

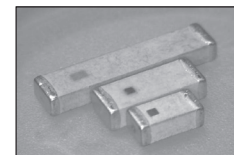
NGAW Series

Surface Mount Multilayer Chip Antenna



FEATURES

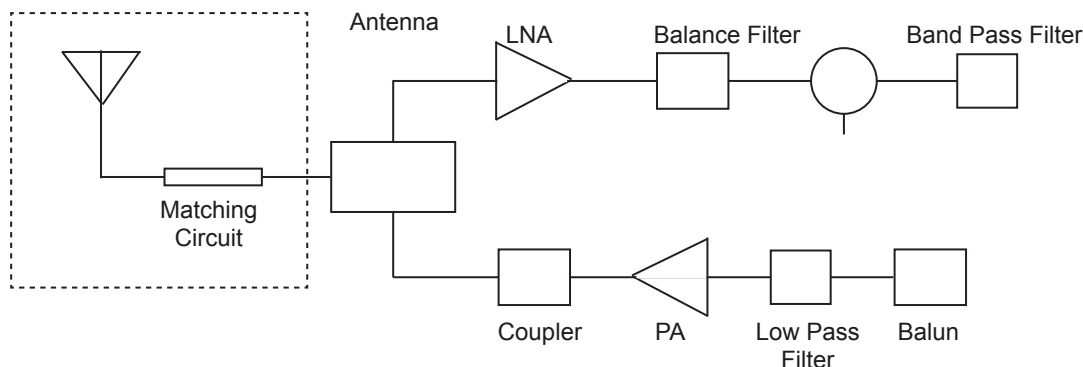
- LIGHT WEIGHT, COMPACT
- WIDE BANDWIDTH
- LOW COST LTCC CONSTRUCTION
- SURFACE MOUNTABLE CONSTRUCTION
- TAPED AND REELED FOR AUTOMATIC INSERTION



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

NGAW 1206S 2R800G S1 TR E

- Series
- Size Code (see dimensions table for details)
- Frequency Code (Ghz): "R" indicates decimal
- Internal Performance Code
- Packaging: TR = Tape & Reel
- RoHS Compliant

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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)
NGAW0402S2R45GS1TRF	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)
NGAW0603S2R45GS1TRF	2.450GHz	2.40 ~ 2.48GHz	1.1 dBi typ.	9.5 dBi min.	-	50Ω	2W
NGAW0603S5R50GS1TRF	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
NGAW0603S5R50GS2TRF	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)
NGAW1206S2R45GS1TRF	2.450GHz	2.40 ~ 2.50GHz	1.00 dBi typ.	10 dB min.	-	50Ω	3W
NGAW1206S2R45GS2TRF	2.450GHz	≥100MHz	2.50 dBi typ.	10 dB min.	<2	50Ω	2W
NGAW1206S2R45GS3TRF	2.450GHz	2.40 ~ 2.50GHz	1.65 dBi typ.	10 dB min.	-	50Ω	3W
NGAW1206S6R050GSTRF	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
NGAW1206S7R00GS3TRF	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)
NGAW5221S2R45GS3TRF	2.450GHz	2.40 ~ 2.50GHz	1.50 dBi min.	7.0 dB min.	-	50Ω	3W
NGAW5221S2R45GS4TRF	2.450GHz	2.40 ~ 2.48GHz	-2.20 dBi min.	3.5 dB min.	-	50Ω	2W
NGAW5221S2R54GS5TRF	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)
NGAW6020S2R640GS1TRF	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)
NGAW7020S1R60GS1TRF	1.60GHz	1.561 ~ 1.602GHz	-1.1 dBi	10 dB min.	50Ω	3W
NGAW7020S2R40GS3TRF	2.45GHz	2.40 ~ 2.50GHz	2.5 dBi	9.0 dB min.	50Ω	3W
NGAW7020S2R470GS1TRF	2.45GHz	2.40 ~ 2.50GHz	1.7 dBi	10 dB min.	50Ω	3W
NGAW7020S900MS1TRF	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 or by clicking on the part numbers.

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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)
NGAW8010S5R40GS1TRF	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)
NGAW1032S1R60GS1TRF	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)
NGAW1060S7R0GS1TRF	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)
NGAW1240S433MS1TRF	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)
NGAW1540S2R20GS1TRF	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

For full specifications of each NIC part number, please visit the specific part number page available at www.niccomp.com or by clicking on the part numbers.

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APPLICATIONS

Part Number	Applications	Link to Datasheet
NGAW0402S2R45GS1TRF	2.45 GHz WiFi / BLE Multilayer Chip Antenna	https://www.niccomp.com/products/catalog/NGAW0402S2R45GS1TRF.pdf
NGAW0603S2R45GS1TRF	2.45 GHz WiFi / BLE Multilayer Chip Antenna	https://www.niccomp.com/products/catalog/NGAW0603S2R45GS1TRF.pdf
NGAW0603S5R50GS1TRF	2.4 & 5.1 GHz WiFi Multilayer Chip Antenna	https://www.niccomp.com/products/catalog/NGAW0603S5R50GS1TRF.pdf
NGAW0603S5R50GS2TRF	2.4 & 5.1 GHz WiFi Multilayer Chip Antenna	https://www.niccomp.com/products/catalog/NGAW0603S5R50GS2TRF.pdf
NGAW1032S1R60GS1TRF	GNSS L1 & 2.4 GHz Multilayer Chip Antenna	https://www.niccomp.com/products/catalog/NGAW1032S1R60GS1TRF.pdf
NGAW1060S7R0GS1TRF	7 GHz Multilayer Chip Antenna	https://www.niccomp.com/products/catalog/NGAW1060S7R0GS1TRF.pdf
NGAW1206S2R45GS1TRF	2.45 GHz WiFi / BLE Multilayer Chip Antenna	https://www.niccomp.com/products/catalog/NGAW1206S2R45GS1TRF.pdf
NGAW1206S2R45GS2TRF	2.45 GHz WiFi / BLE Multilayer Chip Antenna	https://www.niccomp.com/products/catalog/NGAW1206S2R45GS2TRF.pdf
NGAW1206S2R45GS3TRF	2.45 GHz WiFi / BLE Multilayer Chip Antenna	https://www.niccomp.com/products/catalog/NGAW1206S2R45GS3TRF.pdf
NGAW1206S6R050GS1TRF	2.4 / 4.9 / 5.8 GHz Multilayer Chip Antenna	https://www.niccomp.com/products/catalog/NGAW1206S6R050GS1TRF.pdf
NGAW1206S7R00GS3TRF	5.5 GHz Multilayer Chip Antenna	https://www.niccomp.com/products/catalog/NGAW1206S7R00GS3TRF.pdf
NGAW1240S433MS1TRF	433 MHz ISM Multilayer Antenna	https://www.niccomp.com/products/catalog/NGAW1240S433MS1TRF.pdf
NGAW1540S2R20GS1TRF	2.2 GHz LTE Multilayer Antenna	https://www.niccomp.com/products/catalog/NGAW1540S2R20GS1TRF.pdf
NGAW5221S2R45GS3TRF	2.45 GHz WiFi / BLE Multilayer Chip Antenna	https://www.niccomp.com/products/catalog/NGAW5221S2R45GS3TRF.pdf
NGAW5221S2R45GS4TRF	2.4 GHz WiFi / BLE Multilayer Chip Antenna	https://www.niccomp.com/products/catalog/NGAW5221S2R45GS4TRF.pdf
NGAW5221S2R54GS5TRF	2.45 GHz WiFi / BLE Multilayer Chip Antenna	https://www.niccomp.com/products/catalog/NGAW5221S2R54GS5TRF.pdf
NGAW6020S2R640GS1TRF	2.64 GHz WiFi / BLE Multilayer Chip Antenna	https://www.niccomp.com/products/catalog/NGAW6020S2R640GS1TRF.pdf
NGAW7020S1R60GS1TRF	1.6 GHz GNSS L1 Multilayer Chip Antenna	https://www.niccomp.com/products/catalog/NGAW7020S1R60GS1TRF.pdf
NGAW7020S2R40GS3TRF	2.4 GHz WiFi / BLE Multilayer Chip Antenna	https://www.niccomp.com/products/catalog/NGAW7020S2R40GS3TRF.pdf
NGAW7020S2R470GS1TRF	2.45 GHz WiFi / BLE Multilayer Chip Antenna	https://www.niccomp.com/products/catalog/NGAW7020S2R470GS1TRF.pdf
NGAW7020S900MS1TRF	900 MHz ISM Multilayer Chip Antenna	https://www.niccomp.com/products/catalog/NGAW7020S900MS1TRF.pdf
NGAW8010S5R40GS1TRF	2.4 & 4.9 GHz WiFi / BLE Multilayer Chip Antenna	https://www.niccomp.com/products/catalog/NGAW8010S5R40GS1TRF.pdf

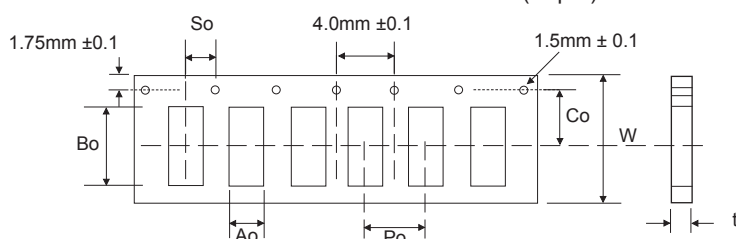
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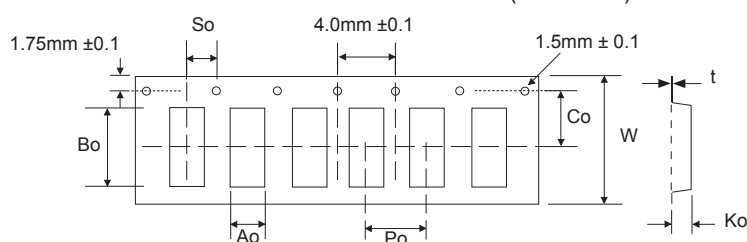


Case Size	CARRIER TAPING DIMENSIONS (mm) AND REEL QUANTITY								
	Ao	Bo	Po	So	Co	Ko	t	W	Quantity
NGAW0402	0.62 ± 0.05	1.12 ± 0.05	2.0 ± 0.05	2.0 ± 0.05	3.5 ± 0.05	0.60 max.	0.35 max.	8.0 ± 0.30	10,000
NGAW0603	1.00 ± 0.10	1.80 ± 0.10	4.0 ± 0.10	2.0 ± 0.05	3.5 ± 0.05	n/a	0.50 ± 0.10	8.0 ± 0.30	4,000
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

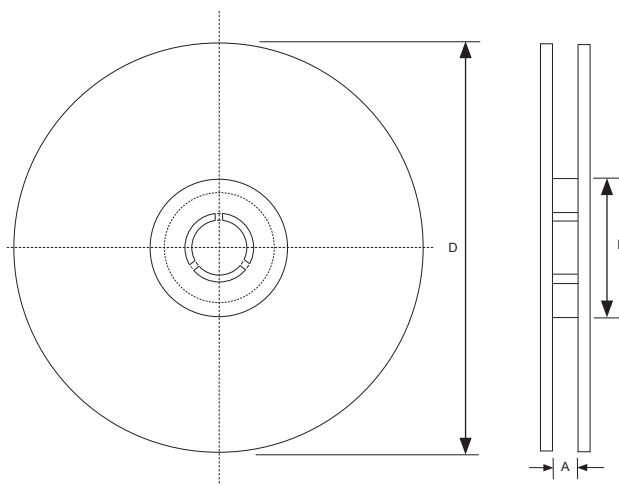
Carrier for 0603 Case Size (Paper)



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



REFLOW SOLDERING PROFILE

