<a href="https://www.niccomp.com/products/catalog/NGAW1540S2R20GS1TRF.pdf">https://www.niccomp.com/products/catalog/NGAW1540S2R20GS1TRF.pdf</a>
NGAW5221S2R45GS3TRF	2.45 GHz WiFi / BLE Multilayer Chip Antenna	<a href="https://www.niccomp.com/products/catalog/NGAW5221S2R45GS3TRF.pdf">https://www.niccomp.com/products/catalog/NGAW5221S2R45GS3TRF.pdf</a>
NGAW5221S2R45GS4TRF	2.4 GHz WiFi / BLE Multilayer Chip Antenna	<a href="https://www.niccomp.com/products/catalog/NGAW5221S2R45GS4TRF.pdf">https://www.niccomp.com/products/catalog/NGAW5221S2R45GS4TRF.pdf</a>
NGAW5221S2R54GS5TRF	2.45 GHz WiFi / BLE Multilayer Chip Antenna	<a href="https://www.niccomp.com/products/catalog/NGAW5221S2R54GS5TRF.pdf">https://www.niccomp.com/products/catalog/NGAW5221S2R54GS5TRF.pdf</a>
NGAW6020S2R640GS1TRF	2.64 GHz WiFi / BLE Multilayer Chip Antenna	<a href="https://www.niccomp.com/products/catalog/NGAW6020S2R640GS1TRF.pdf">https://www.niccomp.com/products/catalog/NGAW6020S2R640GS1TRF.pdf</a>
NGAW7020S1R60GS1TRF	1.6 GHz GNSS L1 Multilayer Chip Antenna	<a href="https://www.niccomp.com/products/catalog/NGAW7020S1R60GS1TRF.pdf">https://www.niccomp.com/products/catalog/NGAW7020S1R60GS1TRF.pdf</a>
NGAW7020S2R40GS3TRF	2.4 GHz WiFi / BLE Multilayer Chip Antenna	<a href="https://www.niccomp.com/products/catalog/NGAW7020S2R40GS3TRF.pdf">https://www.niccomp.com/products/catalog/NGAW7020S2R40GS3TRF.pdf</a>
NGAW7020S2R470GS1TRF	2.45 GHz WiFi / BLE Multilayer Chip Antenna	<a href="https://www.niccomp.com/products/catalog/NGAW7020S2R470GS1TRF.pdf">https://www.niccomp.com/products/catalog/NGAW7020S2R470GS1TRF.pdf</a>
NGAW7020S900MS1TRF	900 MHz ISM Multilayer Chip Antenna	<a href="https://www.niccomp.com/products/catalog/NGAW7020S900MS1TRF.pdf">https://www.niccomp.com/products/catalog/NGAW7020S900MS1TRF.pdf</a>
NGAW8010S5R40GS1TRF	2.4 & 4.9 GHz WiFi / BLE Multilayer Chip Antenna	<a href="https://www.niccomp.com/products/catalog/NGAW8010S5R40GS1TRF.pdf">https://www.niccomp.com/products/catalog/NGAW8010S5R40GS1TRF.pdf</a>

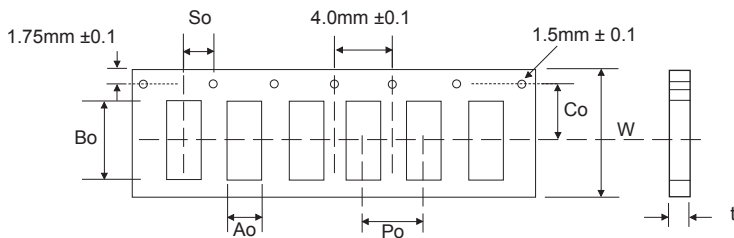
# NGAW Series

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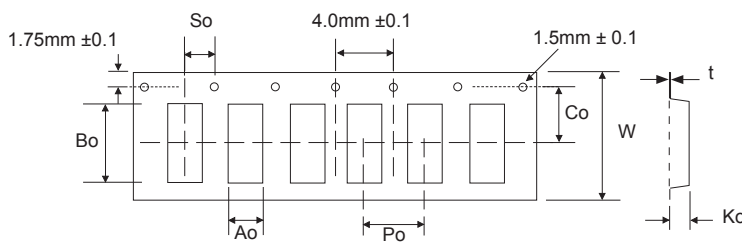


Case Size	CARRIER TAPING DIMENSIONS (mm) AND REEL QUANTITY								
	Ao	Bo	Po	So	Co	Ko	t	W	Quantity
NGAW0402	0.62 ± 0.05	1.12 ± 0.05	2.0 ± 0.05	2.0 ± 0.05	3.5 ± 0.05	0.60 max.	0.35 max.	8.0 ± 0.30	10,000
NGAW0603	1.00 ± 0.10	1.80 ± 0.10	4.0 ± 0.10	2.0 ± 0.05	3.5 ± 0.05	n/a	0.50 ± 0.10	8.0 ± 0.30	4,000
NGAW1206	1.80 ± 0.10	3.50 ± 0.10	4.0 ± 0.10	2.0 ± 0.05	3.5 ± 0.10	1.25 max.	0.27 max.	8.0 ± 0.30	3,000
NGAW5221	2.35 ± 0.10	5.50 ± 0.10	8.0 ± 0.10	2.0 ± 0.05	5.5 ± 0.10	8.0 ± 0.30	0.35 max.	12.0 ± 0.30	4,000
NGAW6020	2.35 ± 0.10	6.30 ± 0.10	8.0 ± 0.10	2.0 ± 0.05	5.5 ± 0.10	12.0 ± 0.30	0.35 max.	12.0 ± 0.30	4,000
NGAW7020	2.30 ± 0.10	7.50 ± 0.10	8.0 ± 0.10	2.0 ± 0.10	7.5 ± 0.10	1.9 ± 0.10	0.35 max.	16.0 ± 0.30	4,000
NGAW8010	1.20 ± 0.10	8.40 ± 0.10	8.0 ± 0.10	2.0 ± 0.10	7.5 ± 0.10	1.6 ± 0.10	0.35 max.	16.0 ± 0.30	4,000
NGAW1032	3.55 ± 0.20	10.35 ± 0.20	8.0 ± 0.10	N/A	7.5 ± 0.10	1.7 ± 0.10	0.30 ± 0.10	16.0 ± 0.20	2,000
NGAW1060	6.35 ± 0.20	10.35 ± 0.20	8.0 ± 0.10	N/A	7.5 ± 0.10	1.4 ± 0.10	0.30 ± 0.05	16.0 ± 0.20	2,000
NGAW1240	4.35 ± 0.20	12.35 ± 0.20	8.0 ± 0.10	N/A	11.5 ± 0.15	2.0 ± 0.10	0.30 ± 0.05	24.0 ± 0.20	2,000
NGAW1540	4.35 ± 0.20	15.35 ± 0.20	8.0 ± 0.10	N/A	11.5 ± 0.15	1.7 ± 0.10	0.30 ± 0.05	24.0 ± 0.20	2,000

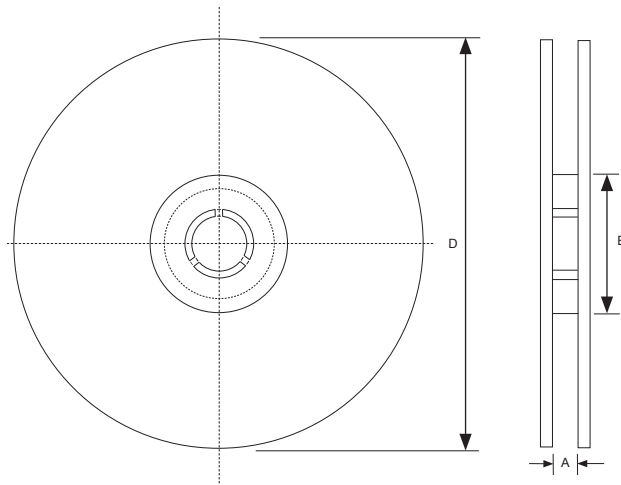
Carrier for 0603 Case Size (Paper)



Carrier for All Other Case Sizes (Embossed)



Tape Width	REEL DIMENSIONS (mm)		
	A(mm)	B(mm)	D(mm)
NGAW0402	10.0 ± 1.5	58 ± 2.0	178 ± 2.0
NGAW0603	10.0 ± 1.5	58 ± 2.0	178 ± 2.0
NGAW1206	9.0 ± 1.5	58 ± 2.0	178 ± 2.0
NGAW5221	12.5 ± 1.5	100 ± 2.0	330 ± 2.0
NGAW6020	12.5 ± 1.5	100 ± 2.0	330 ± 2.0
NGAW7020	16.5 ± 1.5	100 ± 2.0	330 ± 2.0
NGAW8010	16.5 ± 1.5	100 ± 2.0	330 ± 2.0
NGAW1032	16.5 ± 2.0	100 ± 0.5	330 ± 1.0
NGAW1060	16.5 ± 2.0	100 ± 0.5	330 ± 1.0
NGAW1240	16.5 ± 2.0	100 ± 0.5	330 ± 1.0
NGAW1540	16.5 ± 2.0	100 ± 0.5	330 ± 1.0



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