

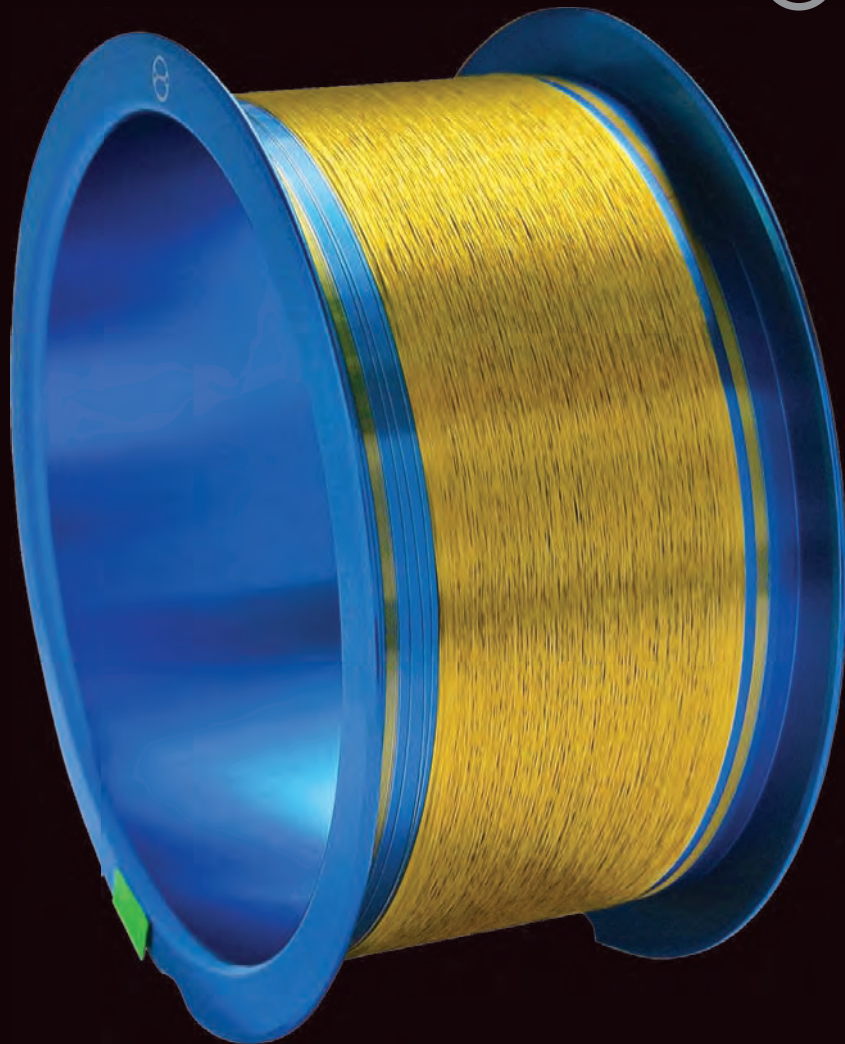
Available from:

**TopLine**<sup>®</sup>

GOLD • SILVER • COPPER • ALUMINUM

# BONDING WIRE

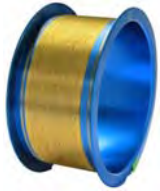
Made by  TANAKA



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Product Guide 2025 - B



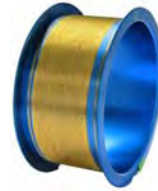
**GSA Type**  
Gold Au (4N)  
Bonding Wire  
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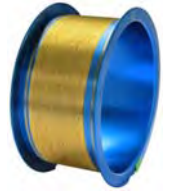
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Gold Au (4N)  
High Performance Wedge  
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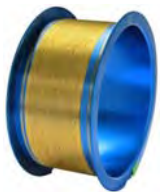
**GLF Type**  
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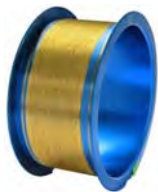
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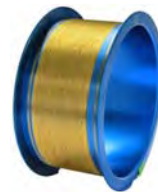
**GPH Type**  
High Reliability (2N)  
Bonding Wire  
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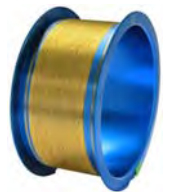
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Manual Bonder Au  
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**GBC (2N)**  
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Bumping Wire  
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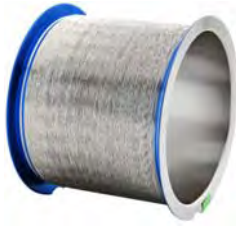
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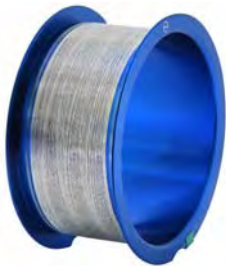
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Copper Alloy  
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**TABN Type**  
Aluminum Al-1% Si  
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Large Aluminum Al  
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**TABR Type**  
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Contact: info@TopLine.tv  
Tel 1-800-776-9888

### About TopLine:

TopLine sells bonding wire made by Tanaka to universities, microelectronic labs and small volume users. Easy to order. Need just one spool? - Contact us today.

### About Tanaka:

Tanaka is the world's premier manufacturer of bonding wire to the semiconductor industry. Tanaka offers a full range of Gold (Au), Silver (Ag), Aluminum (Al), bare Copper (Cu) and Palladium Coated Copper (PCC) covering all applications of wedge, ball and bump bonding.

### Ag Silver Alloy Wire (p24~25)

Silver (Ag) alloy wire offers reduced cost compared to gold. High reflectivity in short wavelength range. Diameter 15um to 30um. Contact TopLine for special needs.

### Cu Copper Alloy Wire (p32~33)

High reliability copper alloy bonding wire provides wider second bond process window and lower resistivity than bare copper. Softer FAB and higher bond reliability after aging 2000 hours. Stable bonding with Forming Gas 95/5.

### Al-1% Si - Aluminum Wire (p38~39)

Small diameter Al-1% Si wire in diameters ranging from 18um to 80um. Good corrosion resistance. Uniform distribution of Si and stable mechanical properties.

### Ribbon Wire (p42~45)

Flat aluminum (Al) and Gold (Au) is available for power device applications. Excellent corrosion resistance and satisfactory surface smoothness.

### Start-End Spool (p46)

Green tape indicates start of spool. Red tape is the end.

### Au Gold Wire (p4~23)

4N gold bonding wire in a range of diameters from 15um to 50um. Many specialty applications including stable stitch, fine-pitch, super low loop and high reliability applications. Also 2N Au alloy and 4N Au bumping wire. Special Type is available for high performance wedge bonding.

### PCC - Pd Coated Copper (p26~27)

Palladium coated Cu wire (PCC) is easier to bond than bare copper wire. The palladium (Pd) coating provides high performance and stable bonding with a wide process window. Wire bonding equipment requires grounding. Diameter 15um~50um. N2 or Forming Gas 95/5.

### Cu Pure Bare Copper Wire (p34~35)

Provides stable wire bonding performance due to preeminent Tanaka quality control system and wire manufacturing experience. Excellent stitch bond-ability and wide bonding parameter window. Stable continuous bond-ability.

### Al Power Aluminum Wire (p40~41)

Large diameter aluminum (Al) wire for high power applications. Diameters range from 100um to 600um. Contact us for special needs.

### Technical Support:

Contact TopLine for technical support and questions for applications involving special needs. We look forward to assisting you. Email Tanaka@TopLine.tv  
Or call 1-800-776-9888

Contact:

## TopLine Corporation

95 Highway 22 W.  
Milledgeville, GA 31061 USA

Tel: +1-800-776-9888

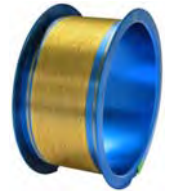
Email: Tanaka@TopLine.tv

www.TanakaWire.com

We accept credit cards:



Ready to assist you.



Ø Diameter ±1% µm	Breaking Load (gf)	Breaking Load (mN)	Elongation EL (%)	HAZ Length	Length Meters	Length Feet	Part Number	Order Nr
Ø 12.5µm (Ø 0.5 mil)	1.7~3.5 gf	17~34 mN	1.0~6.0%	120~180µm	100m 200m	300ft 600ft	GSA-12.5A100 GSA-12.5A200	300121 300122
Ø 15µm (Ø 0.6 mil)	2.5~5.3 gf	25~52 mN	1.0~6.0%	130~200µm	100m 300m 500m	300ft 1000ft 1500ft	GSA-15A100 GSA-15A300 GSA-15A500	300151 300153 300155
Ø 18µm (Ø 0.7 mil)	3.6~7.6 gf	35~75 mN	1.0~6.0%	150~210µm	100m 300m 500m	300ft 1000ft 1500ft	GSA-18A100 GSA-18A300 GSA-18A500	300181 300183 300185
Ø 20µm (Ø 0.8 mil)	4.5~9.4 gf	44~92 mN	1.0~7.0%	150~220µm	100m 300m 500m	300ft 1000ft 1500ft	GSA-20A100 GSA-20A300 GSA-20A500	300201 300203 300205
Ø 25µm (Ø 1.0 mil)	7.0~14.7 gf	69~144 mN	1.0~7.0%	160~240µm	100m 300m 500m	300ft 1000ft 1500ft	GSA-25A100 GSA-25A300 GSA-25A500	300251 300253 300255
Ø 30µm (Ø 1.2 mil)	10.0~21.2 gf	98~208 mN	1.5~8.5%	170~270µm	100m 300m 500m	300ft 1000ft 1500ft	GSA-30A100 GSA-30A300 GSA-30A500	300301 300303 300305
Ø 32µm (Ø 1.25 mil)	11.4~24.1 gf	112~236 mN	1.5~8.5%	170~280µm	100m 300m 500m	300ft 1000ft 1500ft	GSA-32A100 GSA-32A300 GSA-32A500	300321 300323 300325
Ø 33µm (Ø 1.3 mil)	12.1~25.6 gf	119~251 mN	1.5~8.5%	170~280µm	100m 300m 500m	300ft 1000ft 1500ft	GSA-33A100 GSA-33A300 GSA-33A500	300331 300333 300335
Ø 38µm (Ø 1.5 mil)	16.0~33.8 gf	157~331 mN	1.5~8.5%	180~300µm	100m 300m 500m	300ft 1000ft 1500ft	GSA-38A100 GSA-38A300 GSA-38A500	300381 300383 300385
Ø 50µm (Ø 2.0mil)	27.9~58.8 gf	274~577 mN	1.5~8.5%	200~340µm	100m 300m	300ft 1000ft	GSA-50A100 GSA-50A300	300501 300503
Ø 75µm (Ø 3.0mil)	62.9~132.9 gf	620~1311 mN	1.5~8.5%	N/A	100m	300ft	GSA-75B100	300751

## Spool Information

Type	A Flange Diameter	B Shaft Diameter	C Hub Diameter	D Hub Thickness	E Winding Width	F Overall Width	Style	Part Nr Code
	58.5mm	48.8mm	50.3mm	0.75mm	26.4mm	27.9mm	AL-2(W)	A
	58.5mm	48.8mm	50.3mm	0.75mm	26.4mm	27.9mm	AL-2 WNI Conductive	C
	58.5mm	48.8mm	50.3mm	0.75mm	45.5mm	47.0mm	AL-4 WNI Conductive	N

Note 1: Round Wire is wound forward/cross pattern (Cross wound-cross hatch wind)

Note 2: Start wire on spool with Green tape.

Note 3: End wire on spool with Red tape.

### INFO

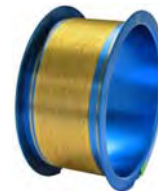
Note 1: Stable stitch bond on PPF (NiPdAu) QFN at 175°C, QFP and BGA Packages.

Note 2: Good 2nd bond stitch remaining after pull test. Good squashed ball shape and excellent FAB softness.

Note 3: Standard Tolerance: Ø12.5µm~38µm ±1 µm, Ø50µm ±2 µm Ø60µm~80µm ±3 µm

Note 4: Diameter: 12.5µm, 15µm, 18µm, 20µm, 23µm, 25µm, 28µm, 30µm, 32µm, 33µm, 38µm, 50µm, 75µm

# GSA Type How to Order

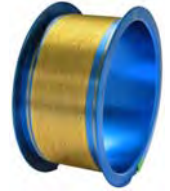


Part Number System				
<u>GSA</u>	-	<u>25</u>	<u>A</u>	<u>100</u>
Type		Ø Diameter µm	Spool Type	Length Meters
<b>Gold 4N (Au99.99)</b> GSA = Stable Stitch Order# 300XXX  GSB = Stronger 2 <sup>nd</sup> bond Order# 336XXX		<b>Code Mil</b> 12.5 0.5mil 15 0.6mil 18 0.7mil 20 0.8mil 23 0.9mil 25 1.0mil 28 1.1mil 30 1.2mil 32 1.25mil 33 1.3mil 38 1.5mil 50 2.0mil 62.5 2.5mil 65 2.5mil 75 3.0mil	<b>Aluminum Spool</b> A = 2"x1" AL-2(W) B = 2"x2" AL-4  <b>Conductive Spool</b> C = 2"x1" AL-2(WNI) N = 2"x2" AL-4(WNI)	<b>Meters Feet Spool</b> 100 300ft (A) 300 1000ft (A) 500 1500ft (A) 1000 3000ft (B) 2500 8000ft (B)
				Meters controlling dimension

Order Number				
<u>3</u>	<u>0</u>	<u>0</u>	<u>25</u>	<u>1</u>
Alloy	Shape	Model	Ø Diameter	Length
<b>Code • Description</b> 3 = Gold (Au)	<b>Code Description</b> 0 = Round Wire	<b>Gold Wire (Au)</b> 0 = GSA  Special Order 336 = GSB	<b>µm Mil</b> 12.5 0.5mil 15 0.6mil 18 0.7mil 20 0.8mil 23 0.9mil 25 1.0mil 28 1.1mil 30 1.2mil 32 1.25mil 33 1.3mil 38 1.5mil 50 2.0mil 62.5 2.5mil 65 2.5mil 75 3.0mil	<b>Code Meters Feet</b> 1 = 100m (300ft) 3 = 300m (1000ft) 5 = 500m (1500ft) 6 = 1000m (3000ft) 7 = 2500m (8000ft)
				Meters controlling



# GLD-H Type High Performance Wedge Bonding Wire



Ø Diameter ±1% µm	Breaking Load (gf)	Breaking Load (mN)	Elongation EL (%)	Length Meters	Length Feet	Part Number	Order Nr
Ø 12.5µm (Ø 0.5 mil)	2.4 gf Min	23 mN Min	3.5% max	100m 200m	300ft 600ft	GLD-H-12.5A100 GLD-H-12.5A200	309121 309122
Ø 15µm (Ø 0.6 mil)	3.5 gf Min	34 mN Min	3.5% max	100m 300m	300ft 1000ft	GLD-H-15A100 GLD-H-15A300	309151 309153
Ø 18µm (Ø 0.7 mil)	4.0 gf Min	39 mN Min	3.5% max	25m 50m 100m 300m	75ft 150ft 300ft 1000ft	GLD-H-18H25 GLD-H-18H50 GLD-H-18A100 GLD-H-18A300	309189 309180 309181 309183
Ø 20µm (Ø 0.8 mil)	6.0 gf Min	59 mN Min	3.5% max	25m 50m 100m 300m	75ft 150ft 300ft 1000ft	GLD-H-20H25 GLD-H-20H50 GLD-H-20A100 GLD-H-20A300	309209 309200 309201 309203
Ø 25µm (Ø 1.0 mil)	16 gf Min	156 mN Min	3.5% max	10m 25m 50m 100m 300m 500m	33ft 75ft 150ft 300ft 1000ft 1500ft	GLD-H-25H10 GLD-H-25H25 GLD-H-25H50 GLD-H-25A100 GLD-H-25A300 GLD-H-25A500	309258 309259 309250 309251 309253 309255
Ø 30µm (Ø 1.2 mil)	20 gf Min	196 mN Min	3.5% max	50m 100m 300m	150ft 300ft 1000ft	GLD-H-30H50 GLD-H-30A100 GLD-H-30A300	309300 309301 309303
Ø 32µm (Ø 1.25 mil)	23 gf Min	225 mN Min	3.5% max	50m 100m 300m	150ft 300ft 1000ft	GLD-H-32H50 GLD-H-32A100 GLD-H-32A300	309320 309321 309323
Ø 35µm (Ø 1.4 mil)	27 gf Min	264mN Min	4.5% max	50m 100m 300m	150ft 300ft 1000ft	GLD-H-35H50 GLD-H-35A100 GLD-H-35A300	309350 309351 309353
Ø 50µm (Ø 2.0 mil)	45 gf Min	441 mN Min	4.5% max	50m 100m	150ft 300ft	GLD-H-50H50 GLD-H-50A100	309500 309501

## Spool Information

Type	A Flange Diameter	B Shaft Diameter	C Hub Diameter	D Hub Thickness	E Winding Width	F Overall Width	Style	Part Nr Code
	58.5mm	48.8mm	50.3mm	0.75mm	26.4mm	27.9mm	AL-2(W)	A
	58.5mm	48.8mm	50.3mm	0.75mm	26.4mm	27.9mm	AL-2 WNI Conductive	C
	17.4mm	12.7mm	13.5mm	0.40mm	18.3mm	19.1mm	HALF-INCH	H

Note 1: Round Wire is wound forward/cross pattern (Cross wound-cross hatch wind)

Note 2: Start wire on spool with Green tape. End wire on spool with Red tape.

### INFO

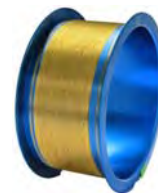
Note 1: For wedge to wedge applications that require maximum 3.5% elongation with Ø18~30µm

Note 2: Excellent breaking load for wedge bonding applications.

Note 3: Standard Tolerance: Ø12.5µm~38µm ±1 µm, Ø50µm ±2 µm

Note 4: Diameter: 12.5µm, 15µm, 18µm, 20µm, 23µm, 25µm, 28µm, 30µm, 32µm, 33µm, 35µm, 50µm

# GLD-H Type High Performance Wedge Bonding Wire

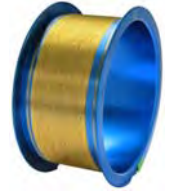


Part Number System																																																									
<u>GLD-H</u>	-	<u>25</u>	<u>A</u>	<u>100</u>																																																					
Type		Ø Diameter µm	Spool Type	Length Meters																																																					
<p><b><u>Gold 4N (Au99.99)</u></b></p> <p>GLD-H = High Performance Wedge Bonding Wire Order# 309XXX</p> <p>GLD- = Standard Wedge Bonding Wire Order# 349XXX</p>		<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Code</th> <th style="text-align: left;">Mil</th> </tr> </thead> <tbody> <tr><td>12.5</td><td>0.5mil</td></tr> <tr><td>15</td><td>0.6mil</td></tr> <tr><td>18</td><td>0.7mil</td></tr> <tr><td>20</td><td>0.8mil</td></tr> <tr><td>23</td><td>0.9mil</td></tr> <tr><td>25</td><td>1.0mil</td></tr> <tr><td>28</td><td>1.1mil</td></tr> <tr><td>30</td><td>1.2mil</td></tr> <tr><td>32</td><td>1.25mil</td></tr> <tr><td>35</td><td>1.4mil</td></tr> <tr><td>38</td><td>1.5mil</td></tr> <tr><td>50</td><td>2.0mil</td></tr> </tbody> </table>	Code	Mil	12.5	0.5mil	15	0.6mil	18	0.7mil	20	0.8mil	23	0.9mil	25	1.0mil	28	1.1mil	30	1.2mil	32	1.25mil	35	1.4mil	38	1.5mil	50	2.0mil	<p><b><u>Aluminum Spool</u></b></p> <p>A = 2"x1" AL-2(W) B = 2"x2" AL-4 H = 1/2" AL-1/2</p> <p><b><u>Conductive Spool</u></b></p> <p>C = 2"x1" AL-2(WNI) N = 2"x2" AL-4(WNI)</p>	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Meters</th> <th style="text-align: left;">Feet</th> <th style="text-align: left;">Spool</th> </tr> </thead> <tbody> <tr><td>10</td><td>33ft</td><td>(H)</td></tr> <tr><td>25</td><td>75ft</td><td>(H)</td></tr> <tr><td>50</td><td>150ft</td><td>(H)</td></tr> <tr><td>100</td><td>300ft</td><td>(A)</td></tr> <tr><td>300</td><td>1000ft</td><td>(A)</td></tr> <tr><td>500</td><td>1500ft</td><td>(A)</td></tr> <tr><td>1000</td><td>3000ft</td><td>(N)</td></tr> <tr><td>2500</td><td>8000ft</td><td>(N)</td></tr> </tbody> </table> <p style="text-align: right;">Meters controlling dimension</p>	Meters	Feet	Spool	10	33ft	(H)	25	75ft	(H)	50	150ft	(H)	100	300ft	(A)	300	1000ft	(A)	500	1500ft	(A)	1000	3000ft	(N)	2500	8000ft	(N)
Code	Mil																																																								
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2500	8000ft	(N)																																																							

Order Number																										
<u>3</u>	<u>0</u>	<u>9</u>	<u>25</u>	<u>1</u>																						
Alloy	Shape	Model	Ø Diameter	Length																						
<p><u>Code • Description</u></p> <p>3 = Gold (Au)</p>	<p><u>Code Description</u></p> <p>0 = Type GLD-H</p> <p>4 = Type GLD Standard Wire</p>	<p><u>Gold Wire (Au)</u></p> <p>9 = GLD-H</p> <p>9 = GLD</p>	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">µm</th> <th style="text-align: left;">Mil</th> </tr> </thead> <tbody> <tr><td>12.5</td><td>0.5mil</td></tr> <tr><td>15</td><td>0.6mil</td></tr> <tr><td>18</td><td>0.7mil</td></tr> <tr><td>20</td><td>0.8mil</td></tr> <tr><td>25</td><td>1.0mil</td></tr> <tr><td>30</td><td>1.2mil</td></tr> <tr><td>32</td><td>1.25mil</td></tr> <tr><td>35</td><td>1.4mil</td></tr> <tr><td>38</td><td>1.5mil</td></tr> <tr><td>50</td><td>2.0mil</td></tr> </tbody> </table>	µm	Mil	12.5	0.5mil	15	0.6mil	18	0.7mil	20	0.8mil	25	1.0mil	30	1.2mil	32	1.25mil	35	1.4mil	38	1.5mil	50	2.0mil	<p><u>Code Meters Feet</u></p> <p><b><u>Half-Inch Spool</u></b></p> <p>8 = 10m (33ft) 9 = 25m (75ft) 0 = 50m (150ft)</p> <p><b><u>2-Inch Spool</u></b></p> <p>1 = 100m (300ft) 3 = 300m (1000ft) 5 = 500m (1500ft) 6 = 1000m (3000ft) 7 = 2500m (8000ft)</p> <p style="text-align: right;">Meters controlling</p>
µm	Mil																									
12.5	0.5mil																									
15	0.6mil																									
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20	0.8mil																									
25	1.0mil																									
30	1.2mil																									
32	1.25mil																									
35	1.4mil																									
38	1.5mil																									
50	2.0mil																									

**Note: 12.5µm and 15µm are not available on Half-Inch Spools**

# GLF Type Super Low Loop Bonding Wire



Ø Diameter ±1% µm	Breaking Load (gf)	Breaking Load (mN)	Elongation EL (%)	Loop Height	Length Meters	Length Feet	Part Number	Order Nr
Ø 15µm (Ø 0.6 mil)	3.1~5.9 gf	30~58 mN	2.0~6.0%	> 30µm	100m 300m 500m	300ft 1000ft 1500ft	GLF-15A100 GLF-15A300 GLF-15A500	307151 307153 307155
Ø 18µm (Ø 0.7 mil)	4.5~8.5 gf	44~83 mN	2.0~6.0%	> 36µm	100m 300m 500m	300ft 1000ft 1500ft	GLF-18A300 GLF-18A300 GLF-18A500	307181 307183 307185
Ø 20µm (Ø 0.8 mil)	5.6~10.5 gf	55~103 mN	2.0~7.0%	> 40µm	100m 300m 500m	300ft 1000ft 1500ft	GLF-20A100 GLF-20A300 GLF-20A500	307201 307203 307205
Ø 25µm (Ø 1.0 mil)	8.7~16.4 gf	85~161 mN	2.0~7.0%	>50µm	100m 300m 500m	300ft 1000ft 1500ft	GLF-25A100 GLF-25A300 GLF-25A500	307251 307253 307255
Ø 30µm (Ø 1.2 mil)	12.5~23.7gf	123~232 mN	2.0~9.0%	> 60µm	100m 300m 500m	300ft 1000ft 1500ft	GLF-30A100 GLF-30A300 GLF-30A500	307301 307303 307305
Ø 38µm (Ø 1.5 mil)	20.1~38.0gf	1197~372 mN	2.0~9.0%	100~220µm	100m 300m 500m	300ft 1000ft 1500ft	GLF-38A100 GLF-38A300 GLF-38A500	307381 307383 307385

## Spool Information

Type	A Flange Diameter	B Shaft Diameter	C Hub Diameter	D Hub Thickness	E Winding Width	F Overall Width	Style	Part Nr Code
	58.5mm	48.8mm	50.3mm	0.75mm	26.4mm	27.9mm	AL-2(W)	A
	58.5mm	48.8mm	50.3mm	0.75mm	26.4mm	27.9mm	AL-2(WNI) Conductive	C
	58.5mm	48.8mm	50.3mm	0.75mm	45.5mm	47.0mm	AL-4(WNI) Conductive	N

Note 1: Round Wire is wound forward/cross pattern (Cross wound-cross hatch wind)

Note 2: Start wire on spool with Green tape.

Note 3: End wire on spool with Red tape.

### INFO

Note 1: For lower loop height applications than conventional low loop wires.

Note 2: 70µm average using Shinkawa UTC-200 ball bonder.

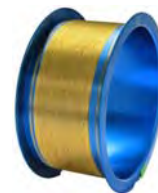
Note 3: Higher pull load than conventional low loop wires. Less damage in neck. Suppression of snake-wire.

Note 4: Standard Tolerance: Ø15µm~30µm ±1 µm

Note 5: Wire Diameter available: 15µm , 18µm , 20µm , 23µm , 25µm , 28µm , 30µm , 32µm , 35µm , 38µm



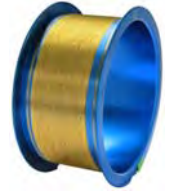
# GLF Type Super Low Loop How to Order



Part Number System				
<u>GLF</u>	-	<u>25</u>	<u>A</u>	<u>100</u>
Type		Ø Diameter µm	Spool Type	Length Meters
<b>Gold 4N (Au99.99)</b> GLF = Super Low Loop Bonding Wire		<b>Code Mil</b>	<b>Aluminum Spool</b>	<b>Meters Feet Spool</b>
		15 0.6mil 18 0.7mil 20 0.8mil 23 0.9mil 25 1.0mil 28 1.1mil 30 1.2mil	A = 2"x1" AL-2(W) B = 2"x2" AL-4  <b>Conductive Spool</b> C = 2"x1" AL-2(WNi) N = 2"x2" AL-4(WNi)	100 300ft (A) 300 1000ft (A) 500 1500ft (A) 1000 3000ft (N) 2500 8000ft (N)
Meters controlling dimension				

Order Number				
<u>3</u>	<u>0</u>	<u>7</u>	<u>25</u>	<u>1</u>
Alloy	Shape	Model	Ø Diameter	Length
<b>Code • Description</b> 3 = Gold (Au)	<b>Code Description</b> 0 = Round Wire	<b>Gold Wire (Au)</b> 7 = GLF	<b>µm Mil</b> 15 0.6mil 18 0.7mil 20 0.8mil 23 0.9mil 25 1.0mil 28 1.1mil 30 1.2mil	<b>Code Meters Feet</b> 1 = 100m (300ft) 3 = 300m (1000ft) 5 = 500m (1500ft) 6 = 1000m (3000ft) 7 = 2500m (8000ft)
Meters controlling				

# GMH-2 Type High Tensile Strength Bonding Wire



Ø Diameter ±1% µm	Breaking Load (gf)	Breaking Load (mN)	Elongation EL (%)	Length Meters	Length Feet	Part Number	Order Nr
Ø 15µm (Ø 0.6 mil)	3.7~6.5 gf	36~64 mN	1.0~7.0%	100m	300ft	GMH2-15A100	302151
				300m	1000ft	GMH2-15A300	302153
				500m	1500ft	GMH2-15A500	302155
Ø 18µm (Ø 0.7 mil)	5.4~9.4 gf	53~92 mN	1.0~7.0%	100m	300ft	GMH2-18A300	302181
				300m	1000ft	GMH2-18A300	302183
				500m	1500ft	GMH2-18A500	302185
Ø 20µm (Ø 0.8 mil)	6.7~11.6 gf	66~99 mN	1.0~7.0%	100m	300ft	GMH2-20A100	302201
				300m	1000ft	GMH2-20A300	302203
				500m	1500ft	GMH2-20A500	302205
Ø 25µm (Ø 1.0 mil)	10.4~18.1 gf	102~178 mN	2.0~7.0%	100m	300ft	GMH2-25A100	302251
				300m	1000ft	GMH2-25A300	302253
				500m	1500ft	GMH2-25A500	302255
Ø 30µm (Ø 1.2 mil)	15.0~26.1gf	147~256 mN	2.0~7.0%	100m	300ft	GMH2-30A100	302301
				300m	1000ft	GMH2-30A300	302303
				500m	1500ft	GMH2-30A500	302305
Ø 32µm (Ø 1.25 mil)	17.0~29.7gf	166~291 mN	2.0~7.0%	100m	300ft	GMH2-32A100	302321
				300m	1000ft	GMH2-32A300	302323
				500m	1500ft	GMH2-32A500	302325
Ø 38µm (Ø 1.50 mil)	24.0~41.9gf	235~410 mN	2.0~8.0%	100m	300ft	GMH2-38A100	302381
				300m	1000ft	GMH2-38A300	302383
				500m	1500ft	GMH2-38A500	302385

## Spool Information

Type	A Flange Diameter	B Shaft Diameter	C Hub Diameter	D Hub Thickness	E Winding Width	F Overall Width	Style	Part Nr Code
	58.5mm	48.8mm	50.3mm	0.75mm	26.4mm	27.9mm	AL-2(W)	A
	58.5mm	48.8mm	50.3mm	0.75mm	26.4mm	27.9mm	AL-2(WNI) Conductive	C
	58.5mm	48.8mm	50.3mm	0.75mm	45.5mm	47.0mm	AL-4(WNI) Conductive	N

Note 1: Round Wire is wound forward/cross pattern (Cross wound-cross hatch wind)

Note 2: Start wire on spool with Green tape.

Note 3: End wire on spool with Red tape.

INFO

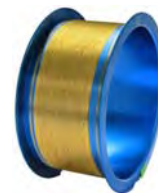
Note 1: High tensile strength for multiple loop profiles used in BGA packages.

Note 2: Excellent bump formation for stack die packages.

Note 3: Standard Tolerance: Ø15µm~30µm ±1 µm

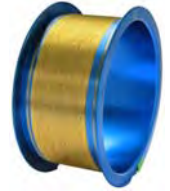
Note 4: Wire Diameter available: 15µm , 18µm , 20µm , 23µm , 25µm , 28µm , 30µm

# GMH-2 Type High Tensile Strength How to Order



Part Number System				
<u>GMH2</u>	-	<u>25</u>	<u>A</u>	<u>100</u>
Type		Ø Diameter µm	Spool Type	Length Meters
<b><u>Gold 4N (Au99.99)</u></b> GMH2 = Super High Tensile Strength Bonding Wire		<b><u>Code</u></b> <b><u>Mil</u></b> 15   0.6mil 18   0.7mil 20   0.8mil 23   0.9mil 25   1.0mil 28   1.1mil 30   1.2mil 32   1.25mil 33   1.3mil 35   1.4mil 38   1.5mil 50   2.0mi	<b><u>Aluminum Spool</u></b> A = 2"x1"   AL-2(W) B = 2"x2"   AL-4  <b><u>Conductive Spool</u></b> C = 2"x1"   AL-2(WNI) N = 2"x2"   AL-4(WNI)	<b><u>Meters</u></b> <b><u>Feet</u></b> <b><u>Spool</u></b> 100   300ft (A) 300   1000ft (A) 500   1500ft (A) 1000   3000ft (N) 2500   8000ft (N)
				Meters controlling dimension

Order Number				
<u>3</u>	<u>0</u>	<u>2</u>	<u>25</u>	<u>1</u>
Alloy	Shape	Model	Ø Diameter	Length
<b><u>Code</u></b> • <b><u>Description</u></b> 3 = Gold (Au)	<b><u>Code</u></b> <b><u>Description</u></b> 0 = Round Wire	<b><u>Gold Wire (Au)</u></b> 2 =GMH-2	<b><u>µm</u></b> <b><u>Mil</u></b> 15   0.6mil 18   0.7mil 20   0.8mil 23   0.9mil 25   1.0mil 28   1.1mil 30   1.2mil 32   1.25mil 33   1.30mil 35   1.40mil 38   1.50mil 50   2.00mil	<b><u>Code</u></b> <b><u>Meters</u></b> <b><u>Feet</u></b> 1 = 100m (300ft) 3 = 300m (1000ft) 5 = 500m (1500ft) 6 = 1000m (3000ft) 7 = 2500m (8000ft)
				Meters controlling



Ø Diameter ±1% µm	Breaking Load (gf)	Breaking Load (mN)	Elongation EL (%)	Length Meters	Length Feet	Part Number	Order Nr
Ø 15µm (Ø 0.6 mil)	3.5~6.3 gf	34~62 mN	1.0~7.0%	100m 300m 500m	300ft 1000ft 1500ft	GPG2-15A100 GPG2-15A300 GPG2-15A500	304151 304153 304155
Ø 18µm (Ø 0.7 mil)	5.0~9.0 gf	49~88 mN	1.0~7.0%	100m 300m 500m	300ft 1000ft 1500ft	GPG2-18A100 GPG2-18A300 GPG2-18A500	304181 304183 304185
Ø 20µm (Ø 0.8 mil)	6.2~11.1 gf	61~109 mN	1.0~7.0%	100m 300m 500m	300ft 1000ft 1500ft	GPG2-20A100 GPG2-20A300 GPG2-20A500	304201 304203 304205
Ø 25µm (Ø 1.0 mil)	9.7~17.4 gf	95~171 mN	2.0~7.0%	100m 300m 500m	300ft 1000ft 1500ft	GPG2-25A100 GPG2-25A300 GPG2-25A500	304251 304253 304255
Ø 30µm (Ø 1.2 mil)	13.9~25.1gf	123~232 mN	2.0~7.0%	100m 300m 500m	300ft 1000ft 1500ft	GPG2-30A100 GPG2-30A300 GPG2-30A500	304301 304303 304305
Ø 32µm (Ø 1.25 mil)	15.8~28.5gf	155~279 mN	2.0~7.0%	100m 300m 500m	300ft 1000ft 1500ft	GPG2-32A100 GPG2-32A300 GPG2-32A500	304321 304323 304325
Ø 33µm (Ø 1.3 mil)	16.8~30.3gf	164~297 mN	2.0~7.0%	100m 300m 500m	300ft 1000ft 1500ft	GPG2-33A100 GPG2-33A300 GPG2-33A500	304331 304333 304335
Ø 35µm (Ø 1.4 mil)	19.0~34.1gf	186~334 mN	2.0~8.0%	100m 300m 500m	300ft 1000ft 1500ft	GPG2-35A100 GPG2-35A300 GPG2-35A500	304351 304353 304355
Ø 38µm (Ø 1.5 mil)	22.3~40.2gf	219~394 mN	2.0~8.0%	100m 300m 500m	300ft 1000ft 1500ft	GPG2-38A100 GPG2-38A300 GPG2-38A500	304381 304383 304385

## Spool Information

Type	A Flange Diameter	B Shaft Diameter	C Hub Diameter	D Hub Thickness	E Winding Width	F Overall Width	Style	Part Nr Code
	58.5mm	48.8mm	50.3mm	0.75mm	26.4mm	27.9mm	AL-2(W)	A
	58.5mm	48.8mm	50.3mm	0.75mm	26.4mm	27.9mm	AL-2(WNI) Conductive	C
	58.5mm	48.8mm	50.3mm	0.75mm	45.5mm	47.0mm	AL-4(WNI) Conductive	N

Note 1: Round Wire is wound forward/cross pattern (Cross wound-cross hatch wind)

Note 2: Start wire on spool with Green tape. End wire on spool with Red tape.

### INFO

Note 1: Gold Alloy 2N (Au99% - Pd 1%)

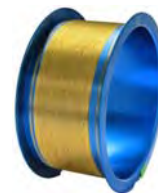
Note 2: High bond reliability and good match for mold compound with halogen.

Note 3: Good squashed ball.

Note 4: Standard Tolerance: Ø15µm~30µm ±1 µm

Note 5: Wire Diameter available: 15µm , 18µm , 20µm , 23µm , 25µm , 28µm , 30µm , 32µm , 33µm , 38µm

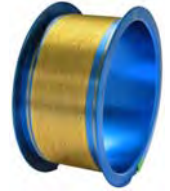
# GPG-2 Type High Reliability Bonding How to Order



Part Number System				
<u>GPG2</u>	-	<u>25</u>	<u>A</u>	<u>100</u>
Type		Ø Diameter µm	Spool Type	Length Meters
<u>Gold 2N (Au99-Pd1)</u> GPG-2 = Super High Reliability Bonding Wire		<u>Code Mil</u> 15 0.6mil 18 0.7mil 20 0.8mil 23 0.9mil	<u>Aluminum Spool</u> A = 2"x1" AL-2(W) B = 2"x2" AL-4	<u>Meters Feet Spool</u> 100 300ft (A) 300 1000ft (A) 500 1500ft (A) 1000 3000ft (N) 2500 8000ft (N)
<u>Other Models</u> GPG GPG-3		25 1.0mil 28 1.1mil 30 1.2mil	<u>Conductive Spool</u> C = 2"x1" AL-2(WN1) N = 2"x2" AL-4(WN1)	Meters controlling dimension

Order Number				
<u>3</u>	<u>0</u>	<u>4</u>	<u>25</u>	<u>1</u>
Alloy	Shape	Model	Ø Diameter	Length
<u>Code • Description</u> 3 = Gold (Au)	<u>Code Description</u> 0 = Round Wire	<u>Gold Wire (Au)</u> 4 =GPG-2	<u>µm Mil</u> 15 0.6mil 18 0.7mil 20 0.8mil 23 0.9mil 25 1.0mil 28 1.1mil 30 1.2mil 32 1.25mil 33 1.3mil 35 1.4mil 38 1.5mil	<u>Code Meters Feet</u> 1 = 100m (300ft) 3 = 300m (1000ft) 5 = 500m (1500ft) 6 = 1000m (3000ft) 7 = 2500m (8000ft)  Meters controlling
		<u>Other Models</u> 35 = GPG 41 =GPG-3		

# GPH Type High Reliability Bonding Wire



Ø Diameter ±1% µm	Breaking Load (gf)	Breaking Load (mN)	Elongation EL (%)	Length Meters	Length Feet	Part Number	Order Nr
Ø 15µm (Ø 0.6 mil)	3.3~6.1 gf	32~60 mN	1.0~7.0%	100m 300m 500m	300ft 1000ft 1500ft	GPH-15A100 GPH-15A300 GPH-15A500	308151 308153 308155
Ø 18µm (Ø 0.7 mil)	4.8~8.8 gf	47~86 mN	1.0~7.0%	100m 300m 500m	300ft 1000ft 1500ft	GPH-18A100 GPH-18A300 GPH-18A500	308181 308183 308185
Ø 20µm (Ø 0.8 mil)	5.9~10.8 gf	58~106 mN	1.0~7.0%	100m 300m 500m	300ft 1000ft 1500ft	GPH-20A100 GPH-20A300 GPH-20A500	308201 308203 308205
Ø 25µm (Ø 1.0 mil)	9.2~16.9 gf	90~166 mN	2.0~8.0%	100m 300m 500m	300ft 1000ft 1500ft	GPH-25A100 GPH-25A300 GPH-25A500	308251 308253 308255
Ø 30µm (Ø 1.2 mil)	13.2~24.4gf	129~239 mN	2.0~8.0%	100m 300m 500m	300ft 1000ft 1500ft	GPH-30A100 GPH-30A300 GPH-30A500	308301 308303 308305
Ø 32µm (Ø 1.25 mil)	15.1~27.7gf	148~272 mN	2.0~8.0%	100m 300m 500m	300ft 1000ft 1500ft	GPH-32A100 GPH-32A300 GPH-32A500	308321 308323 308325
Ø 35µm (Ø 1.4 mil)	18.0~33.2gf	177~326 mN	2.0~8.0%	100m 300m 500m	300ft 1000ft 1500ft	GPH-35A100 GPH-35A300 GPH-35A500	308351 308353 308355
Ø 38µm (Ø 1.5 mil)	21.2~39.1gf	208~383 mN	2.0~8.0%	100m 300m 500m	300ft 1000ft 1500ft	GPH-38A100 GPH-38A300 GPH-38A500	308381 308383 308385

## Spool Information

Type	A Flange Diameter	B Shaft Diameter	C Hub Diameter	D Hub Thickness	E Winding Width	F Overall Width	Style	Part Nr Code
	58.5mm	48.8mm	50.3mm	0.75mm	26.4mm	27.9mm	AL-2(W)	A
	58.5mm	48.8mm	50.3mm	0.75mm	26.4mm	27.9mm	AL-2(WNI) Conductive	C
	58.5mm	48.8mm	50.3mm	0.75mm	45.5mm	47.0mm	AL-4(WNI) Conductive	N

Note 1: Round Wire is wound forward/cross pattern (Cross wound-cross hatch wind)

Note 2: Start wire on spool with Green tape. End wire on spool with Red tape.

INFO

Note 1: Gold Alloy 2N (Au99%-X-Rich)

Note 2: Higher bond reliability and good character for halogen free mold compound.

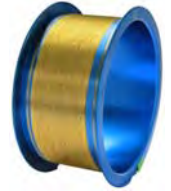
Note 3: Good squashed ball.

Note 4: Standard Tolerance: Ø15µm~30µm ±1 µm

Note 5: Wire Diameter available: 15µm , 18µm , 20µm , 23µm , 25µm , 28µm , 30µm , 32µm , 33µm , 35µm , 38µm



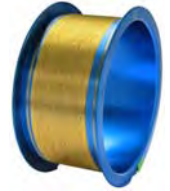
# GPH Type High Reliability Bonding How to Order



Part Number System				
<u>GPH</u>	-	<u>25</u>	<u>A</u>	<u>100</u>
Type		Ø Diameter µm	Spool Type	Length Meters
<b>Gold 2N (Au99-x)</b> GPH= High Reliability Bonding Wire		<u>Code</u> <u>Mil</u> <b>15</b> 0.6mil <b>18</b> 0.7mil <b>20</b> 0.8mil <b>23</b> 0.9mil <b>25</b> 1.0mil <b>28</b> 1.1mil <b>30</b> 1.2mil	<u>Aluminum Spool</u> <b>A</b> = 2"x1" AL-2(W) <b>B</b> = 2"x2" AL-4  <u>Conductive Spool</u> <b>C</b> = 2"x1" AL-2(WNI) <b>N</b> = 2"x2" AL-4(WNI)	<u>Meters</u> <u>Feet</u> <u>Spool</u> <b>100</b> 300ft (A) <b>300</b> 1000ft (A) <b>500</b> 1500ft (A) <b>1000</b> 3000ft (N) <b>2500</b> 8000ft (N)
				Meters controlling dimension

Order Number				
<u>3</u>	<u>0</u>	<u>8</u>	<u>25</u>	<u>1</u>
Alloy	Shape	Model	Ø Diameter	Length
<u>Code</u> • <u>Description</u> <b>3</b> = Gold (Au)	<u>Code</u> <u>Description</u> <b>0</b> = Round Wire	<u>Gold Wire (Au)</u> <b>8</b> =GPH	<u>µm</u> <u>Mil</u> <b>15</b> 0.6mil <b>18</b> 0.7mil <b>20</b> 0.8mil <b>23</b> 0.9mil <b>25</b> 1.0mil <b>28</b> 1.1mil <b>30</b> 1.2mil	<u>Code</u> <u>Meters</u> <u>Feet</u> <b>1</b> = 100m (300ft) <b>3</b> = 300m (1000ft) <b>5</b> = 500m (1500ft) <b>6</b> = 1000m (3000ft) <b>7</b> = 2500m (8000ft)
				Meters controlling

# M3 Type Gold 4N (Au) Manual Bonder Wire



Ø Diameter ±1% µm	Breaking Load (gf)	Breaking Load (mN)	Elongation EL (%)	Length Meters	Length Feet	Part Number	Order Nr
Ø 12.5µm (Ø 0.5 mil)	1.4 gf Min	14 mN Min	1.0~6.0%	100m 200m	300ft 600ft	M3-12.5A100 M3-12.5A200	303121 303122
Ø 15µm (Ø 0.6 mil)	2.0 gf Min	19.6 mN Min	1.0~6.0%	100m 300m	300ft 1000ft	M3-15A100 M3-15A300	303151 303153
Ø 18µm (Ø 0.7 mil)	4.6~7.1 gf	44~73 mN	12.0~6.0%	100m 300m	300ft 1000ft	M3-18A100 M3-18A300	303181 303183
Ø 20µm (Ø 0.8 mil)	5.7~8.8 gf	56~86 mN	2.0~6.0%	25m 50m 100m	75ft 150ft 300ft	M3-20H25 M3-20H50 M3-20A100	303209 303200 303201
Ø 25µm (Ø 1.0 mil)	8.9~13.8 gf	87~135 mN	2.0~7.0%	25m 50m 100m 300m	75ft 150ft 300ft 1000ft	M3-25H25 M3-25H50 M3-25A100 M3-25A300	303259 303250 303251 303253
Ø 30µm (Ø 1.2 mil)	12.9~19.8 gf	127~194 mN	2.0~9.0%	25m 50m 100m	150ft 150ft 300ft	M3-30H25 M3-30H50 M3-30A100	303309 303300 303301
Ø 32µm (Ø 1.25 mil)	14.7~22.6 gf	144~222 mN	2.0~9.0%	25m 50m 100m	75ft 150ft 300ft	M3-32H25 M3-32H50 M3-32A100	303329 303320 303321
Ø 33µm (Ø 1.3 mil)	15.6~24.0 gf	153~235 mN	2.0~9.0%	25m 50m 100m	75ft 150ft 300ft	M3-33H25 M3-33H50 M3-33A100	303339 303330 303331
Ø 35µm (Ø 1.4 mil)	17.5~27.0 gf	172~265 mN	3.0~9.0%	25m 50m 100m	75ft 150ft 300ft	M3-35H25 M3-35H50 M3-35A100	303359 303350 303351
Ø 38µm (Ø 1.5 mil)	20.7~31.8 gf	203~312 mN	4.0~12.0%	25m 50m 100m	75ft 150ft 300ft	M3-38H25 M3-38H50 M3-38A100	303389 303380 303381
Ø 50µm (Ø 2.0 mil)	35.8~55.1 gf	351~541 mN	4.0~15.0%	25m 50m 100m	75ft 150ft 300ft	M3-50H25 M3-50H50 M3-50A100	303509 303500 303501

## Spool Information

Type	A Flange Diameter	B Shaft Diameter	C Hub Diameter	D Hub Thickness	E Winding Width	F Overall Width	Style	Part Nr Code
	58.5mm	48.8mm	50.3mm	0.75mm	26.4mm	27.9mm	AL-2(W)	A
	58.5mm	48.8mm	50.3mm	0.75mm	26.4mm	27.9mm	AL-2(WNI) Conductive	C
	58.5mm	48.8mm	50.3mm	0.75mm	45.5mm	47.0mm	AL-4(WNI) Conductive	N
	17.4mm	12.7mm	13.5mm	0.40mm	18.3mm	19.1mm	HALF-INCH	H

Note 1: Round Wire is wound forward/cross pattern (Cross wound-cross hatch wind)

Note 2: Start wire on spool with Green tape. End wire on spool with Red tape.

INFO

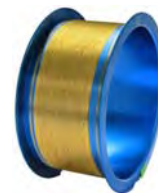
Note 1: Bold wire for ball and wedge bonding on manual bonder.

Note 2: Good 2nd bond stitch remaining after pull test. Good squashed ball shape.

Note 3: Standard Tolerance: Ø12.5µm~38µm ±1 µm , Ø50µm ±2 µm

Note 4: Wire Diameter available: 12.5µm , 15µm,18µm, 20µm, 25µm , 30µm , 32µm , 33µm ,35µm , 38µm , 50µm

# M3 Type How to Order

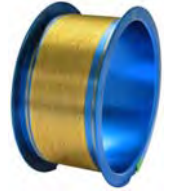


Part Number System				
<u>M3</u>	-	<u>25</u>	<u>A</u>	<u>100</u>
Type		Ø Diameter µm	Spool Type	Length Meters
<b>Gold 4N (Au99.99)</b> M3 = Manual Bonders Gold Wire Bonding Wire		<u>Code</u> <u>Mil</u> 20 0.8mil 23 0.9mil 25 1.0mil 28 1.1mil 30 1.2mil 32 1.25mil 38 1.5mil	<u>Aluminum Spool</u> A = 2"x1" AL-2(W) B = 2"x2" AL-4 H = 1/2"x3/4" HALF  <u>Conductive Spool</u> C = 2"x1" AL-2(WNI) N = 2"x2" AL-4(WNI)	<u>Meters</u> <u>Feet</u> <u>Spool</u> 25 75ft (H) 50 150ft (H)  100 300ft (A) 300 1000ft (A) 500 1500ft (A) 1000 3000ft (N) 2500 8000ft (N)
	Meters controlling dimension			

Order Number				
<u>3</u>	<u>0</u>	<u>3</u>	<u>25</u>	<u>1</u>
Alloy	Shape	Model	Ø Diameter	Length
<u>Code</u> • <u>Description</u> 3 = Gold (Au)	<u>Code</u> <u>Description</u> 0 = Round Wire	<u>Gold Wire (Au)</u> 3 = M3	<u>µm</u> <u>Mil</u> 12.5 0.5mil 15 0.6mil 18 0.7mil 20 0.8mil 23 0.9mil 25 1.0mil 28 1.1mil 30 1.2mil 32 1.25mil 33 1.3mil 35 1.4mil 38 1.5mil 50 2.0mil	<u>Code</u> <u>Meters</u> <u>Feet</u> <u>Half-Inch Spool</u> 9 = 25m (75ft) 0 = 50m (150ft)  <u>2-Inch Spool</u> 1 = 100m (300ft) 3 = 300m (1000ft) 5 = 500m (1500ft) 6 = 1000m (3000ft) 7 = 2500m (8000ft)  Meters controlling

**Note: 12.5µm and 15µm are not available on Half-Inch Spools**

# GBC Type Gold 2N (Au) Bumping Wire



Ø Diameter ±1% µm	Breaking Load (gf)	Breaking Load (mN)	Elongation EL (%)	Length Meters	Length Feet	Part Number	Order Nr	
Ø 15µm (Ø 0.6 mil)	>5.2 gf	>51 mN	1.5~4.0%	100m	300ft	GBC-15A100	305151	
				300m	1000ft		GBC-15A300	305153
				500m	1500ft		GBC-15A500	305155
Ø 18µm (Ø 0.7 mil)	>8.2 gf	>80 mN	1.5~4.0%	100m	300ft	GBC-18A100	305181	
				300m	1000ft		GBC-18A300	305183
				500m	1500ft		GBC-18A500	305185
Ø 20µm (Ø 0.8 mil)	>9.3 gf	>91 mN	1.5~4.0%	100m	300m	GBC-20A100	305201	
				300m	1000ft		GBC-20A300	305203
				500m	1500ft		GBC-20A500	305205
Ø 25µm (Ø 1.0 mil)	>14.5 gf	>142 mN	1.5~5.0%	100m	300ft	GBC-25A100	305251	
				300m	1000ft		GBC-25A300	305253
				500m	1500ft		GBC-25A500	305255
Ø 30µm (Ø 1.2 mil)	>20.9 gf	<205 mN	1.5~5.0%	100m	300ft	GBC-30A100	305301	
				300m	1000ft		GBC-30A300	305303
				500m	1500ft		GBC-30A500	305305
Ø 32µm (Ø 1.25 mil)	>23.8 gf	>233 mN	1.5~5.0%	100m	300ft	GBC32A100	305321	
				300m	1000ft		GBC-32A300	305323
				500m	1500ft		GBC-32A500	305325
Ø 35µm (Ø 1.4 mil)	>28.4 gf	>279 mN	1.5~6.0%	100m	300ft	GBC32A100	305321	
				300m	1000ft		GBC-32A300	305323
				500m	1500ft		GBC-32A500	305325
Ø 38µm (Ø 1.5 mil)	>33.5 gf	>329 mN	1.5~6.0%	100m	300ft	GBC-38A100	305381	
				300m	1000ft		GBC-38A300	305383
				500m	1500ft		GBC-38A500	305385

## Spool Information

Type	A Flange Diameter	B Shaft Diameter	C Hub Diameter	D Hub Thickness	E Winding Width	F Overall Width	Style	Part Nr Code
	58.5mm	48.8mm	50.3mm	0.75mm	26.4mm	27.9mm	AL-2(W)	A
	58.5mm	48.8mm	50.3mm	0.75mm	26.4mm	27.9mm	AL-2(WNI) Conductive	C
	58.5mm	48.8mm	50.3mm	0.75mm	45.5mm	47.0mm	AL-4	B
	58.5mm	48.8mm	50.3mm	0.75mm	45.5mm	47.0mm	AL-4(WNI) Conductive	N

Note 1: Round Wire is wound forward/cross pattern (Cross wound-cross hatch wind)

Note 2: Start wire on spool with Green tape. End wire on spool with Red tape.

### INFO

Note 1: Use with bonder such as Shinkawa SBB-1 or equivalent.

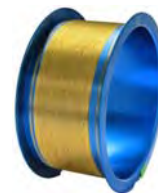
Note 2: Minimal deviation of ball neck height after bumping with steady bump shape.

Note 3: Low deterioration of shear strength during aging test at 200°C.

Note 4: Standard Tolerance: Ø15µm~38µm ±1 µm

Note 5: Wire Diameter available: 15µm , 18µm , 20µm , 23µm , 25µm , 28µm , 30µm , 32µm , 35µm , 38µm

# GBC Type How to Order



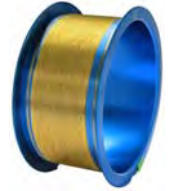
Part Number System				
<u>GBC</u>	-	<u>25</u>	<u>A</u>	<u>100</u>
Type		Ø Diameter µm	Spool Type	Length Meters
<b>Gold 2N (Au99-Pd1)</b> GBC = Bumping Wire		<b>Code Mil</b> 15 0.6mil 18 0.7mil 20 0.8mil 23 0.9mil 25 1.0mil 28 1.1mil 30 1.2mil 32 1.25mil 35 1.4mil 38 1.5mil	<b>Aluminum Spool</b> A = 2"x1" AL-2(W) B = 2"x2" AL-4  <b>Conductive Spool</b> C = 2"x1" AL-2(WN1) N = 2"x2" AL-4(WN1)	<b>Meters Feet Spool</b> 100 300ft (A) 300 1000ft (A) 500 1500ft (A) 1000 3000ft (N) 2500 8000ft (N)  Meters controlling dimension

Order Number				
<u>3</u>	<u>0</u>	<u>5</u>	<u>25</u>	<u>1</u>
Alloy	Shape	Model	Ø Diameter	Length
<b>Code • Description</b> 3 = Gold (Au) 2N	<b>Code Description</b> 0 = Round Wire	<b>Gold Wire (Au)</b> 5 = GBC	<b>µm Mil</b> 15 0.6mil 18 0.7mil 20 0.8mil 23 0.9mil 25 1.0mil 28 1.1mil 30 1.2mil 32 1.25mil 35 1.4mil 38 1.5mil	<b>Code Meters Feet</b> 1 = 100m (300ft) 3 = 300m (1000ft) 5 = 500m (1500ft) 6 = 1000m (3000ft) 7 = 2500m (8000ft) 8 = 5000m (16000ft) 9 = other  Meters controlling

### Explanation of difference between Gold Bump Wire and Gold Bonding Wire.

Note	Feature	Bump Wire	Bonding Wire
1	Number of Bonds	One Bond Only To Die Pad or Substrate	Two Bonds From Die Pad to Package.
2	Purpose/Application	Single Au (gold) wire is squashed. Wire is then reflowed (melted) to form a bump for a flip chip.	Bonding from the die to the leadframe (or substrate) with a loop (wedge or stitch).
3	Repeatable Wire Break	Bumping wire is intended to break close to neck area of first bond.	Bonding wire has a longer HAZ ( <i>heat affected zone</i> ) to permit the wire to be kinked or looped and pan out for next bond (wedge or stitch)
4	Grain Structure	Dopants added for grain structure during annealing process to allow repeatable wire break after the stud bump formation to make wire softer for wire cut/break mode.	Grain structure in bonding wire enables formation of loop or kink.

# GBE Type Gold 4N (Au) Bumping Wire



Ø Diameter ±1% µm	Breaking Load (gf)	Breaking Load (mN)	Elongation EL (%)	Length Meters	Length Feet	Part Number	Order Nr
Ø 15µm (Ø 0.6 mil)	>4.5 gf	>44mN	1.5~4.0%	100m 300m 500m	300ft 1000ft 1500ft	GBE-15A100 GBE-15A300 GBE-15A500	301151 301153 301155
Ø 18µm (Ø 0.7 mil)	>6.5 gf	>64mN	1.5~4.0%	100m 300m 500m	300ft 1000ft 1500ft	GBE-18A100 GBE-18A300 GBE-18A500	301181 301183 301185
Ø 20µm (Ø 0.8 mil)	>8.0 gf	>78 mN	1.5~4.0%	100m 300m 500m	300ft 1000ft 1500ft	GBE-20A100 GBE-20A300 GBE-20A500	301201 301203 301205
Ø 25µm (Ø 1.0 mil)	>14.0 gf	>138 mN	1.0~5.0%	100m 300m 500m	300ft 1000ft 1500ft	GBE-25A100 GBE-25A300 GBE-25A500	301251 301253 301255
Ø 30µm (Ø 1.2 mil)	>18.1 gf	>178 mN	1.5~5.0%	100m 300m 500m	300ft 1000ft 1500ft	GBE-30A100 GBE-30A300 GBE-30A500	301301 301303 301305
Ø 32µm (Ø 1.25 mil)	>20.6 gf	>202 mN	1.5~5.0%	100m 300m 500m	1000ft 1000ft 1500ft	GBE-32A100 GBE-32A300 GBE-32A500	301321 301323 301325
Ø 35µm (Ø 1.4 mil)	>24.6 gf	>241 mN	1.5~6.0%	100m 300m 500m	1000ft 1000ft 1500ft	GBE-35A100 GBE-35A300 GBE-35A500	301351 301353 301355
Ø 38µm (Ø 1.5 mil)	>29.0 gf	>284 mN	1.5~6.0%	100m 300m 500m	1000ft 1000ft 1500ft	GBE-38A100 GBE-38A300 GBE-38A500	301381 301383 301385

## Spool Information

Type	A Flange Diameter	B Shaft Diameter	C Hub Diameter	D Hub Thickness	E Winding Width	F Overall Width	Style	Part Nr Code
	58.5mm	48.8mm	50.3mm	0.75mm	26.4mm	27.9mm	AL-2(W)	A
	58.5mm	48.8mm	50.3mm	0.75mm	26.4mm	27.9mm	AL-2(WNI) Conductive	C
	58.5mm	48.8mm	50.3mm	0.75mm	45.5mm	47.0mm	AL-4(W)	B
	58.5mm	48.8mm	50.3mm	0.75mm	45.5mm	47.0mm	AL-4(WNI) Conductive	N

Note 1: Round Wire is wound forward/cross pattern (Cross wound-cross hatch wind)

Note 2: Start wire on spool with Green tape. End wire on spool with Red tape.

### INFO

Note 1: Use with bonder such as Shinkawa SBB-1 or equivalent.

Note 2: Minimal deviation of ball neck height after bumping with steady bump shape.

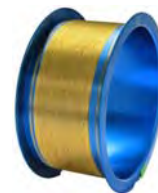
Note 3: Low deterioration of shear strength during aging test at 200°C. No bond pad damage after bonding.

Note 4: Standard Tolerance: Ø15µm~38µm ±1 µm

Note 5: Wire Diameter available: 15µm , 18µm , 20µm , 23µm , 25µm , 28µm , 30µm , 32µm , 35µm , 38µm



# GBE Type How to Order



Part Number System				
<u>GBE</u>	-	<u>25</u>	<u>A</u>	<u>100</u>
Type		Ø Diameter µm	Spool Type	Length Meters
<u>Gold 4N (Au100)</u> GBE = Bumping Wire		<u>Code</u> <u>Mil</u> 15 0.6mil 18 0.7mil 20 0.8mil 23 0.9mil 25 1.0mil 28 1.1mil 30 1.2mil 32 1.25mil 35 1.4mil 38 1.5mil	<u>Aluminum Spool</u> A = 2"x1" AL-2(W) B = 2"x2" AL-4  <u>Conductive Spool</u> C = 2"x1" AL-2(WNI) N = 2"x2" AL-4(WNI)	<u>Meters</u> <u>Feet</u> <u>Spool</u> 100 300ft (A) 300 1000ft (A) 500 1500ft (A) 1000 3000ft (N) 2500 8000ft (N)
				Meters controlling dimension

Order Number				
<u>3</u>	<u>0</u>	<u>1</u>	<u>25</u>	<u>1</u>
Alloy	Shape	Model	Ø Diameter	Length
<u>Code</u> • <u>Description</u> 3 = Gold (Au) 4N	<u>Code</u> <u>Description</u> 0 = Round Wire	<u>Gold Wire (Au)</u> 1 = GBE	<u>µm</u> <u>Mil</u> 15 0.6mil 18 0.7mil 20 0.8mil 23 0.9mil 25 1.0mil 28 1.1mil 30 1.2mil 32 1.25mil 35 1.4mil 38 1.5mil	<u>Code</u> <u>Meters</u> <u>Feet</u> 1 = 100m (300ft) 3 = 300m (1000ft) 5 = 500m (1500ft) 6 = 1000m (3000ft) 7 = 2500m (8000ft) 9 = other
				Meters controlling

### Explanation of difference between Gold Bump Wire and Gold Bonding Wire.

Note	Feature	Bump Wire	Bonding Wire
1	Number of Bonds	One Bond Only To Die Pad or Substrate	Two Bonds From Die Pad to Package.
2	Purpose/Application	Single Au (gold) wire is squashed. Wire is then reflowed (melted) to form a bump for a flip chip.	Bonding from the die to the leadframe (or substrate) with a loop (wedge or stitch).
3	Repeatable Wire Break	Bumping wire is intended to break close to neck area of first bond.	Bonding wire has a longer HAZ ( <i>heat affected zone</i> ) to permit the wire to be kinked or looped and pan out for next bond (wedge or stitch)
4	Grain Structure	Dopants added for grain structure during annealing process to allow repeatable wire break after the stud bump formation to make wire softer for wire cut/break mode.	Grain structure in bonding wire enables formation of loop or kink.

# Y-Type High Power Gold 4N (Au) Heavy Wire



Ø Diameter ±3~5% µm	Breaking Load (gf)	Breaking Load (mN)	Elongation EL (%)	Length Meters	Length Feet	Part Number	Order Nr
Ø 62.5µm (Ø 2.5 mil)	49.3~80.2 gf	486~386 mN	2.0~12%	100m	320ft	Y-62.5B100	331631
Ø 65µm (Ø 2.5 mil)	53.4~86.6 gf	527~856 mN	2.0~12%	100m	320ft	Y-65B100	331651
Ø 75µm (Ø 3.0 mil)	70.7~114.9 gf	699~1134 mN	2.0~12%	100m	320ft	Y-75B100	331751
Ø 100µm (Ø 4.0 mil)	-	-	-	50m 100m	160ft 320ft	Y-100P50 Y-100P100	331000 331001
Ø 125µm (Ø 5.0 mil)	-	-	-	25m 50m 100m	80ft 160ft 320ft	Y-125P25 Y-125P50 Y-125P100	331019 331010 331011
Ø 150µm (Ø 6.03 mil)	-	-	-	25m 50m 100m	80ft 160ft 320ft	Y-150P25 Y-150P50 Y-150P100	331029 331020 331021
Ø 200µm (Ø 8.0 mil)	-	-	-	25m 50m	80ft 160ft	Y-200P25 Y-200P50	331049 331040
Ø 250µm (Ø10.0 mil)	-	-	-	10m 25m 50m	32ft 80ft 160ft	Y-250P10 Y-250P25 Y-250P50	331057 331059 331050
Ø 500µm (Ø20.0 mil)	-	-	-	10m 25m	32ft 80ft	Y-SR-500P10 Y-SR-500P25	331118 331119

## Spool Information

Type	A Flange Diameter	B Shaft Diameter	C Hub Diameter	D Hub Thickness	E Winding Width	F Overall Width	Style	Part Nr Code
	58.5mm	48.8mm	50.3mm	0.75mm	45.5mm	47.0mm	AL-4	B
	88mm 4.5"	10mm 0.394"	50mm 2.0"	3.0mm 0.12"	25mm 1.0"	31mm 1.25"	No.88	P

Note 1: Round Wire is wound forward/cross pattern (Cross wound-cross hatch wind)

Note 2: Start wire on spool with Green tape. End wire on spool with Red tape.

### INFO

Note 1: For wedge to wedge high power bonding.

Note 2: Standard Tolerance: Ø60~100µm ±3µm, Ø125~150µm ±5µm, Ø200µm ±7µm, Ø250~500µm ±10µm

Note 3: Wire Diameter available: 65µm, 75µm, 100µm, 127µm, 150µm, 175µm, 200µm, 250µm, 500µm

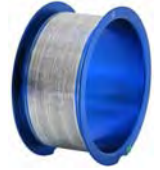
# Y-Type How to Order



Part Number System				
<u>Y</u>	-	<u>100</u>	<u>P</u>	<u>100</u>
Type		Ø Diameter µm	Spool Type	Length Meters
<b>Gold 4N (Au99.99)</b>  Y = Wedge to Wedge High Power Bonders Bonding Wire		<u>Code</u> <u>Mil</u> 62.5 2.5mil 65 2.5mil 75 3.0mil 100 4.0mil 127 5.0mil 150 6.0mil 178 7.0mil 203 8.0mil 254 10mil 500 20mil	<b>Aluminum Spool</b> B = 2"x2" AL-4  <b>Polycarbonate Spool</b> P = Ø 88mm x 31mm Ø 3.5" x 1.25" No.88	<u>Meters</u> <u>Feet</u> <u>Spool</u> 62.5~ 75um (2.5~3.0MIL) 100 300ft (B)  100~500um (4.0~20MIL) 100 300ft (P)  Meters controlling dimension

Order Number				
<u>3</u>	<u>3</u>	<u>1</u>	<u>00</u>	<u>1</u>
Alloy	Shape	Model	Ø Diameter	Length
<u>Code • Description</u> 3 = Gold (Au)	<u>Code</u> <u>Description</u> 3 = Round Wire	<u>Gold Wire (Au)</u> 1 = Y	<u>Code</u> <u>µm</u> <u>Mil</u> 63 62.5um 2.5mil 65 65um 2.5mil 75 75um 3mil 00 100um 4mil 01 127um 5mil 02 150um 6mil 03 178um 7mil 04 203um 8mil 05 254um 10mil 11 500um 20mil	<u>Code</u> <u>Meters</u> <u>Feet</u> 5 = 5m (16ft) 7 = 10m (32ft) 9 = 25m (80ft) 0 = 50m (150ft) 1 = 100m (300ft)  Meters controlling

# SEA Type Silver (Ag) Bonding Wire



Ø Diameter ±1% µm	Breaking Load (gf)	Breaking Load (mN)	Elongation EL (%)	Length Meters	Length Feet	Part Number	Order Nr
Ø 15µm (Ø 0.6 mil)	2.8~5.6 gf	27~55mN	1.0~8.0%	100m 300m 500m	300ft 1000ft 1500ft	SEA-15A100 SEA-15A300 SEA-15A500	501151 501153 501155
Ø 18µm (Ø 0.7 mil)	4.1~8.0 gf	40~78mN	1.0~8.0%	100m 300m 500m	300ft 1000ft 1500ft	SEA-18A100 SEA-18A300 SEA-18A500	501181 501183 501185
Ø 20µm (Ø 0.8 mil)	5.1~10.0 gf	50~98mN	1.0~8.0%	100m 300m 500m	300ft 1000ft 1500ft	SEA-20A100 SEA-20A300 SEA-20A500	501201 501203 501205
Ø 25µm (Ø 1.0 mil)	7.8~15.4 gf	76~151 mN	1.0~8.0%	100m 300m 500m	300ft 1000ft 1500ft	SEA-25A100 SEA-25A300 SEA-25A500	501251 501253 501255
Ø 30µm (Ø 1.2 mil)	11.1~21.9 gf	109~215 mN	1.0~10.0%	100m 300m 500m	300ft 1000ft 1500ft	SEA-30A100 SEA-30A300 SEA-30A500	501301 501303 501305

## Spool Information

Type	A Flange Diameter	B Shaft Diameter	C Hub Diameter	D Hub Thickness	E Winding Width	F Overall Width	Style	Part Nr Code
	58.5mm	48.8mm	50.3mm	0.75mm	26.4mm	27.9mm	AL-2(W)	A
	58.5mm	48.8mm	50.3mm	0.75mm	45.5mm	47.0mm	AL-4(WNI)	N

Note 1: Round Wire is wound forward/cross pattern (Cross wound-cross hatch wind)

Note 2: Start wire on spool with Green tape.

Note 3: End wire on spool with Red tape.

### INFO

Note 1: Good bondability with reduced material cost compared to gold.

Note 2: High reflectivity in short wavelength range.

Note 3: SEA is original Ag base alloy wire.

Note 4: SEB offers low resistivity similar to 2N Au wire.

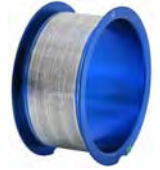
Note 5: SEC has softer FAB hardness and low resistivity similar to 4N Au wire.

Note 6: For SEB Type, change 3rd digit in order number to "2"

Note 7: For SEC Type, change 3rd digit in order number to "3" .

Note 8: Wire Diameter available: 15µm , 18µm , 20µm , 23µm , 25µm , 28µm , 30µm

# SEA Type How to Order



Part Number System				
<u>SEA</u>	-	<u>25</u>	<u>A</u>	<u>100</u>
Type		Ø Diameter µm	Spool Type	Length Meters
<u>Silver (Ag100)</u> SEA = Bonding Wire SEB = Bonding Wire SEC = Bonding Wire		<u>Code Mil</u> 15 0.6mil 18 0.7mil 20 0.8mil 23 0.9mil 25 1.0mil 28 1.1mil 30 1.2mil	<u>Aluminum Spool</u> A = 2"x1" AL-2(W) B = 2"x2" AL-4  <u>Conductive Spool</u> C = 2"x1" AL-2(WNI) N = 2"x2" AL-4(WNI)	<u>Meters Feet Spool</u> 100 300ft (A) 300 1000ft (A) 500 1500ft (A) 1000 3000ft (N) 2500 8000ft (N)
				Meters controlling dimension

Order Number				
<u>5</u>	<u>0</u>	<u>1</u>	<u>25</u>	<u>1</u>
Alloy	Shape	Model	Ø Diameter	Length
<u>Code • Description</u> 5 = Silver (Ag)	<u>Code Description</u> 0 = Round Wire	<u>Type</u> 1 = SEA 2 = SEB 3 = SEC	<u>µm Mil</u> 15 0.6mil 18 0.7mil 20 0.8mil 23 0.9mil 25 1.0mil 28 1.1mil 30 1.2mil	<u>Code Meters Feet</u> 1 = 100m (300ft) 3 = 300m (1000ft) 5 = 500m (1500ft) 6 = 1000m (3000ft) 7 = 2500m (8000ft) 9 = other
				Meters controlling

# CLR-1AT Type Palladium Coated Copper Bonding Wire (4N)



Ø Diameter ±1% µm	Breaking Load (gf)	Breaking Load (mN)	Elongation EL (%)	Length Meters	Length Feet	Part Number	Order Nr
Ø 15µm (Ø 0.6 mil)	2.0~5.0 gf	20~49mN	3.0~13%	100m	300ft	CLR1AT-15N100	700151
				300m	1000ft	CLR1AT-15N300	700153
				500m	1500ft	CLR1AT-15N500	700155
				1000m	3000ft	CLR1AT-15N1000	700156
Ø 18µm (Ø 0.7 mil)	3.2~7.2 gf	31~71mN	5.0~15%	100m	300ft	CLR1AT-18N100	700181
				300m	1000ft	CLR1AT-18N300	700183
				500m	1500ft	CLR1AT-18N500	700185
				1000m	3000ft	CLR1AT-18N1000	700186
Ø 20µm (Ø 0.8 mil)	4.0~8.9 gf	39~87mN	5.0~15%	100m	300ft	CLR1AT-20N100	700201
				300m	1000ft	CLR1AT-20N300	700203
				500m	1500ft	CLR1AT-20N500	700205
				1000m	3000ft	CLR1AT-20N1000	700206
Ø 25µm (Ø 1.0 mil)	6.3~14.0 gf	62~137mN	5.0~15%	100m	300ft	CLR1AT-25N100	700251
				300m	1000ft	CLR1AT-25N300	700253
				500m	1500ft	CLR1AT-25N500	700255
				1000m	3000ft	CLR1AT-25N1000	700266
Ø 30µm (Ø 1.2 mil)	9.0~20.2 gf	88~198mN	7.0~20%	100m	300ft	CLR1AT-30N100	700301
				300m	1000ft	CLR1AT-30N300	700303
				500m	1500ft	CLR1AT-30N500	700305
				1000m	3000ft	CLR1AT-30N1000	700306
Ø 32µm (Ø 1.25 mil)	10.3~22.9 gf	101~225mN	7.0~20%	100m	300ft	CLR1AT-32N100	700321
				300m	1000ft	CLR1AT-32N300	700323
				1000m	3000ft	CLR1AT-32N1000	700326
Ø 38µm (Ø 1.5 mil)	14.4~32.2 gf	141~316mN	7.0~20%	100m	300ft	CLR1AT-38N100	700381
				300m	1000ft	CLR1AT-38N300	700383
				500m	1500ft	CLR1AT-38N500	700385
Ø 50µm (Ø 2.0 mil)	29.2~60.4 gf	1286~592mN	10.0~25%	100m	300ft	CLR1AT-50N100	700501
				300m	1000ft	CLR1AT-50N300	700502
				500m	1500ft	CLR1AT-50N500	700505

## Spool Information

Type	A Flange Diameter	B Shaft Diameter	C Hub Diameter	D Hub Thickness	E Winding Width	F Overall Width	Style	Part Nr Code
	58.5mm	48.8mm	50.3mm	0.75mm	45.5mm	47.0mm	AL-4(WNI)	N

Note 1: Round Wire is wound forward/cross pattern (Cross wound-cross hatch wind)

Note 2: Start wire on spool with Green tape. End wire on spool with Red tape.

### INFO

Note 1: CRL1-AT Original Chemistry is easier to bond than bare copper wire.

Note 2: Wide bonding process window. Excellent reliability. High Performance. Stable bonding

Note 3: Requires grounded wire bonding equipment. Stable bonding N<sub>2</sub> or Forming Gas 95/5.

Note 4: Standard Tolerance: Ø15µm~38µm ±1 µm    Ø40~50µm ±2 µm

Note 5: Wire Diameter : 15µm , 18µm , 20µm , 23µm , 25µm , 28µm , 30µm , 32µm , 35µm , 38µm , 40µm , 50µm



# CLR-1AT Type How to Order



Part Number System				
<u>CLR1AT</u>	-	<u>25</u>	<u>N</u>	<u>100</u>
Type		Ø Diameter µm	Spool Type	Length Meters
CLR1AT = Palladium Coated Copper Wire (PCC) Original Chemistry		<u>Code</u> <u>Mil</u>	<u>Conductive Spool</u>	<u>Meters</u> <u>Feet</u> <u>Spool</u>
		15 0.6mil	N = 2"x2" AL-4 (WNI)	100 300ft (N)
		18 0.7mil		300 1000ft (N)
		20 0.8mil		500 1500ft (N)
		23 0.9mil		1000 3000ft (N)
		25 1.0mil		2500 8000ft (N)
		28 1.1mil		
		30 1.2mil		
		32 1.25mil		
		35 1.4mil		
		38 1.5mil		
		40 1.6mil		
		50 2.0mil		
				Meters controlling dimension

Order Number				
<u>7</u>	<u>0</u>	<u>0</u>	<u>25</u>	<u>1</u>
Alloy	Shape	Model	Ø Diameter	Length
<u>Code</u> • <u>Description</u> 7 = Copper Type	<u>Code</u> <u>Description</u> 0 = Round Wire	<u>Type</u> 0 = CLR-1A PCC Cu	<u>µm</u> <u>Mil</u> 15 0.6mil 18 0.7mil 20 0.8mil 23 0.9mil 25 1.0mil 28 1.1mil 30 1.2mil 32 1.25mil 35 1.4mil 38 1.5mil 40 1.6mil 50 2.0mil	<u>Code</u> <u>Meters</u> <u>Feet</u> 1 = 100m (300ft) 3 = 300m (1000ft) 5 = 500m (1500ft) 6 = 1000m (3000ft) 7 = 2500m (8000ft)
				Meters controlling

# CA-1 Type Copper Alloy Bonding Wire



Ø Diameter ±1% µm	Breaking Load (gf)	Breaking Load (mN)	Elongation EL (%)	Length Meters	Length Feet	Part Number	Order Nr
Ø 15µm (Ø 0.6 mil)	2.4~54 gf	23~53mN	7.0~17%	100m	300ft	CA1-15N100	701151
				500m	1500ft	CA1-15N500	701155
				1000m	3000ft	CA1-15N1000	701156
Ø 18µm (Ø 0.7 mil)	3.4~7.6 gf	33~75mN	7.0~17%	100m	300ft	CA1-18N100	701181
				300m	1000ft	CA1-18N300	701183
				500m	1500ft	CA1-18N500	701185
				1000m	3000ft	CA1-18N1000	701186
Ø 20µm (Ø 0.8 mil)	4.2~9.5 gf	41~93mN	7.0~17%	100m	300ft	CA1-20N100	701201
				300m	1000ft	CA1-20N300	701203
				500m	1500ft	CA1-20N500	701205
				1000m	3000ft	CA1-20N1000	701206
Ø 25µm (Ø 1.0 mil)	6.5~14.6 gf	64~143 mN	8.0~20%	100m	300ft	CA1-25N300	701251
				300m	1000ft	CA1-25N300	701253
				500m	1500ft	CA1-25N500	701255
				1000m	3000ft	CA1-25N1000	701256
Ø 30µm (Ø 1.2 mil)	9.3~20.8 gf	91~204 mN	9.0~22%	100m	300ft	CA1-30N100	701301
				300m	1000ft	CA1-30N300	701303
				500m	1500ft	CA1-30N500	701305
				1000m	3000ft	CA1-30N1000	701306
Ø 32µm (Ø 1.25 mil)	10.9~24.4 gf	107~239 mN	9.0~22%	100m	300ft	CA1-32N100	701321
				300m	1000ft	CA1-32N300	701323
				500m	1500ft	CA1-32N500	701325
				1000m	3000ft	CA1-32N1000	701326
Ø 38µm (Ø 1.5 mil)	15.2~33.9 gf	149~332 mN	9.0~22%	100m	300ft	CA1-38N100	701381
				300m	1000ft	CA1-38N300	701383
				500m	1500ft	CA1-38N500	701385
Ø 50µm (Ø 2.0 mil)	28.5~59.9 gf	279~587 mN	12~27%	100m	300ft	CA1-50N100	701501
				300m	1000ft	CA1-50N300	701503
				500m	1500ft	CA1-50N500	701505
Ø 70µm (Ø 2.8 mil)	55.8~117.4 gf	547~1151 mN	12~27%	100m	300ft	CA1-70N100	701701
				300m	1000ft	CA1-70N300	701703

## Spool Information

Type	A Flange Diameter	B Shaft Diameter	C Hub Diameter	D Hub Thickness	E Winding Width	F Overall Width	Style	Part Nr Code
	58.5mm	48.8mm	50.3mm	0.75mm	45.5mm	47.0mm	AL-4 (WNi)	N

Note 1: Round Wire is wound forward/cross pattern (Cross wound-cross hatch wind)

Note 2: Start wire on spool with Green tape. End wire on spool with Red tape.

### INFO

Note 1: Easier to bond than bare copper wire.

Note 2: Wide bonding process window. Excellent reliability. High Performance. Stable bonding

Note 3: Requires grounded wire bonding equipment. Stable bonding with Forming Gas 95/5.

Note 4: Standard Tolerance: Ø15µm~38µm ±1 µm    Ø40µm~50µm ±2 µm    Ø60µm~70µm ±3 µm

Note 5: Wire Diameter: 15µm , 18µm , 20µm , 23µm , 25µm , 30µm , 32µm , 38µm , 40µm , 50µm , 60µm , 70µm

# CA-1 Type How to Order



Part Number System							
<u>CA1</u>	-	<u>25</u>	<u>N</u>	<u>100</u>			
Type		Ø Diameter µm	Spool Type	Length Meters			
CA1 = Copper Alloy		<b>Code</b> <b>Mil</b>	<b>Conductive Spool</b> N = 2"x2" AL-4(WNi)	<b>Meters</b>	<b>Feet</b>	<b>Spool</b>	
		15 0.6mil		100	300ft	(N)	
		18 0.7mil		300	1000ft	(N)	
		20 0.8mil		500	1500ft	(N)	
		23 0.9mil		1000	3000ft	(N)	
		25 1.0mil		2500	8000ft	(N)	
		28 1.1mil					
		30 1.2mil					
		32 1.25mil					
		35 1.4mil					
		38 1.5mil					
		40 1.6mil					
		50 2.0mil					
	60 2.4mil						
	70 2.7mil						
				Meters controlling dimension			

Order Number					
<u>7</u>	<u>0</u>	<u>1</u>	<u>25</u>	<u>1</u>	
Alloy	Shape	Model	Ø Diameter		Length
<u>Code</u> • <u>Description</u>	<u>Code</u> <u>Description</u>	<u>Type</u>	<u>µm</u>	<u>Mil</u>	<u>Code</u> <u>Meters</u> <u>Feet</u>
7 = Copper Type	0 = Round Wire	1 =CA-1 Cu Alloy	15	0.6mil	1 = 100m (300ft)
			18	0.7mil	3 = 300m (1000ft)
			20	0.8mil	5 = 500m (1500ft)
			23	0.9mil	6 = 1000m (3000ft)
			25	1.0mil	7 = 2500m (8000ft)
			28	1.1mil	9 = other
			30	1.2mil	
			32	1.25mil	
			35	1.4mil	
			38	1.5mil	
			40	1.6mil	
			50	2.0mil	
			60	2.4mil	
			70	2.7mil	
					Meters controlling

# CFB-1 Type Bare Copper Bonding Wire



Ø Diameter ±1% µm	Breaking Load (gf)	Breaking Load (mN)	Elongation EL (%)	Length Meters	Length Feet	Part Number	Order Nr
Ø 18µm (Ø 0.7 mil)	3.6~7.8 gf	35~76mN	7.0~17%	100m	300ft	CFB1-18N100	702181
				300m	1000ft	CFB1-18N300	702183
				500m	1500ft	CFB1-18N500	702185
				1000m	3000ft	CFB1-18N1000	702186
Ø 20µm (Ø 0.8 mil)	4.4~9.6 gf	43~94mN	7.0~17%	100m	300ft	CFB1-20N100	702201
				300m	1000ft	CFB1-20N300	702203
				500m	1500ft	CFB1-20N500	702205
				1000m	3000ft	CFB1-20N1000	702206
Ø 25µm (Ø 1.0 mil)	6.8~14.8 gf	67~145 mN	8.0~20%	100m	300ft	CFB1-25N100	702251
				300m	1000ft	CFB1-25N300	702253
				500m	1500ft	CFB1-25N500	702255
				1000m	3000ft	CFB1-25N1000	702256
Ø 30µm (Ø 1.2 mil)	9.7~21.1 gf	95~207 mN	12~24%	100m	300ft	CFB1-30N100	702301
				300m	1000ft	CFB1-30N300	702303
				500m	1500ft	CFB1-30N500	702305
				1000m	3000ft	CFB1-30N1000	702306
Ø 32µm (Ø 1.25 mil)	11.3~24.8 gf	111~243 mN	12~24%	100m	300ft	CFB1-32N100	702321
				300m	1000ft	CFB1-32N300	702323
				500m	1500ft	CFB1-32N500	702325
				1000m	3000ft	CFB1-32N1000	702326
Ø 38µm (Ø 1.5 mil)	15.8~34.5 gf	155~338 mN	12~24%	100m	300ft	CFB1-38N100	702381
				300m	1000ft	CFB1-38N300	702383
				500m	1500ft	CFB1-38N500	702385
				100m	300ft	CFB1-50N100	702501
Ø 50µm (Ø 2.0 mil)	26.5~57.9 gf	260~568 mN	14~26%	300m	1000ft	CFB1-50N300	702503
				500m	1500ft	CFB1-50N500	702505
				100m	300ft	CFB1-70N100	702701
Ø 70µm (Ø 2.8 mil)	52.0~113.5 gf	510~1113 mN	14~26%	300m	1000ft	CFB1-70N300	702703

## Spool Information

Type	A Flange Diameter	B Shaft Diameter	C Hub Diameter	D Hub Thickness	E Winding Width	F Overall Width	Style	Part Nr Code
	58.5mm	48.8mm	50.3mm	0.75mm	45.5mm	47.0mm	AL-4(WNI)	N

Note 1: Round Wire is wound forward/cross pattern (Cross wound-cross hatch wind)

Note 2: Start wire on spool with Green tape. End wire on spool with Red tape.

INFO

Note 1: Easier to bond than bare copper wire.

Note 2: Wide bonding process window. Excellent reliability. High Performance. Stable bonding

Note 3: Requires grounded wire bonding equipment. Stable bonding with Forming Gas 95/5.

Note 4: Standard Tolerance: Ø15µm~38µm ±1 µm    Ø40µm~50µm ±2 µm    Ø60µm~70µm ±3 µm

Note 5: Wire Diameter: 18µm , 20µm , 23µm , 25µm , 28µm , 30µm , 32µm , 38µm , 40µm , 50µm , 60µm , 70µm

# CFB-1 Type How to Order



Part Number System							
<u>CFB1</u>	-	<u>25</u>	<u>N</u>	<u>100</u>			
Type		Ø Diameter µm	Spool Type	Length Meters			
CFB1 = Bare Copper		<b>Code</b> <b>Mil</b>	<b>Conductive Spool</b> N = 2"x2" AL-4(WNI)	<b>Meters</b>	<b>Feet</b>	<b>Spool</b>	
		15 0.6mil		100	300ft	(N)	
		18 0.7mil		300	1000ft	(N)	
		20 0.8mil		500	1500ft	(N)	
		23 0.9mil		1000	3000ft	(N)	
		25 1.0mil		2500	8000ft	(N)	
		28 1.1mil					
		30 1.2mil					
		32 1.25mil					
		35 1.4mil					
		38 1.5mil					
		40 1.6mil					
		50 2.0mil					
	60 2.4mil						
	70 2.7mil						
				Meters controlling dimension			

Order Number					
<u>7</u>	<u>0</u>	<u>2</u>	<u>25</u>	<u>1</u>	
Alloy	Shape	Model	Ø Diameter		Length
<u>Code</u> • <u>Description</u> 7 = Copper Type	<u>Code</u> <u>Description</u> 0 = Round Wire	<u>Type</u> 2 =CFB-1 Bare Cu	<u>µm</u>	<u>Mil</u>	<u>Code</u> <u>Meters</u> <u>Feet</u>
			15	0.6mil	1 = 100m (300ft)
			18	0.7mil	3 = 300m (1000ft)
			20	0.8mil	5 = 500m (1500ft)
			23	0.9mil	6 = 1000m (3000ft)
			25	1.0mil	7 = 2500m (8000ft)
			28	1.1mil	9 = other
			30	1.2mil	
			32	1.25mil	
			35	1.4mil	
			38	1.5mil	
			40	1.6mil	
			50	2.0mil	
			60	2.4mil	
			70	2.7mil	
					Meters controlling

# CP-1 Type Heavy Power Copper Bonding Wire



Ø Diameter ±1% µm	Breaking Load (gf)	Breaking Load (mN)	Elongation EL (%)	Length Meters	Length Feet	Part Number	Order Nr
Ø 200µm (Ø 8 mil)	510~917 gf	5.0~9.0 N	5~35%	100m	300ft	CP1-200P100	707041
Ø 250µm (Ø 10 mil)	816~1427 gf	8.0~14.0N	5~35%	100m	300ft	CP1-250P100	707051
Ø 300µm (Ø 12 mil)	1326~2039 gf	13.0~20.0 N	5~35%	100m	300ft	CP1-300P100	707061
Ø 380µm (Ø 15 mil)	2040~3059 gf	20.0~30.0 N	10~40%	100m	300ft	CP1-380P100	707081
Ø 400µm (Ø 16 mil)	2346~3365 gf	23.0~33.0 N	10~40%	100m	300ft	CP1-400P100	707091
Ø 500µm (Ø 20 mil)	4079~5302 gf	40.0~52.0 N	10~50%	100m	300ft	CP1-500P100	707111

## Spool Information

Type	A Flange Diameter	B Shaft Diameter	C Hub Diameter	D Hub Thickness	E Winding Width	F Overall Width	Style	Part Nr Code
	88mm 3.50"	10mm 0.040"	50mm 2.0"	3mm 0.12"	25mm 1.0"	31mm 1.25"	No.88 No.88B	P
	120mm 4.75"	10mm 0.40"	54mm 2.0"	4mm 1.57"	30mm 1.18"	38mm 1.50"	No. 120	R

Note 1: Round Wire is wound forward/cross pattern (Cross wound-cross hatch wind)

Note 2: Start wire on spool with Green tape. End wire on spool with Red tape.

### INFO

Note 1: Heavy Copper 4N Bonding Wire. Excellent electrical conductivity (40% better than aluminum).

Note 2: Annealed. Heat treated. Stress relieved (SR type).

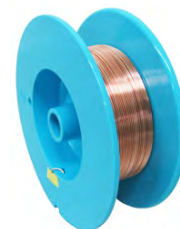
Note 3: Requires grounded wire bonding equipment

Note 4: Standard Tolerance: Ø100µm ~ Ø150µm ±5 µm    Ø200µm ~ Ø450µm ±7 µm    Ø500µm ±10 µm

Note 5: Wire Diameter: 200µm, 250µm, 300µm, 380µm, 400µm and 500µm



# CP-1 Type How to Order



Part Number System						
<u>CP1</u>	-	<u>400</u>	<u>P</u>	<u>100</u>		
Type		Ø Diameter µm	Spool Type	Length Meters		
CP1 = Heavy Power Copper 4N				100~380um		
		<u>Code</u> <u>Mil</u>	<u>Polycarbonate Spool</u>	<u>Meters</u>	<u>Feet</u>	<u>Spool</u>
		200 8mil	P = Ø 88mm x 31mm	100	328ft	(P)
		250 10mil	Ø 3.5" x 1.25"	200	650ft	(P)
		300 12mil		300	1000ft	(P)
		380 15mil		400	1300ft	(P)
		400 16mil		500	1600ft	(P)
		500 20mil	R = Ø120mm x 38mm			
			Ø 3.5" x 1.25"	400~500um		
				<u>Meters</u>	<u>Feet</u>	<u>Spool</u>
			100	328ft	(P)	
			200	650ft	(P)	
			300	1000ft	(P /R)	
			500	1600ft	(R)	

Order Number					
<u>7</u>	<u>0</u>	<u>7</u>	<u>09</u>	<u>1</u>	
Alloy	Shape	Model	Ø Diameter	Length	
<u>Code</u> • <u>Description</u> 7 = Copper Type	<u>Code</u> <u>Description</u> 0 = Round Wire	<u>Type</u> 7 =CP-1 Heavy Power Cu	<u>Code</u> <u>µm</u> <u>Mil</u> 04 200um 8mil 05 250um 10mil 06 300um 12mil 07 350um 14mil 08 380um 15mil 09 400um 16mil 10 450um 18mil 11 500um 20mil	<u>Code</u> <u>Meters</u> <u>Feet</u> 0 = 50m (164ft) 1 = 100m (328ft) 2 = 200m (650ft) 3 = 300m (1000ft) 4 = 400m (1300ft) 5 = 500m (1600ft) 6 = 600m (2000ft) 7 = 700m (2300ft) 8 = 800m (2600ft) 9 = 1000m (3300ft) Meters controlling	

Wire Size	CP-1 Maximum Meters per Spool Type								
	100m	200m	300m	400m	500m	600m	700m	800m	1000m
200um	No. 88B	No. 88B	No. 88B	No. 88B	No. 88B	No. 88B	No. 88B	No. 88B	-
250um	No. 88	No. 88	No. 88	No. 88	No. 88	No. 88	No. 88	No. 88	No. 88
300um	No. 88	No. 88	No. 88	No. 88	No. 88	No. 88	No. 88	-	-
380um	No. 88	No. 88	No. 88	No. 88	No. 88	No. 88	-	-	-
400um	No. 88	No. 88	No. 88	No. 120	No. 120	No. 120	No. 120	No. 120	-
500um	No. 88	No. 88	No. 120	No. 120	No. 120	No. 120	-	-	-

# TABN Type Aluminum Al-1% Si Bonding Wire



Ø Diameter ±1% µm	Breaking Load (gf)	Breaking Load (mN)	Elongation EL (%)	Length Meters	Length Feet	Part Number	Order Nr
Ø 18µm (Ø 0.7 mil)	6.0~7.5 gf	66~71mN	0.5~4.5%	25m	75ft	TABN-18A25	403189
				50m	150ft	TABN-18H50	403180
				100m	300ft	TABN-18A100	403181
				500m	1500ft	TABN-18A500	403185
Ø 20µm (Ø 0.8 mil)	8.0~10 gf	79~98mN	0.5~4.5%	25m	75ft	TABN-20H25	403209
				50m	150ft	TABN-20H50	403200
				100m	300ft	TABN-20A100	403201
				500m	1500ft	TABN-20A500	403205
Ø 25µm (Ø 1.0 mil)	13~15 gf	127~147 mN	0.5~4.5%	25m	75ft	TABN-25H25	403259
				50m	150ft	TABN-25H50	403250
				100m	300ft	TABN-25A100	403251
				300m	1000ft	TABN-25A300	403253
500m	1500ft	TABN-25A500	403255				
Ø 30µm (Ø 1.2 mil)	17~19 gf	167~186 mN	0.5~4.5%	25m	75ft	TABN-30H25	403309
				50m	150ft	TABN-30H50	403300
				100m	300ft	TABN-30A100	403301
				300m	1000ft	TABN-30A300	403303
500m	1500ft	TABN-30A500	403305				
Ø 32µm (Ø 1.25 mil)	19~21 gf	186~206 mN	0.5~4.5%	25m	75ft	TABN-32H25	403329
				50m	150ft	TABN-32H50	403320
				100m	300ft	TABN-32A100	403321
				300m	1000ft	TABN-32A300	403323
500m	1500ft	TABN-32A500	403325				
Ø 33µm (Ø 1.3 mil)	19~21 gf	186~206 mN	0.5~4.5%	25m	75ft	TABN-33H25	403339
				100m	300ft	TABN-33A100	403331
				300m	1000ft	TABN-33A300	403333
				500m	1500ft	TABN-33A500	403335
Ø 38µm (Ø 1.5 mil)	31~34gf	304~333 mN	0.5~5.0%	25m	75ft	TABN-38H25	403389
				100m	300ft	TABN-38A100	403381
				300m	1000ft	TABN-38A300	403383
				500m	1500ft	TABN-38A500	403385
Ø 50µm (Ø 2.0 mil)	47~53 gf	461~520 mN	0.5~6.0%	25m	75ft	TABN-50H25	403509
				100m	300ft	TABN-50A100	403501
				500m	1500ft	TABN-50A500	403505

## Spool Information

Type	A Flange Diameter	B Shaft Diameter	C Hub Diameter	D Hub Thickness	E Winding Width	F Overall Width	Style	Part Nr Code
	58.5mm	48.8mm	50.3mm	0.75mm	26.4mm	27.9mm	AL-2(W)	A
	58.5mm	48.8mm	50.3mm	0.75mm	45.5mm	47.0mm	AL-4(WNI)	N
	17.4mm	12.7mm	13.5mm	0.40mm	18.3mm	19.1mm	HALF-INCH	H

Note 1: Round Wire is wound forward/cross pattern (Cross wound-cross hatch wind)

Note 2: Start wire on spool with Green tape. End wire on spool with Red tape.

INFO

Note 1: Uniform distribution of Si and stable mechanical property.

Note 2: TABN with nickel doping for better corrosion resistance under PCT.

Note 3: Standard Tolerance: Ø18µm~38µm ±1 µm    Ø40µm~50µm ±2 µm    Ø60~80µm ±3 µm

Note 4: Wire Diameter available: 18µm, 20µm, 25µm, 28µm, 30µm, 32µm, 35µm, 38µm, 40µm, 50µm, 80µm

# TABN Type How to Order



Part Number System					
<u>TABN</u>	-	<u>25</u>	<u>A</u>	<u>100</u>	
Type		Ø Diameter µm	Spool Type	Length Meters	
<b>TABN =</b> <b>Aluminum Al-1% Si</b> With Nickel Doping		<u>Code</u> <u>Mil</u> 18 0.7mil 20 0.8mil 25 1.0mil 28 1.1mil 30 1.2mil 32 1.25mil	<b>Aluminum Spool</b> A = 2"x1" AL-2(W) N = 2"x2" AL-4WNI H = 1/2" AL-1/2	<u>Meters</u> <u>Feet</u> <u>Spool</u> 25 75ft (H) 50 150ft (H) 100 300ft (A) 300 1000ft (A) 500 1500ft (A) 1000 3000ft (N) 2500 8000ft (N)	
		35 1.4mil 38 1.5mil 40 1.6mil 50 2.0mil 80 3.0mil			
	<b>TABW = LEGACY</b> <b>Aluminum Al-1% Si</b> Without Nickel Doping Scheduled for Obsolescence				

Meters controlling dimension

Order Number				
<u>4</u>	<u>0</u>	<u>3</u>	<u>25</u>	<u>1</u>
Alloy	Shape	Model	Ø Diameter	Length
<u>Code</u> • <u>Description</u> 4 = Aluminum	<u>Code</u> <u>Description</u> 0 = Round Wire	<u>Type</u> 3 = TABN Al-1%Si With Nickel  <b>LEGACY</b> 4 = TABW Al-1%Si Without Nickel	<u>µm</u> <u>Mil</u> 18 0.7mil 20 0.8mil 25 1.0mil 28 1.1mil 30 1.2mil 32 1.25mil 35 1.4mil 38 1.5mil 40 1.6mil 50 2.0mil 80 3.0mil	<u>Code</u> <u>Meters</u> <u>Feet</u> 9 = 25m (75ft) 0 = 50m (150ft) 1 = 100m (300ft) 3 = 300m (1000ft) 5 = 500m (1500ft) 6 = 1000m (3000ft) 7 = 2500m (8000ft)
				Meters controlling

# TANW SOFT Aluminum (Al) Power Large Diameter Bonding Wire



Ø Diameter	Breaking Load (gf)	Breaking Load (N)	Elongation EL (%)	Temper	Length Meters	Length Feet	Part Number	Order Nr
Ø 100µm (Ø 4mil)	50~80 gf	0.49~0.78N	10~30%	S-1	100m 500m	300ft 1500ft	TANW-100K100 TANW-100K500	405001 405005
Ø 125µm (Ø 5mil)	70~120 gf	0.69~1.18 N	10~30%	S-1	100m 500m	300ft 1500ft	TANW-125K100 TANW-125K500	405011 405015
Ø 150µm (Ø 6mil)	100~200 gf	0.98~1.96 N	10~30%	S-1	100m 500m	300ft 1500ft	TANW-150K100 TANW-150K500	405021 405025
Ø 175µm (Ø 7mil)	140~240 gf	1.37~2.35 N	10~30%	S-1	100m 500m	300ft 1500ft	TANW-175K100 TANW-175K500	405031 405035
Ø 200µm (Ø 8mil)	140~200 gf	1.37~1.96N	10~30%	S-2	100m 500m	300ft 1500ft	TANW-200K100 TANW-200K500	405041 405045
Ø 250µm (Ø 10mil)	210~300 gf	2.06~2.94 N	10~30%	S-2	100m 500m	300ft 1500ft	TANW-250K100 TANW-250K500	405051 405055
Ø 300µm (Ø 12mil)	300~420 gf	2.94~4.12 N	10~30%	S-2	100m 500m	300ft 1500ft	TANW-300K100 TANW-300K500	405061 405065
Ø 350µm (Ø 14mil)	450~550 gf	4.41~5.39 N	10~30%	S-2	100m 500m	300ft 1500ft	TANW-350K100 TANW-350K500	405071 405075
Ø 380µm (Ø 15mil)	500~700 gf	4.90~6.86N	10~30%	S-2	100m 500m	300ft 1600ft	TANW-380K100 TANW-380K500	405081 405085
Ø 400µm (Ø 16mil)	550~750 gf	5.39~7.35 N	10~30%	S-2	100m 500m	300ft 1600ft	TANW-400K100 TANW-400K500	405091 405095
Ø 450µm (Ø 18mil)	700~850 gf	6.86~8.34 N	10~30%	S-2	100m 300m	300ft 1000ft	TANW-450K100 TANW-450K300	405101 405103
Ø 500µm (Ø 20mil)	800~1100 gf	7.85~10.79 N	10~30%	S-2	100m 300m	300ft 1000ft	TANW-500K100 TANW-500K300	405111 405113
Ø 600µm (Ø 24mil)	1200~1700 gf	11.7~17.3 N	10~40%	S-2	100m 200m	300ft 600ft	TANW-600K100 TANW-600K200	405121 405122

## Spool Information

Type	A Flange Diameter	B Shaft Diameter	C Hub Diameter	D Hub Thickness	E Winding Width	F Overall Width	Style	Part Nr Code
	89mm 3.5"	11mm 0.43"	50m 2.0"	3mm 0.118"	31mm 1.25"	37mm 1.45"	No. 88K (Ø 100µm~600µm)	K (Clear)
	120mm 4.75"	11mm 0.43"	64mm 2.52"	3mm 0.118"	30mm 1.18"	38mm 1.5"	No. 120K Ø 300µm~600µm	T (Clear)

Note 1: Round Wire is wound forward/cross pattern (Cross wound-cross hatch wind)

Note 2: Start wire on spool with Green tape. Note 3: End wire on spool with Red tape.

INFO

Note 1: Large diameter aluminum (Al) bonding wire for power devices.

Note 2: Excellent bondability and corrosion resistance

Note 3: Standard Tolerance: Ø100µm~175µm ±5 µm    Ø200µm~450µm ±7 µm    Ø500~600µm ±10 µm

# TANW MID Strong Aluminum (Al) Power Large Diameter Bonding Wire



Ø Diameter	Breaking Load (gf)	Breaking Load (N)	Elongation EL (%)	Temper	Length Meters	Length Feet	Part Number	Order Nr
Ø 200µm (Ø 8mil)	200~300 gf	1.96~2.94N	10~30%	S-1	100m	300ft	TANW-MID-200K100	406041
					500m	1500ft	TANW-MID-200K500	406045
					1000m	3300ft	TANW-MID-200K1000	406049
Ø 250µm (Ø 10mil)	300~450 gf	2.94~4.41 N	15~40%	S-1	100m	300ft	TANW-MID-250K100	406051
					500m	1500ft	TANW-MID-250K500	406055
					1000m	3300ft	TANW-MID-250K1000	406059
Ø 300µm (Ø 12mil)	400~600 gf	3.92~5.88 N	15~40%	S-1	100m	300ft	TANW-MID-300K100	406061
					500m	1500ft	TANW-MID-300K500	406065
					1000m	3300ft	TANW-MID-300T1000	406069
Ø 350µm (Ø 14mil)	570~960 gf	5.58~9.40 N	15~40%	S-1	100m	300ft	TANW-MID-350K100	406071
					300m	1000ft	TANW-MID-350K300	406073
					500m	1500ft	TANW-MID-350K500	406075
					1000m	3300ft	TANW-MID-350T1000	406079
Ø 380µm (Ø 15mil)	750~1100 gf	6.75~10.78N	15~40%	S-1	100m	300ft	TANW-MID-380K100	406081
					300m	1000ft	TANW-MID-380K300	406083
					500m	1600ft	TANW-MID-380K500	406085
					1000m	3300ft	TANW-MID-380T1000	406089
Ø 400µm (Ø 16mil)	750~1250 gf	6.75~12.25 N	15~40%	S-1	100m	300ft	TANW-MID-400K100	406091
					300m	1000ft	TANW-MID-400K300	406093
					500m	1600ft	TANW-MID-400K500	406095
					1000m	3300ft	TANW-MID-400T1000	406099
Ø 450µm (Ø 18mil)	950~1580 gf	9.31~15.48 N	15~40%	S-1	100m	300ft	TANW-MID-450K100	406101
					200m	600ft	TANW-MID-450K200	406102
					300m	1000ft	TANW-MID-450K300	406103
					500m	1600ft	TANW-MID-450T500	406105
Ø 500µm (Ø 20mil)	1170~1900 gf	11.5~18.6 N	15~40%	S-1	100m	300ft	TANW-MID-500K100	406111
					200m	600ft	TANW-MID-500K200	406112
					300m	1000ft	TANW-MID-500K300	406113
					500m	1600ft	TANW-MID-500T500	406115

## Spool Information

Type	A Flange Diameter	B Shaft Diameter	C Hub Diameter	D Hub Thickness	E Winding Width	F Overall Width	Style	Part Nr Code
	89mm 3.5"	11mm 0.43"	50mm 2.0"	3mm 0.118"	31mm 1.25"	37mm 1.45"	No. 88K (Ø 100µm~600µm)	K (Clear)
	120mm 4.75"	11mm 0.43"	64mm 2.52"	3mm 0.118"	30mm 1.18"	38mm 1.5"	No. 120K (Ø 100µm~600µm)	T (Clear)

Note 1: Round Wire is wound forward/cross pattern (Cross wound-cross hatch wind)

Note 2: Start wire on spool with Green tape. Note 3: End wire on spool with Red tape.

INFO

Note 1: Large diameter aluminum (Al) bonding wire for power devices.

Note 2: Excellent bondability and corrosion resistance

Note 3: Standard Tolerance: Ø100µm~175µm ±5 µm    Ø200µm~450µm ±7 µm    Ø500~600µm ±10 µm



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# TANW HARD

## Strong Aluminum (Al) Power Large Diameter Bonding Wire



Ø Diameter	Breaking Load (gf)	Breaking Load (N)	Elongation EL (%)	Temper	Length Meters	Length Feet	Part Number	Order Nr
Ø 500µm (Ø 20mil)	1800~2200 gf	18.3~22.4 N	5~30%	S-1	100m	300ft	TANW-HARD-500K100	407111
					200m	600ft	TANW-HARD-500K200	407112
					300m	1000ft	TANW-HARD-500K300	407113
					500m	1600ft	TANW-HARD-500T500	407115

### Spool Information

Type	A Flange Diameter	B Shaft Diameter	C Hub Diameter	D Hub Thickness	E Winding Width	F Overall Width	Style	Part Nr Code
	89mm 3.5"	11mm 0.43"	50mm 2.0"	3mm 0.118"	31mm 1.25"	37mm 1.45"	No. 88K (Ø 100um~600um)	K (Clear)
	120mm 4.75"	11mm 0.43"	64mm 2.52"	3mm 0.118"	30mm 1.18"	38mm 1.5"	No. 120K Ø 100um~600um	T (Clear)

Note 1: Round Wire is wound forward/cross pattern (Cross wound-cross hatch wind)  
Note 2: Start wire on spool with Green tape. Note 3: End wire on spool with Red tape.

INFO

**Note 1: Large diameter aluminum (Al) bonding wire for power devices.**  
**Note 2: Excellent bondability and corrosion resistance**  
**Note 3: Standard Tolerance: Ø100um~175um ± 5 um    Ø200um~450um ± 7 um    Ø500~600um ± 10 um**

# TANW Type How to Order



Part Number System					
<u>TANW</u>	-	<u>300</u>	<u>K</u>	<u>100</u>	
Type		Ø Diameter µm	Spool Type	Length Meters	
<b>TANW = SOFT</b> Bonding Wire <b>Large Diameter</b> Aluminum Al		<b>Code Mil</b> 100 4mil 125 5mil 150 6mil 175 7mil 200 8mil 250 10mil	<b>Polycarbonate Spool</b>  K = Ø88mm x 31mm Ø3.5" x 1.25" 11mm Shaft Spool 88K  T = Ø120mm x 38mm Ø4.75" x 1.5" 11mm Shaft Spool 120K	<b>Meters Feet</b> 100 300ft 200 600ft 300 1000ft 400 1300ft 500 1600ft 600 2000ft 700 2300ft 800 2600ft 1000 3200ft	
<b>TANW-MID</b> Strong-Range Breaking Load		300 12mil 350 14mil 380 15mil 400 16mil			
<b>TANW-HARD</b> Strongest Breaking Load		450 18mil 500 20mil 600 24mil		Meters controlling dimension	

Order Number				
<u>4</u>	<u>0</u>	<u>5</u>	<u>06</u>	<u>1</u>
Alloy	Shape	Model	Ø Diameter Code	Length
<u>Code • Description</u> 4 = Aluminum	<u>Code Description</u> 0 = Round Wire	<u>Type</u> 5 = TANW-SOFT  6 = TANW-MID  7 = TANW-HARD	<u>Code µm Mil</u> 00 100um 4mil 01 125um 5mil 02 150um 6mil 03 175um 7mil 04 200um 8mil 05 250um 10mil 06 300um 12mil 07 350um 14mil 08 380um 15mil 09 400um 16mil 10 450um 18mil 11 500um 20mil 12 600um 24mil	<u>Code Meters Feet</u> 1 = 100m (300ft) 2 = 200m (600ft) 3 = 300m (1000ft) 4 = 400m (1300ft) 5 = 500m (1500ft) 6 = 600m (2000ft) 7 = 700m (2300ft) 8 = 800m (2600ft) 9 = 1000m (3200ft)
				Meters controlling

Wire Size	TANW Maximum Meters per Spool Type							
	100m	200m	300m	400m	500m	600m	800m	1000m
100~250um	No. 88K	No. 88K	No. 88K	No. 88K	No. 88K	No. 88K	No. 88K	No. 88K
300um	No. 88K	No. 88K	No. 88K	No. 88K	No. 88K	No. 88K	No. 88K	No. 120K
350~400um	No. 88K	No. 88K	No. 88K	No. 88K	No. 88K	No. 120K	No. 120K	No. 120K
450um	No. 88K	No. 88K	No. 88K	No. 88K	No. 120K	No. 120K	No. 120K	No. 120K
500um	No. 88K	No. 88K	No. 88K	No. 120K	No. 120K	No. 120K	No. 120K	No. 120K
600um	No. 88K	No. 88K	No. 120K	No. 120K	No. 120K	No. 120K	No. 120K	No. 120K

SPOOL code in Part Number: No.88K type "K". No.120 type "T"



# TABR Type Aluminum (Al) Ribbon Bonding Wire



Size Width	Size Thickness	Breaking Load (gf)	Breaking Load (N)	Elongation EL (%)	Length Meters	Length Feet	Part Number	Order Nr
500µm (± 50µm)	100µm (± 10µm)	275~425 gf	2.7~4.2 N	≥10%	100m 200m	300ft 600ft	TABR-500x100P100 TABR-500x100P200	412461 412462
		413~638 gf	4.0~6.2 N	≥10%	100m 300m	300ft 1000ft	TABR-750x100P100 TABR-750x100P300	412481 412483
1000µm (± 50µm)	100µm (± 10µm)	550~850 gf	5.4~8.3 N	≥10%	100m 500m	300ft 1500ft	TABR-1000x100P100 TABR-1000x100R500	412491 412495
	150µm (± 15µm)	675~1125 gf	6.6~11.0 N	≥10%	100m 400m	300ft 1300ft	TABR-1000x150P100 TABR-1000x150R400	412641 412644
	200µm (± 20µm)	900~1500 gf	8.8~14.7 N	≥10%	100m 400m	300ft 1300ft	TABR-1000x200P100 TABR-1000x200R400	412841 412844
1500µm (± 75µm)	100µm (± 10µm)	715~1225 gf	7.0~12.0 N	≥10%	100m 400m	300ft 1300ft	TABR-1500x100P100 TABR-1500x100R400	412421 412424
	150µm (± 15µm)	1013~1688 gf	9.9~16.5 N	≥10%	100m 300m	300ft 1000ft	TABR-1500x150P100 TABR-1500x150R300	412651 412653
	200µm (± 20µm)	1350~2250 gf	13.2~22.1 N	≥10%	100m 400m	300ft 1300ft	TABR-1500x200P100 TABR-1500x200R400	412851 412854
	250µm (± 25µm)	1688~2813 gf	16.5~27.6 N	≥10%	100m 300m	300ft 1300ft	TABR-1500x250P100 TABR-1500x250R300	412951 412953
	300µm (± 30µm)	2025~3375 gf	19.8~33.1 N	≥10%	50m 200m	300ft 600ft	TABR-1500x300P50 TABR-1500x300R200	412980 412982
2000µm (± 100µm)	150µm (± 15µm)	1350~2250 gf	13.2~22.1 N	≥10%	100m 400m	300ft 1300ft	TABR-2000x150P100 TABR-2000x150R400	412661 412664
	200µm (± 20µm)	1800~3000 gf	17.6~29.4 N	≥10%	100m 300m	300ft 1000ft	TABR-2000x200R100 TABR-2000x200R300	412861 412863
	250µm (± 25µm)	2250~3750 gf	22.1~36.7 N	≥10%	50m 200m	150ft 600ft	TABR-2000x250P50 TABR-2000x250R200	412960 412962
	300µm (± 30µm)	2700~4500 gf	26.4~44.1 N	≥10%	50m 200m	150ft 600ft	TABR-2000x300P50 TABR-2000x300R200	412990 412992
	400µm (± 40µm)	3600~6000 gf	36.7~61.2 N	≥10%	50m 100m	150ft 300ft	TABR-2000x400P50 TABR-2000x400R100	412790 412791

## Spool Information

Type	A Flange Diameter	B Shaft Diameter	C Hub Diameter	D Hub Thickness	E Winding Width	F Overall Width	Style	Part Nr Code
	88mm 3.5"	10mm 0.40"	50mm 2.0"	3mm 0.12"	25mm 1.0"	31mm 1.25"	No. 88	P
	120mm 4.75"	10mm 0.40"	54mm 2.0"	4mm 1.57"	30mm 1.18"	38mm 1.50"	No. 120	R

INFO

**Note 1:** TABR Type Al ribbon is fabricated using a dry rolled process. Edges are smooth without sharp edges. No lubrication oils are during fabrication. Excellent corrosion resistance. Good surface smoothness.

**Note 2:** Tanaka's specially formulated winding process assures consistent de-spooling and smooth bonding. Not parallel winding. Excellent solution for power devices. TABR is made in Japan.

# TABR Type How to Order



Part Number System				
<u>TABR</u>	-	<u>750x100</u>	<u>P</u>	<u>100</u>
Type		Size Code (um)	Spool Type	Length Meters
<b>TABR = Aluminum Al Bonding Ribbon</b>		<u>Code</u> <u>W x Th</u> <b>500x100</b> = 0.5 x 0.10mm <b>750x100</b> = 0.8 x 0.10mm <b>1000x100</b> = 1.0 x 0.10mm <b>1500x100</b> = 1.0 x 0.10mm <b>1500x200</b> = 1.5 x 0.20mm <b>2000x150</b> = 2.0 x 0.15mm <b>2000x200</b> = 2.0 x 0.20mm <b>2000x250</b> = 2.0 x 0.25mm <b>2000x300</b> = 2.0 x 0.30mm <b>2000x400</b> = 2.0 x 0.40mm	<u>Polycarbonate Spool</u> <b>P</b> = Ø 88mm x 31mm Ø 3.5" x 1.25"  <b>R</b> = Ø 120mm x 38mm Ø 4.75" x 1.50"	<u>Meters</u> <u>Feet</u> <b>50</b> 150ft <b>100</b> 300ft <b>200</b> 600ft <b>300</b> 1000ft <b>400</b> 1300ft <b>500</b> 1600ft  Meters controlling

Order Number				
<u>4</u>	<u>1</u>	<u>2</u>	<u>48</u>	<u>1</u>
Alloy	Shape	Model	Size Code	Length
<u>Code</u> • <u>Description</u> <b>4</b> = Aluminum	<u>Code</u> <u>Description</u> <b>1</b> = Flat Wire	<u>Type</u> <b>2</b> =TABR Al Ribbon	<u>Code</u> <u>W x Th</u> <b>See Table Below</b>	<u>Code</u> <u>Meters</u> <u>Feet</u> <b>0</b> = 50m (150ft) <b>1</b> = 100m (328ft) <b>2</b> = 200m (600ft) <b>3</b> = 300m (1000ft) <b>4</b> = 400m (1300ft) <b>5</b> = 500m (1600ft) <b>9</b> = other

Ribbon Size		TABR Maximum Meters per Spool Type					
Width um	Thick um	50m	100m	200m	300m	400m	500m
<b>500um</b>	100um	No.88	No. 88	No.88	-	-	-
<b>750um</b>		No.88	No. 88	No.88	No.88	No.120	No.120
<b>1000um</b>		No.88	No. 88	No.88	No.120	No.120	No.120
<b>1500um</b>		No.88	No. 88	No.120	No.120	No.120	No.120
<b>1000um</b>	150um	No.88	No. 88	No.120	No.120	No.120	No.120
<b>1500um</b>		No.88	No. 88	No.120	No.120	No.120	No.120
<b>2000um</b>		No.88	No. 88	No.120	No.120	No.120	-
<b>1000um</b>	200um	No.88	No. 88	No.120	No.120	No.120	No.120
<b>1250um</b>		No.88	No. 88	No.120	No.120	No.120	-
<b>1500um</b>		No.88	No. 88	No.120	No.120	No.120	-
<b>2000um</b>		No.88	No. 88 No.120	No.120	No.120	-	-
<b>1500um</b>	250um	No.88	No. 88	No.120	No.120	-	-
<b>2000um</b>		No.88	No.120	No.120	-	-	-
<b>1500um</b>	300um	No.88	No.120	No.120	-	-	-
<b>2000um</b>		No.88	No.120	No.120	-	-	-
<b>2000um</b>	400um	No.88	No.120	No.120 - 150m	-	-	-

SPOOL code in Part Number: No.88 type "P". No.120 type "R"

# AuR Type Gold (Au) Ribbon Bonding Wire 4N



Size Width	Size Thickness	Breaking Load (gf)	Breaking Load (N)	Elongation EL (%)	Length Meters	Length Feet	Part Number	Order Nr
<b>38um</b> 1.5mil	<b>12.7um</b> 0.5mil	7.2~15.0 gf	71~147 N	≥ 2.0%	10m 50m	33ft 150ft	AuR-38x12.7H10 AuR-38x12.7A50	326380 316380
<b>50um</b> 2.0mil		9.5~19.7 gf	94~193 N	≥ 2.0%	10m 50m	33ft 150ft	AuR-50x12.7H10 AuR-50x12.7A50	326500 316500
<b>75um</b> 3.0mil		14.3~29.5 gf	141~289 N	≥ 2.0%	10m 50m	33ft 150ft	AuR-75x12.7H10 AuR-75x12.7A50	326520 316520
<b>100um</b> 4.0mil		19.1~39.4 gf	188~386 N	≥ 2.0%	10m 50m	33ft 150ft	AuR-100x12.7H10 AuR-100x12.7A50	326530 316530
<b>125um</b> 5.0mil		23.8~49.2gf	234~482 N	≥ 2.0%	10m 50m	33ft 150ft	AuR-125x12.7H10 AuR-125x12.7A50	326540 316540
<b>150um</b> 6.0mil		28.6~59.2 gf	282~579 N	≥ 2.0%	10m 50m	33ft 150ft	AuR-150x12.7H10 AuR-150x12.7A50	326550 316550
<b>50um</b> 2.0mil	<b>25um</b> 1.0mil	18.8~38.8 gf	185~380 N	≥ 2.0%	10m 50m	33ft 150ft	AuR-50x25H10 AuR-50x25A50	326100 316100
<b>75um</b> 3.0mil		28.1~58.1 gf	276~569 N	≥ 2.0%	10m 50m	33ft 150ft	AuR-75x25H10 AuR-75x25A50	326110 316110
<b>100um</b> 4.0mil		37.5~77.5 gf	368~686 N	≥ 2.0%	10m 50m	33ft 150ft	AuR-100x25H10 AuR-100x25A50	326120 316120
<b>125um</b> 5.0mil		46.9~96.9 gf	460~950 N	≥ 2.0%	10m 50m	33ft 150ft	AuR-125x25H10 AuR-125x25A50	326130 316130
<b>150um</b> 6.0mil		56.3~116 gf	553~1140N	≥ 2.0%	10m 50m	33ft 150ft	AuR-150x25H10 AuR-150x25A50	326140 316140
<b>200um</b> 8.0mil		75.0~155 gf	736~1520N	≥ 2.0%	10m 50m	33ft 150ft	AuR-200x25H10 AuR-200x25A50	326150 316150
<b>250um</b> 10.0mil	93.8~194 gf	936~1900N	≥ 2.0%	10m 50m	33ft 150ft	AuR-250x25H10 AuR-250x25A50	326160 316160	
<b>125um</b> 5.0mil	<b>50um</b> 2.0mil	9.38~194 gf	920~1900N	≥ 2.0%	10m 50m	33ft 150ft	AuR-125x50H10 AuR-125x50A50	326220 316220

## Spool Information

Type	A Flange Diameter	B Shaft Diameter	C Hub Diameter	D Hub Thickness	E Winding Width	F Overall Width	Style	Part Nr Code
	58.5mm	48.8mm	50.3mm	0.75mm	26.4mm	27.9mm	AL-2	A
	58.5mm	48.8mm	50.3mm	0.75mm	26.4mm	27.9mm	AL-2(WNI)	C
	17.4mm	12.7mm	13.5mm	0.40mm	18.3mm	19.1mm	HALF-INCH	H

Note 1: Round Wire is wound forward/cross pattern (Cross wound-cross hatch wind)

Note 2: Start wire on spool with Green tape. Note 3: End wire on spool with Red tape.

INFO

**Note 1: AuR Type Au Gold ribbon is fabricated using dry process. Provides an excellent solution for RF devices. No lubrication oils are introduced during fabrication. Excellent corrosion resistance. Tanaka AuR ribbon is made using a rolled process. Edges are smooth without sharp edges. Good surface smoothness.**

**Note 2: Alternative Gold Ribbon with Be (Beryllium) available as Type AuR-3 Type 353xxx.**

# AuR Type How to Order



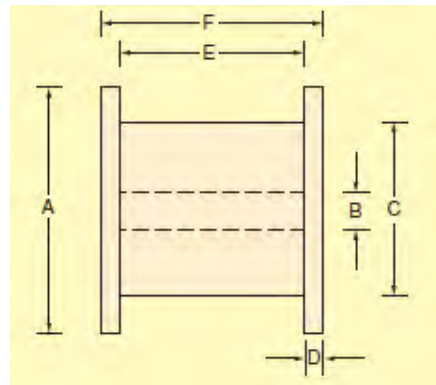
Part Number System																			
<b><u>AuR</u></b>	<b>-</b>	<b><u>100x12.7</u></b>	<b><u>A</u></b>	<b><u>50</u></b>															
Type		Size Code	Spool Type	Length Meters															
<b>AuR = Gold Au Bonding Ribbon 4N</b>  <b>AuR3 = Gold Au Be Doped 4N</b>		<b><u>W x Th</u></b> 25~200 x 12.7um 50~250 x 25um 125 x 50um  <i>* See Other Sizes</i>	<b><u>Aluminum Spool</u></b> A = 2"x1" AL-2  <b><u>Conductive Spool</u></b> C = 2"x1" AL-2(WNI) N = 2"x2" AL-4(WNI) H = 1/2" HALF	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"><u>Meters</u></th> <th style="text-align: left;"><u>Feet</u></th> <th style="text-align: left;"><u>Spool</u></th> </tr> </thead> <tbody> <tr> <td><b>10</b></td> <td>33ft</td> <td>(H)</td> </tr> <tr> <td><b>50</b></td> <td>150ft</td> <td>(A)</td> </tr> <tr> <td colspan="3" style="text-align: center;"><b>Special:</b></td> </tr> <tr> <td><b>30</b></td> <td>100ft</td> <td>(A)</td> </tr> </tbody> </table> <p>Meters controlling dimension</p>	<u>Meters</u>	<u>Feet</u>	<u>Spool</u>	<b>10</b>	33ft	(H)	<b>50</b>	150ft	(A)	<b>Special:</b>			<b>30</b>	100ft	(A)
<u>Meters</u>	<u>Feet</u>	<u>Spool</u>																	
<b>10</b>	33ft	(H)																	
<b>50</b>	150ft	(A)																	
<b>Special:</b>																			
<b>30</b>	100ft	(A)																	

Order Number				
<b><u>3</u></b>	<b><u>1</u></b>	<b><u>6</u></b>	<b><u>53</u></b>	<b><u>0</u></b>
Alloy	Shape	Model	Size Code	Length
<b><u>Code • Description</u></b> 3 = Gold	<b><u>Code Description</u></b> 1 = Flat Wire 2-inch (A) Spool  2 = Flat Wire 1/2-inch (H) Spool  5 = Flat Wire 2-inch (A) Spool Be Doped	<b><u>Type</u></b> 6 =AuR Au Ribbon  3 =AuR Au Ribbon Be Doped	<b><u>Code Width x Thick</u></b> 51 = 25 x 12.7um 38 = 38 x 12.7um 50 = 50 x 12.7um 52 = 75 x 12.7um 53 = 100 x 12.7um 55 = 150 x 12.7um 10 = 50 x 25um 11 = 75 x 25um 12 = 100 x 25um 13 = 125 x 25um 14 = 150 x 25um 15 = 200 x 25um 16 = 250 x 25um	<b><u>Code Meters Feet</u></b> <b>Spool "H"</b> 0 = 10m (33ft)  <b>Spool "A"</b> 0 = 50m (150ft) 3 = 30m (100ft)  Meters controlling

Sizes Codes				
<b><u>12.7um</u></b>	<b><u>16um</u></b>	<b><u>20um</u></b>	<b><u>25um</u></b>	<b><u>50um</u></b>
0.5mil	0.63 mil	0.8mil	1.0mil	2.0mil
<b><u>Code • Width</u></b> 51 = 25um 38 = 38um 50 = 50um 52 = 75um 53 = 100um 54 = 125um 55 = 150um 56 = 200um* 57 = 250um* 58 = 300um*	<b><u>Code • Width</u></b> 32 = 32um	<b><u>Code • Width</u></b> XX = 80um XX = 200um	<b><u>Code • Width</u></b> 10 = 50um 11 = 75um 12 = 100um 13 = 125um 14 = 150um 15 = 200um 16 = 250um 17 = 300um* 18 = 380um* 19 = 500um*	<b><u>Code • Width</u></b> 22 = 125um

**Call TopLine for AuR Gold sizes marked with asterisk \***

# Spools



## Spool Dimensions

Material	Type	A Flange Diameter	B Shaft Diameter	C Hub Diameter	D Hub Thickness	E Winding Width	F Overall Width	Style	Part Code
Aluminum	Standard Anodized Hub	58.5mm	48.8mm	50.3mm	0.75mm	26.4mm	27.9mm	AL-2W	A
		58.5mm	48.8mm	50.3mm	0.75mm	45.5mm	47.0mm	AL-4	B
	Conductive Nickel Hub	17.4mm	12.7mm	13.5mm	0.40mm	18.3mm	19.1mm	HALF	H
		58.5mm	48.8mm	50.3mm	0.75mm	26.4mm	27.9mm	AL-2WNI	C
		58.5mm	48.8mm	50.3mm	0.75mm	45.5mm	47.0mm	AL-4WNI	N
Polycarbonate	Anti-static	88mm	10mm	50mm	3mm	25mm	31mm	No.88	P
		89mm	10mm	71mm	3mm	25mm	31mm	No.88B	
		88mm	11mm	50mm	3mm	31mm	37mm	No.88K	K
		120mm	10mm	54mm	4mm	30mm	38mm	No.120	R
		120mm	11mm	64mm	4mm	30mm	38mm	No.120K	T

Spools No.88K and No.120 and No.120K are Clear Polycarbonate.  
Spools No.88, No.88B are Blue Polycarbonate.

Spool A	Spool B	Spool C	Spool N	Spool H	Spool P	Spool K / R / T
AL-2(W) Aluminum 2" x 1"	AL-4 Aluminum 2" x 2"	AL-2WNI Conductive 2" x 1"	AL-4WNI Conductive 2" x 2"	HALF- INCH 1/2" x 3/4"	P=No.88/88B Polycarbonate	K=No.88K R=No.120 T=No.120K Polycarbonate



± Tolerance Table

Alloy	Ø Diameter	Tolerance	Spool
Au Gold  Model GBC, GBE, GFC, GFD, GHA-2, GLD-H, GLF, GMB, GMG, GMH-2, GPG-2, GPH, GSA, GSB, AuR	Ø 12.5µm ~ 38µm (Ø 0.5 ~ 1.5 mil)	±1 µm	AL2(W) AL-4
	Ø 40µm ~ 50µm (Ø 1.6 ~ 2.0 mil)	±2 µm	
	Ø 65µm ~ 100µm (Ø 2.5 ~ 4.0 mil)	±3 µm	
	Ø 125µm ~ 150µm (Ø 5.0 ~ 6.0 mil)	±5 µm	88K Polycarbonate
	Ø 175µm ~ 200µm (Ø 7.0 ~ 8.0 mil)	±7 µm	
	Ø 250µm (Ø 10 mil)	±10 µm	
Ag Silver  Model SEA, SEB, SEC	Ø 15µm ~ 38µm (Ø 0.6 ~ 1.5 mil)	±1 µm	AL2(W) AL-4
	Ø 40µm ~ 50µm (Ø 1.6 ~ 2.0 mil)	±2 µm	
Al-1% Si  Model TABN, TABW	Ø 15µm ~ 38µm (Ø 0.6 ~ 1.5 mil)	±1 µm	AL2(W) AL-4
	Ø 40µm ~ 50µm (Ø 1.6 ~ 2.0 mil)	±2 µm	
	Ø 80µm (Ø 3.0 mil)	±3 µm	
Power Model TANW and CP-1	Ø 100µm ~ 175µm (Ø 4.0 ~ 7.0 mil)	±5 µm	No. 88K Polycarbonate
	Ø 200µm ~ 450µm (Ø 8.0 ~ 18 mil)	±7 µm	
	Ø 500µm ~ 600µm (Ø 20 ~ 24 mil)	±10 µm	
Cu Copper Bare & Plated  Model CLR-1AT CA-1, CFB-1	Ø 15µm ~ 38µm (Ø 0.6 ~ 1.5 mil)	±1 µm	AL-4(Ni) Conductive
	Ø 40µm ~ 50µm (Ø 1.6 ~ 2.0 mil)	±2 µm	
	Ø 60µm ~ 70µm (Ø 2.4 ~ 2.8 mil)	±3 µm	
Flat Al Ribbon  Model TABR	Width 0.75mm (30 mil) Thick 0.1mm (4 mil)	W: ±0.050mm T: ±0.010mm	No. 88 No. 88B Polycarbonate
	Width 1.0mm (40 mil) Thick 0.1mm (4 mil)	W: ±0.050mm T: ±0.010mm	
	Width 1.5mm (60 mil) Thick 0.2mm (8 mil)	W: ±0.075mm T: ±0.020mm	
	Width 2.0mm (80 mil) Thick 0.25mm (10 mil)	W: ±0.10mm T: ±0.025mm	

## Fusing Current Small Wire

Alloy	Wire Type	Wire Diameter Ø um	2.0mm Length	4.0mm Length	6.0mm Length
Gold Au	4N GSA, M3, GLD-H, GFD, GLF, GMH-2 , C, Y, FA,	Ø18 um	0.70 A	0.35 A	0.24 A
		Ø20 um	0.87 A	0.43 A	0.29 A
		Ø25 um	1.36 A	0.68 A	0.45 A
	2N GBC, GPH, GPG-2	Ø18 um	0.62 A	0.31 A	0.21 A
		Ø20 um	0.77 A	0.38 A	0.26 A
		Ø25 um	1.20 A	0.60 A	0.40 A
Copper Cu	CLR1A-T, CFB-1	Ø18 um	0.81 A	0.41 A	0.27 A
		Ø20 um	1.00 A	0.50 A	0.24 A
		Ø25 um	1.57 A	0.78 A	0.52 A
	CA-1	Ø18 um	0.76 A	0.38 A	0.25 A
		Ø20 um	0.94 A	0.47 A	0.31 A
		Ø25 um	1.46 A	0.73 A	0.49 A
Silver Ag	SEA	Ø20 um	0.48 A	0.24 A	0.16 A
		Ø25 um	0.75 A	0.37 A	0.25 A
	SEB	Ø20 um	0.67 A	0.34 A	0.22 A
		Ø25 um	1.05 A	0.53 A	0.35 A
	SEC	Ø20 um	0.84 A	0.42 A	0.28 A
		Ø25 um	1.32 A	0.66 A	0.44 A
Aluminum Al-Si1%	TABN	Ø25 um	0.98 A	0.49 A	0.33 A

**IMPORTANT:** Fusing Current data is provided only for reference without guarantee of accuracy. Data subject to change based on environmental factors such as molding compound and substrate material.



## Fusing Current Power Wire

Alloy	Wire Type	Wire Size W x Th	3.0mm Length	10mm Length	20mm Length
Gold Au Ribbon	AuR	25 x 12.7 um	0.5 A	0.18 A	-
		38 x 12.7 um	0.8 A	0.27 A	-
		50 x 12.7 um	1.1 A	0.36 A	-
		75 x 12.7 um	1.7 A	0.54 A	-
		100 x 12.7 um	2.1 A	0.72 A	-
		125 x 12.7 um	2.7 A	0.90 A	-
		150 x 12.7 um	3.3 A	1.08 A	-
		75 x 25 um	3.2 A	1.08 A	-
		100 x 25 um	4.3 A	1.44 A	-
		125 x 25 um	5.3 A	1.80 A	-
		150 x 25 um	6.4 A	2.16 A	-
		200 x 25 um	8.6 A	2.88 A	-
		250 x 25 um	10.9 A	3.59 A	-
Alloy	Wire Type	Wire Size W x Th	6.0mm Length	10mm Length	20mm Length
Aluminum Al Ribbon	TABR	750 x 100 um	24.0 A	16.4 A	10.6 A
		1000 x 100 um	32.3 A	21.8 A	14.2 A
		1500 x 100 um	48.5 A	32.7 A	21.2 A
		1500 x 200 um	97.0 A	65.4 A	42.5 A
		2000 x 200um	129.4 A	87.3 A	56.7 A
Aluminum Power Wire	TANW	Ø100 um	-	-	2.9 A
		Ø200 um	-	-	7.0 A
		Ø300 um	22.8 A	16.0 A	12.9 A
		Ø400 um	40.6 A	25.8 A	19.7 A
		Ø500 um	63.5 A	40.4 A	28.9 A
Copper Power Wire	CP-1				-
		Ø300 um	-	22.0 A	-
		Ø350 um	-	29.0 A	-
		Ø400 um	-	37.0 A	-
		Ø450 um	-	45.0 A	-
		Ø500 um	-	55.0 A	-

**IMPORTANT:** Fusing Current data is provided only for reference without guarantee of accuracy. Data subject to change based on environmental factors such as molding compound and substrate material.



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## Tanaka Type & Order Code

Order Code	Tanaka Type	Alloy	Application	Catalog Page	Standard Spool
300	GSA	Au 4N	Ball or Wedge	4~5	AL-2 and AL-4
301	GBE	Au 4N	Bumping Wire	20~21	AL-2 and AL-4
302	GMH-2	Au 4N	High Strength	10~11	AL-2 and AL-4
303	M3	Au 4N	Standard Wire	16~17	1/2" and AL-2
304	GPG-2	Au 2N	High Reliability	12~13	AL-2 and AL-4
305	GBC	Au 2N	High Reliability	18~19	AL-2 and AL-4
306	GFD	Au 4N	Fine Pitch	Web Page	AL-2 and AL-4
307	GLF	Au 4N	Low Loop	8~9	AL-2 and AL-4
308	GPH	Au 2N	High Reliability	14~15	AL-2 and AL-4
309	GLD-H	Au 4N	Wedge to Wedge	6~7	1/2" and AL-2
316	AuR	Au 4N	Ribbon 2" Spool	42~43	AL-2 and AL-4
326	AuR	Au 4N	Ribbon 1/2" Spool	42~43	1/2" HALF INCH
330	FA	Au 4N	Soft Touch	See Web Page	AL-2 and AL-4
331	Y	Au 4N	Power Gold	22~23	P and AL-4
332	GMG	Au 4N	High Strength	Call TopLine	AL-2 and AL-4
333	GMH	Au 4N	High Strength	Call TopLine	AL-2 and AL-4
334	GFC	Au 4N	Fine Pitch	Call TopLine	AL-2 and AL-4
335	GPG	Au 2N	High Reliability	Call TopLine	AL-2 and AL-4
336	GSB	Au 4N	Stable Stitch	Call TopLine	AL-2 and AL-4
337	GMB-2	Au 4N	Smart Card	Call TopLine	AL-2 and AL-4
338	GHA-2	Au 4N	High Loop	Call TopLine	AL-2 and AL-4
339	GL-2	Au 4N	High Strength	Call TopLine	AL-2 and AL-4
340	C	Au 4N	Legacy	Call TopLine	AL-2 and AL-4
342	AuW	Au 4N	High Power	Call TopLine	X000002
353	AuR-3	Au 4N	Ribbon Be Doped	42~43	AL-2 and AL-4
388	AuC	Au 4N	Slit Cut Ribbon	Web Page	Pancake 2"
402	TABR	Al 4N	Ribbon	40~41	No.88K, No.120
403	TABN	Al 1%Si	With Nickel	34~35	1/2" and AL-2
404	TABW	Al 1%Si	Without Nickel	34~35	AL-2 and AL-4
405	TANW-SOFT	Al	Power Soft BL	36~39	No.88K, No.120K
406	TANW-MID	Al	Power Medium BL	36~39	No.88K, No.120K
407	TAND-HARD	Al	Power Hardest BL	36~39	No.88K, No.120K
501	SEA	Silver Alloy	Original	24~25	AL-2 and AL-4
502	SEB	Silver Alloy	Low Resistivity	24~25	AL-2 and AL-4
503	SEC	Silver Alloy	Softer FAB	24~25	AL-2 and AL-4
505	AgC	Silver Ribbon	Slit Cut Ribbon	44~45	W ABS
566	AgW	Silver 3N	Power Wire	See Web Page	No.88
700	CLR-1AT	Cu-Pd 4N	Palladium Coated	26~27	AL4 (WNI)
701	CA-1	Copper Alloy 2N	Bare	28~29	AL4 (WNI)
702	CFB-1	Cu Standard	Bare	30~31	AL4 (WNI)
703	CHA	Heavy Power	Bare	Discontinued	AL4 (WNI)
704	CHR-2BT	Cu-Pd 4N	Palladium Coated	-	AL4 (WNI)
705	CHR-5BT	Cu-Pd 3N	Palladium Coated	-	AL4 (WNI)
706	CHR-6BT	Cu-Pd 2N	Palladium Coated	-	AL4 (WNI)
707	CP-1	Cu - 4N	Heavy Power	32~33	No.88
708	-	-	-	-	-
709	-	-	-	-	-
773	CPR-1	Cu - 4N	Copper Ribbon	Discontinued	No.88

## Wire Bondability to Bond Pads

### Bonding with Gold Wire (Au)

Wire	Chip Die Pad	Lead Frame Or Substrate	Bond Finger	Component	Bondability	Comments
GOLD Au	Al	BT Organic	Ni/Au	BGA	Yes	Recommended minimum Au plating 0.3um thickness to prevent Ni oxide forming on the bond fingers.
	Cu	BT Organic	Ni/Au	BGA	Caution	This combination is problematic. Use caution to control process window. Possible oxidation on bond pads.
	Al	Cu Lead Frame	NiPdAu	QFN	Yes	4N Au wire is preferred. 2N Au wire is a harder alloy and requires more bonding force. 2N requires ultrasonic for 2nd bond which might cause possible bond finger vibration and "Non-Stick on Lead" (NSOL). Lead frame can be tapped to reduce vibration.
	Cu	Cu Lead Frame	NiPdAu	QFN	Caution	Combination is problematic. Use caution to control process window. Possible oxidation on bond pads
	Al	Cu Lead Frame	Spot Ag	QFN	Yes	This combination is mature and stable process. No major issues are anticipated.
	Cu	Cu Lead Frame	Spot Ag	QFN	Caution	Combination is problematic. Use caution to control process window. Possible oxidation on bond pads

### Bonding with Silver Alloy Wire (Ag)

Wire	Chip Die Pad	Lead Frame Or Substrate	Bond Finger	Component	Bondability	Comments
Silver Ag	Al	BT	Ni/Au	BGA	Yes	
	Cu	BT	Ni/Au	BGA	Yes	The main concern is a risk of Cu bond pad oxidation. Remedy might be to use OSP Cu.
	Al	Cu	NiPdAu	QFN	Yes	Only concern is risk of Cu lead frame oxidation layer
	Cu	Cu	NiPdAu	QFN	Yes	Concern is risk of Cu lead frame oxidation layer
	Al	Cu	Spot Ag	QFN	Yes	Only concern is risk of Cu lead frame oxidation layer
	Cu	Cu	Spot Ag	QFN	Yes	Concern is risk of Cu lead frame oxidation layer

### Bonding with Copper Wire (Cu)

Wire	Chip Die Pad	Lead Frame Or Substrate	Bond Finger	Component	Bondability	Comments
Copper Cu	Al	BT	Ni/Au	BGA	No	Recommended to use Palladium Coated Copper Wire
	Cu	BT	Ni/Au	BGA	No	Recommended Palladium Coated Copper wire with OSP on copper bond pads.
	Al	Cu	NiPdAu	QFN	Yes	Very narrow window for proper bonding. Suggested to use Palladium Coated Copper wire.
	Cu	Cu	NiPdAu	QFN	Caution	This combination is problematic. Use caution to control process window. Possible oxidation on the bond pads.
	Al	Cu	Spot Ag	QFN	Yes	Stable Process.
	Cu	Cu	Spot Ag	QFN	Caution	This combination is problematic. Use caution to control process window. Possible oxidation on the bond pads.

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