

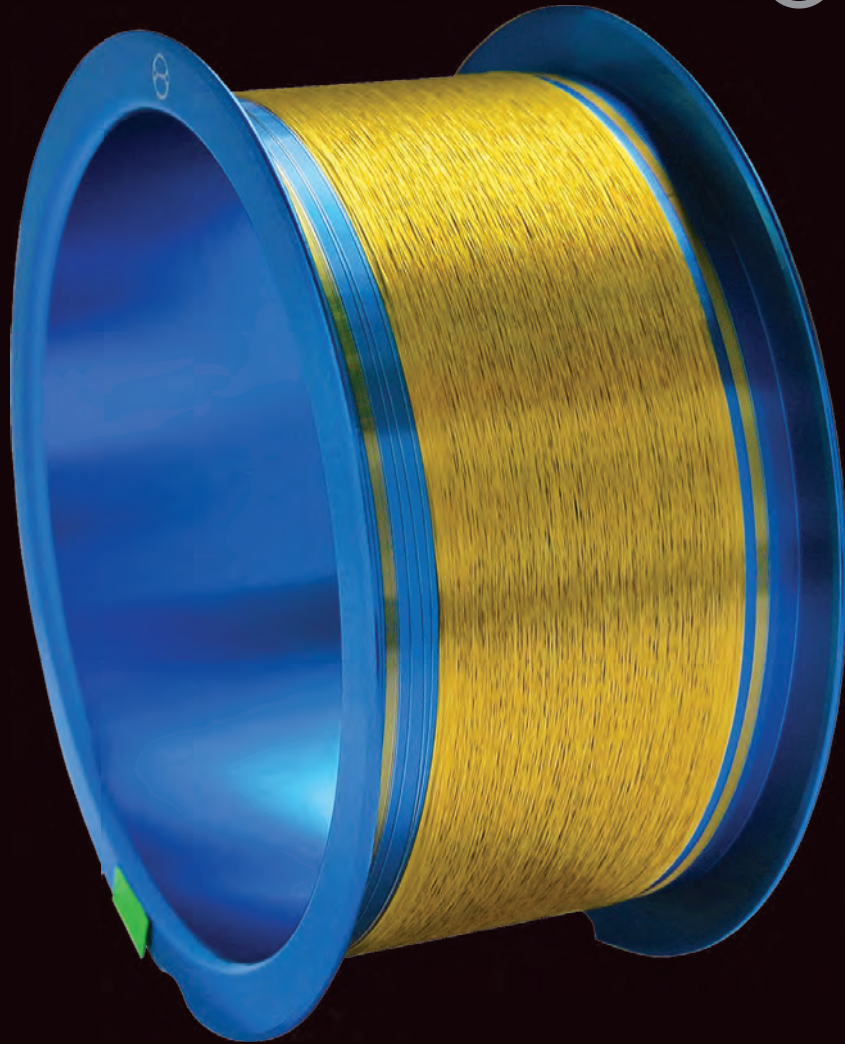
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**BONDING WIRE**

Made by  TANAKA



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Product Guide 2023 - C



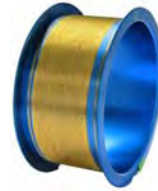
**GSA Type**  
Gold Au (4N)  
Bonding Wire  
Page 4~5



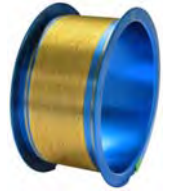
**GLD-H Type**  
Gold Au (4N)  
High Performance Wedge  
Page 6~7



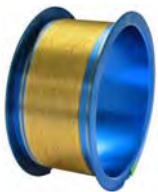
**GLF Type**  
Gold Au (4N)  
Super Low Loop  
Page 8~9



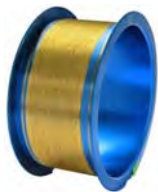
**GMH-2 Type**  
High Strength (4N)  
Bonding Wire  
Page 10~11



**GPG-2 Type**  
High Reliability (2N)  
Bonding Wire  
Page 12~13



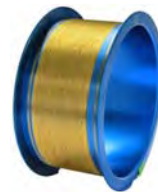
**GPH Type**  
High Reliability (2N)  
Bonding Wire  
Page 14~15



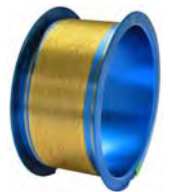
**M3 (4N)**  
Manual Bonder Au  
Bonding Wire  
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**GBC (2N)**  
Gold Au  
Bumping Wire  
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**GBE (4N)**  
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**Y Type (4N)**  
Heavy Power Gold  
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**SEA Type**  
Silver Ag  
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**CLR-1AT Type PCC**  
Palladium Coated  
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**CA-1 Type**  
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**CFB-1 Type**  
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Heavy Copper  
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**TABN Type**  
Aluminum Al-1% Si  
Bonding Wire  
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**TANW Type**  
Large Aluminum Al  
Power Bonding Wire  
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**TABR Type**  
Aluminum Al Ribbon  
Flat Bonding Wire  
Page 40~41



**AuR Type**  
Gold Au Ribbon  
Flat Bonding Wire  
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**CPR-1 Type**  
Cu Copper Ribbon  
Flat Bonding Wire  
Page 46~47



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

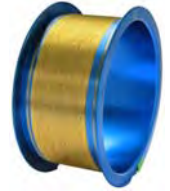
Email: Tanaka@TopLine.tv

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	B

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

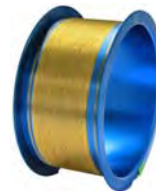
Note 1: Stable stitch bond on PPF (NiPdAu) QFN at 175°C, QFP and BGA Packages.

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

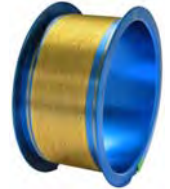
# GSA Type How to Order



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	300ft	GLD-H-12.5A100	309121
Ø 15µm (Ø 0.6 mil)	3.5 gf Min	34 mN Min	3.5% max	50m	150ft	GLD-H-15H50	309150
				100m	300ft	GLD-H-15A100	309151
				300m	1000ft	GLD-H-15A300	309153
Ø 18µm (Ø 0.7 mil)	4.0 gf Min	39 mN Min	3.5% max	25m	75ft	GLD-H-18H25	309189
				50m	150ft	GLD-H-18H50	309180
				100m	300ft	GLD-H-18A100	309181
				300m	1000ft	GLD-H-18A300	309183
Ø 20µm (Ø 0.8 mil)	6.0 gf Min	59 mN Min	3.5% max	25m	75ft	GLD-H-20H25	309209
				50m	150ft	GLD-H-20H50	309200
				100m	300ft	GLD-H-20A100	309201
				300m	1000ft	GLD-H-20A300	309203
Ø 25µm (Ø 1.0 mil)	16 gf Min	156 mN Min	3.5% max	25m	75ft	GLD-H-25H25	309259
				50m	150ft	GLD-H-25H50	309250
				100m	300ft	GLD-H-25A100	309251
				300m	1000ft	GLD-H-25A300	309253
				500m	1500ft	GLD-H-25A500	309255
Ø 30µm (Ø 1.2 mil)	20 gf Min	196 mN Min	3.5% max	50m	150ft	GLD-H-30H50	309300
				100m	300ft	GLD-H-30A100	309301
				300m	1000ft	GLD-H-30A300	309303
Ø 32µm (Ø 1.25 mil)	23 gf Min	225 mN Min	3.5% max	50m	150ft	GLD-H-32H50	309320
				100m	300ft	GLD-H-32A100	309321
				300m	1000ft	GLD-H-32A300	309323
Ø 35µm (Ø 1.4 mil)	27 gf Min	264mN Min	4.5% max	50m	150ft	GLD-H-35H50	309350
				100m	300ft	GLD-H-35A100	309351
				300m	1000ft	GLD-H-35A300	309353
Ø 50µm (Ø 2.0 mil)	45 gf Min	441 mN Min	4.5% max	50m	150ft	GLD-H-50H50	309500
				100m	300ft	GLD-H-50A100	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

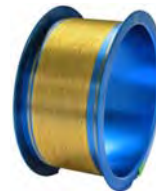
Note 1: For wedge to wedge applications that require maximum 3.5% elongation with Ø18~30µm

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

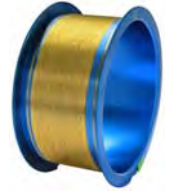
# GLD-H Type High Performance Wedge Bonding Wire



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;"><u>Code</u></th> <th style="text-align: left;"><u>Mil</u></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>	<u>Code</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	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;"><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>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>(B)</td></tr> <tr><td>2500</td><td>8000ft</td><td>(B)</td></tr> </tbody> </table> <p style="text-align: right;">Meters controlling dimension</p>	<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	(B)	2500	8000ft	(B)
<u>Code</u>	<u>Mil</u>																																																					
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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;"><u>µm</u></th> <th style="text-align: left;"><u>Mil</u></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>	<u>µm</u>	<u>Mil</u>	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>9 = 25m (75ft) 0 = 50m (150ft) 1 = 100m (300ft) 3 = 300m (1000ft) 5 = 500m (1500ft) 6 = 1000m (3000ft) 7 = 2500m (8000ft)</p> <p style="text-align: right;">Meters controlling</p>
<u>µm</u>	<u>Mil</u>																									
12.5	0.5mil																									
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30	1.2mil																									
32	1.25mil																									
35	1.4mil																									
38	1.5mil																									
50	2.0mil																									

# 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	45.5mm	47.0mm	AL-4	B

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.

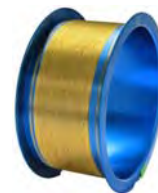
Note 3: Higher pull load than conventional low loop wires. Less damage in neck. Suppression of snake-wire.

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

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



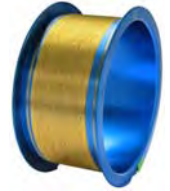
# GLF Type Super Low Loop How to Order



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</b> <b>Mil</b>	<b>Aluminum Spool</b>	<b>Meters</b> <b>Feet</b> <b>Spool</b>
		15 0.6mil	A = 2"x1" AL-2(W)	100 300ft (A)
		18 0.7mil	B = 2"x2" AL-4	300 1000ft (A)
		20 0.8mil		500 1500ft (A)
		23 0.9mil		1000 3000ft (B)
		25 1.0mil		2500 8000ft (B)
		28 1.1mil 30 1.2mil		
				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</b> • <b>Description</b> 3 = Gold (Au)	<b>Code</b> <b>Description</b> 0 = Round Wire	<b>Gold Wire (Au)</b> 7 = GLF	<b>µm</b> <b>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</b> <b>Meters</b> <b>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

## 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	B

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

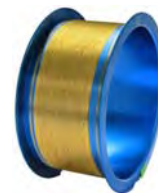
Note 1: High tensile strength for multiple loop profiles used in BGA packages.

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

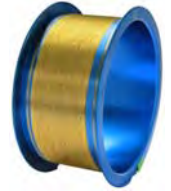
# GMH-2 Type High Tensile Strength How to Order



Part Number System				
<u>GMH2</u>	-	<u>25</u>	<u>A</u>	<u>100</u>
Type		Ø Diameter µm	Spool Type	Length Meters
<u>Gold 4N (Au99.99)</u> GMH2 = Super High Tensile Strength Bonding 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	<u>Aluminum Spool</u> A = 2"x1"   AL-2(W) B = 2"x2"   AL-4	<u>Meters</u> <u>Feet</u> <u>Spool</u> 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>2</u>	<u>25</u>	<u>1</u>
Alloy	Shape	Model	Ø Diameter	Length
<u>Code • Description</u> 3 = Gold (Au)	<u>Code</u> <u>Description</u> 0 = Round Wire	<u>Gold Wire (Au)</u> 2 =GMH-2	<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	<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

# GPG-2 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)	3.5~6.3 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	45.5mm	47.0mm	AL-4	B

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%)

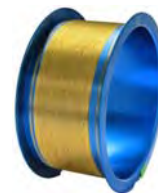
Note 2: High bond reliability and good match for mold compound with halogen.

Note 3: Good squashed ball.

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

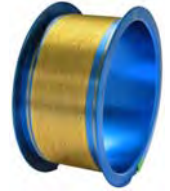
Note 5: Wire Diameter available: 15µm , 18µm , 20µm , 23µm , 25µm , 28µm , 30µm , 32µm , 33µm , 38µm

# 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
<b><u>Gold 2N (Au99-Pd1)</u></b> GPG-2 = Super High Reliability Bonding Wire		<b><u>Code Mil</u></b> 15 0.6mil 18 0.7mil 20 0.8mil 23 0.9mil	<b><u>Aluminum Spool</u></b> A = 2"x1" AL-2(W) B = 2"x2" AL-4	<b><u>Meters Feet Spool</u></b> 100 300ft (A) 300 1000ft (A) 500 1500ft (A) 1000 3000ft (B) 2500 8000ft (B)
<b><u>Other Models</u></b> GPG GPG-3		25 1.0mil 28 1.1mil 30 1.2mil		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
<b><u>Code • Description</u></b> 3 = Gold (Au)	<b><u>Code Description</u></b> 0 = Round Wire	<b><u>Gold Wire (Au)</u></b> 4 =GPG-2  <b><u>Other Models</u></b> 35 = GPG 41 =GPG-3	<b><u>µm 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	<b><u>Code Meters 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)	3.3~6.1 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	45.5mm	47.0mm	AL-4	B

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)

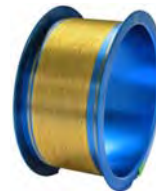
Note 2: Higher bond reliability and good character for halogen free mold compound.

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

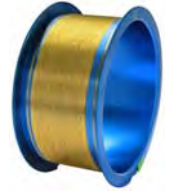
# GPH Type High Reliability Bonding How to Order



Part Number System						
<u>GPH</u>	-	<u>25</u>		<u>A</u>	<u>100</u>	
Type		Ø Diameter µm		Spool Type	Length Meters	
<u>Gold 2N (Au99-x)</u> GPH= High Reliability Bonding Wire		<u>Code</u>	<u>Mil</u>	<u>Aluminum Spool</u>	<u>Meters</u>	<u>Feet</u> <u>Spool</u>
		15	0.6mil	A = 2"x1" AL-2(W)	100	300ft (A)
		18	0.7mil	B = 2"x2" AL-4	300	1000ft (A)
		20	0.8mil		500	1500ft (A)
		23	0.9mil		1000	3000ft (B)
		25	1.0mil		2500	8000ft (B)
		28	1.1mil			
	30	1.2mil				
						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>	<u>Code</u> <u>Description</u>	<u>Gold Wire (Au)</u>	<u>µm</u>	<u>Mil</u>	<u>Code</u>	<u>Meters</u> <u>Feet</u>
3 = Gold (Au)	0 = Round Wire	8 =GPH	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		
			30	1.2mil		
						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%	25m	75ft	M3-12.5H25 M3-12.5H50 M3-12.5A100	303129
				50m	150ft		303120
				100m	300ft		303121
Ø 15µm (Ø 0.6 mil)	2.0 gf Min	19.6 mN Min	1.0~6.0%	25m	75ft	M3-15H25 M3-15H50 M3-15A100	303159
				50m	150ft		303150
				100m	300ft		303151
Ø 18µm (Ø 0.7 mil)	4.6~7.1 gf	44~73 mN	12.0~6.0%	25m	75ft	M3-18H25 M3-18H50 M3-18A100	303189
				50m	150ft		303180
				100m	300ft		303181
Ø 20µm (Ø 0.8 mil)	5.7~8.8 gf	56~86 mN	2.0~6.0%	25m	75ft	M3-20H25 M3-20H50 M3-20A100	303209
				50m	150ft		303200
				100m	300ft		303201
Ø 25µm (Ø 1.0 mil)	8.9~13.8 gf	87~135 mN	2.0~7.0%	25m	75ft	M3-25H25 M3-25H50 M3-25A100 M3-25A300	303259
				50m	150ft		303250
				100m	300ft		303251
				300m	1000ft		303253
Ø 30µm (Ø 1.2 mil)	12.9~19.8 gf	127~194 mN	2.0~9.0%	25m	150ft	M3-30H25 M3-30H50 M3-30A100	303309
				50m	150ft		303300
				100m	300ft		303301
Ø 32µm (Ø 1.25 mil)	14.7~22.6 gf	144~222 mN	2.0~9.0%	25m	75ft	M3-32H25 M3-32H50 M3-32A100	303329
				50m	150ft		303320
				100m	300ft		303321
Ø 33µm (Ø 1.3 mil)	15.6~24.0 gf	153~235 mN	2.0~9.0%	25m	75ft	M3-33H25 M3-33H50 M3-33A100	303339
				50m	150ft		303330
				100m	300ft		303331
Ø 35µm (Ø 1.4 mil)	17.5~27.0 gf	172~265 mN	3.0~9.0%	25m	75ft	M3-35H25 M3-35H50 M3-35A100	303359
				50m	150ft		303350
				100m	300ft		303351
Ø 38µm (Ø 1.5 mil)	20.7~31.8 gf	203~312 mN	4.0~12.0%	25m	75ft	M3-38H25 M3-38H50 M3-38A100	303389
				50m	150ft		303380
				100m	300ft		303381
Ø 50µm (Ø 2.0 mil)	35.8~55.1 gf	351~541 mN	4.0~15.0%	25m	75ft	M3-50H25 M3-50H50 M3-50A100	303509
				50m	150ft		303500
				100m	300ft		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	45.5mm	47.0mm	AL-4	B
	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.**

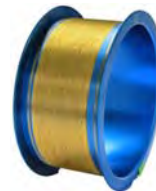
**Note 2: Good 2nd bond stitch remaining after pull test. Good squashed ball shape.**

**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**



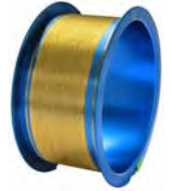
# M3 Type How to Order



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>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 (B) 2500 8000ft (B)
	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> 9 = 25m (75ft) 0 = 50m (150ft) 1 = 100m (300ft) 3 = 300m (1000ft) 5 = 500m (1500ft) 6 = 1000m (3000ft) 7 = 2500m (8000ft)
				Meters controlling

# 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	45.5mm	47.0mm	AL-4	B

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.

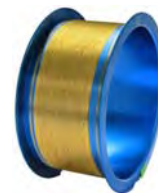
Note 2: Minimal deviation of ball neck height after bumping with steady bump shape.

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



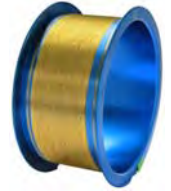
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### Explanation of difference between Gold Bump Wire and Gold Bonding Wire.

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

## 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
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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.

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

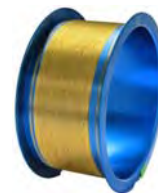
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Note 3: Low deterioration of shear strength during aging test at 200°C. No bond pad damage after bonding.

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



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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 Wedge Bond 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	300ft	Y-62.5B100	331631
Ø 65µm (Ø 2.5 mil)	53.4~86.6 gf	527~856 mN	2.0~12%	100m	300ft	Y-65B100	331651
Ø 75µm (Ø 3.0 mil)	70.7~114.9 gf	699~1134 mN	2.0~12%	100m	300ft	Y-75B100	331751
Ø 100µm (Ø 4.0 mil)	120 gf Min	1160 mN Min	>3.0%	100m	300ft	Y-100P100	331001
Ø 127µm (Ø 5.0 mil)	150 gf Min	1450 mN Min	>3.0%	100m	300ft	Y-127P100	331011
Ø 150µm (Ø 6.03 mil)	200 gf Min	1935 mN Min	>3.0%	100m	300ft	Y-150P100	331021
Ø 175µm (Ø 7.0 mil)	250 gf Min	2400 mN Min	>4.0%	100m	100ft	Y-178P100	331031
Ø 203µm (Ø 8.0 mil)	325 gf Min	3140 mN Min	>4.0%	100m	300ft	Y-203P100	331041
Ø 254µm (Ø10.0 mil)	400 gf Min	3800 mN Min	>5.0%	100m	300ft	Y-254P100	331051

## 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 3.5"	10mm 0.40"	50mm 2.0"	3mm 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 , Ø175~203µm ±7µm , Ø254µm ±10µm  
Note 3: Wire Diameter available: 65µm , 75µm , 100µm , 127µm , 150µm , 203µm , 254µm

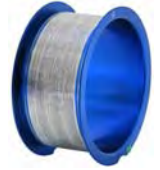
# Y Type How to Order



Part Number System				
<u>Y</u>	-	<u>127</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  and  BSOB Ball Stitch on Ball Safety Bond		<b>Code Mil</b> 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	<b>Aluminum Spool</b> B = 2"x2" AL-4  <b>Polycarbonate Spool</b> P = 3.5"x1.5" 88	<b>Meters Feet Spool</b> 62.5 ~ 75µm (2.5 ~ 3.0MIL) 100 300ft (B)  100 ~ 254µm (4.0 ~ 10MIL) 100 300ft (P)
				Meters controlling dimension

Order Number				
<u>3</u>	<u>3</u>	<u>1</u>	<u>01</u>	<u>1</u>
Alloy	Shape	Model	Ø Diameter	Length
<b>Code • Description</b> 3 = Gold (Au)	<b>Code Description</b> 3 = Round Wire	<b>Gold Wire (Au)</b> 1 = Y	<b>Code um Mil</b> 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	<b>Code Meters Feet</b> 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	B

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.

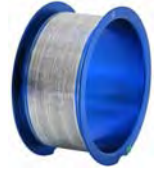
Note 6: For SEB Type, change 3rd digit in order number to "2"

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	
<b>Silver (Ag100)</b> SEA = Bonding Wire SEB = Bonding Wire SEC = Bonding Wire		<b>Code</b>	<b>Mil</b>	<b>Aluminum Spool</b> A = 2"x1" AL-2(W) B = 2"x2" AL-4	<b>Meters</b>	<b>Feet</b> <b>Spool</b>
		15	0.6mil		100	300ft (A)
		18	0.7mil		300	1000ft (A)
		20	0.8mil		500	1500ft (A)
		23	0.9mil		1000	3000ft (B)
		25	1.0mil		2500	8000ft (B)
		28	1.1mil			
		30	1.2mil			
						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
<b>Code • Description</b> 5 = Silver (Ag)	<b>Code Description</b> 0 = Round Wire	<b>Type</b> 1 = SEA 2 = SEB 3 = SEC	<b>µm</b>	<b>Mil</b>	<b>Code Meters Feet</b>
			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	
					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: CLR1-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		<b>Code</b> <b>Mil</b>	<b>Conductive Spool</b>	<b>Meters</b> <b>Feet</b> <b>Spool</b>
		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		Meters controlling dimension			
		30 1.2mil					
		32 1.25mil					
		35 1.4mil					
		38 1.5mil					
		40 1.6mil					
		50 2.0mil					
		60 2.4mil					
	70 2.7mil						

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	Meters controlling	
			32	1.25mil		
			35	1.4mil		
			38	1.5mil		
			40	1.6mil		
			50	2.0mil		
			60	2.4mil		
			70	2.7mil		

# 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
Ø 50µm (Ø 2.0 mil)	26.5~57.9 gf	260~568 mN	14~26%	100m	300ft	CFB1-50N100	702501
				300m	1000ft	CFB1-50N300	702503
				500m	1500ft	CFB1-50N500	702505
Ø 70µm (Ø 2.8 mil)	52.0~113.5 gf	510~1113 mN	14~26%	100m	300ft	CFB1-70N100	702701
				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 100µm (Ø 4 mil)	102~305 gf	1.0~3.0 N	5~35%	100m	300ft	CP1-100P100	707001
Ø 125µm (Ø 5 mil)	153~356 gf	1.5~3.5 N	5~35%	100m	300ft	CP1-125P100	707011
Ø 150µm (Ø 6 mil)	255~560 gf	2.5~5.5 N	5~35%	100m	300ft	CP1-150P100	707021
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: 100µm, 125µm, 150µm, 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		<u>Code</u> <u>Mil</u>	<u>Polycarbonate Spool</u>	<u>Meters</u>	<u>Feet</u>	<u>Spool</u>
		100 4mil	P = Ø 88mm x 31mm	100	328ft	(P)
		125 5mil	Ø 3.5" x 1.25"	200	650ft	(P)
		150 6mil		300	1000ft	(P)
		200 8mil		400	1300ft	(P)
		250 10mil		500	1600ft	(P)
		300 12mil	R = Ø120mm x 38mm	400~500um		
		380 15mil	Ø 3.5" x 1.25"	<u>Meters</u>	<u>Feet</u>	<u>Spool</u>
		400 16mil		100	328ft	(P)
		500 20mil		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> 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	<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
100um	No. 88B	No. 88B	No. 88B	No. 88B	No. 88B	No. 88B	No. 88B	No. 88B	No. 88B
125um	No. 88B	No. 88B	No. 88B	No. 88B	No. 88B	No. 88B	No. 88B	No. 88B	No. 88B
150um	No. 88B	No. 88B	No. 88B	No. 88B	No. 88B	No. 88B	No. 88B	No. 88B	No. 88B
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	B
	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

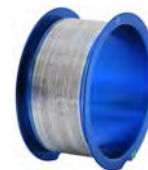
Note 1: Uniform distribution of Si and stable mechanical property.

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) B = 2"x2" AL-4 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 (B) 2500 8000ft (B)	
		35 1.4mil			
		38 1.5mil			
		40 1.6mil			
		50 2.0mil			
		80 3.0mil			
					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 Type Aluminum (Al) Power Large Diameter Bonding Wire



Ø Diameter	Breaking Load (gf)	Breaking Load (N)	Elongation EL (%)	Soft	Length Meters	Length Feet	Part Number	Order Nr
Ø 100µm (Ø 4mil)	50~80 gf	0.49~0.78N	10~30%	Soft 1	100m 500m	300ft 1500ft	TANW-100K100 TANW-100K500	405001 405005
Ø 125µm (Ø 5mil)	60~120 gf	0.69~1.18 N	10~30%	Soft 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%	Soft 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%	Soft 1	100m 500m	300ft 1500ft	TANW-175K100 TANW-175K500	405031 405035
Ø 200µm (Ø 8mil)	140~200 gf	1.37~1.96N	10~30%	Soft 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%	Soft 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%	Soft 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%	Soft 2	100m 500m	300ft 1500ft	TANW-350K100 TANW-350K500	405071 405075
Ø 380µm (Ø 15mil)	500~700 gf	4.90~6.86N	10~30%	Soft 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%	Soft 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%	Soft 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%	Soft 2	100m 300m	300ft 1000ft	TANW-500K100 TANW-500K300	405111 405113
Ø 600µm (Ø 24mil)	900~1200 gf	10.85~12.00 N	10~30%	Soft 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 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

# TANW-MID Type 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%	MID	100m 500m	300ft 1500ft	TANW-MID-100K100 TANW-MID-100K500	406001 406005
Ø 125µm (Ø 5mil)	80-120 gf	0.69-1.18 N	10-30%	MID	100m 500m	300ft 1500ft	TANW-MID-125K100 TANW-MID-125K500	406011 406015
Ø 150µm (Ø 6mil)	100-200 gf	0.98-1.96 N	10-30%	MID	100m 500m	300ft 1500ft	TANW-MID-150K100 TANW-MID-150K500	406021 406025
Ø 175µm (Ø 7mil)	140-240 gf	1.37-2.35 N	10-30%	MID	100m 500m	300ft 1500ft	TANW-MID-175K100 TANW-MID-175K500	406031 406035
Ø 200µm (Ø 8mil)	140-200 gf	1.37-1.96N	10-30%	MID	100m 500m	300ft 1500ft	TANW-MID-200K100 TANW-MID-200K500	406041 406045
Ø 250µm (Ø 10mil)	210-300 gf	2.06-2.94 N	10-30%	MID	100m 500m	300ft 1500ft	TANW-MID-250K100 TANW-MID-250K500	406051 406055
Ø 300µm (Ø 12mil)	300-420 gf	2.94-4.12 N	10-30%	MID	100m 500m	300ft 1500ft	TANW-MID-300K100 TANW-MID-300K500	406061 406065
Ø 350µm (Ø 14mil)	450-550 gf	4.41-5.39 N	10-30%	MID	100m 500m	300ft 1500ft	TANW-MID-350K100 TANW-MID-350K500	406071 406075
Ø 380µm (Ø 15mil)	500-700 gf	4.90-6.86N	10-30%	MID	100m 500m	300ft 1600ft	TANW-MID-380K100 TANW-MID-380K500	406081 406085
Ø 400µm (Ø 16mil)	550-750 gf	5.39-7.35 N	10-30%	MID	100m 500m	300ft 1600ft	TANW-MID-400K100 TANW-MID-400K500	406091 406095
Ø 450µm (Ø 18mil)	700-850 gf	6.86-8.34 N	10-30%	MID	100m 300m	300ft 1000ft	TANW-MID-450K100 TANW-MID-450K300	406101 406103
Ø 500µm (Ø 20mil)	1100-1700 gf	11.3-17.3 N	15-45%	MID	100m 300m	300ft 1000ft	TANW-MID-500K100 TANW-MID-500K300	406111 406113
Ø 600µm (Ø 24mil)	1200-1700 gf	11.7-17.3 N	10-40%	MID	100m 200m	300ft 600ft	TANW-MID-600K100 TANW-MID-600K200	406121 406122

## 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

# TANW-HARD Type 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%	HARD	100m 500m	300ft 1500ft	TANW-HARD-100K100 TANW-HARD-100K500	407001 407005
Ø 125µm (Ø 5mil)	60-120 gf	0.69-1.18 N	10-30%	HARD	100m 500m	300ft 1500ft	TANW-HARD-125K100 TANW-HARD-125K500	407011 407015
Ø 150µm (Ø 6mil)	100-200 gf	0.98-1.96 N	10-30%	HARD	100m 500m	300ft 1500ft	TANW-HARD-150K100 TANW-HARD-150K500	407021 407025
Ø 175µm (Ø 7mil)	140-240 gf	1.37-2.35 N	10-30%	HARD	100m 500m	300ft 1500ft	TANW-HARD-175K100 TANW-HARD-175K500	407031 407035
Ø 200µm (Ø 8mil)	140-200 gf	1.37-1.96N	10-30%	HARD	100m 500m	300ft 1500ft	TANW-HARD-200K100 TANW-HARD-200K500	407041 407045
Ø 250µm (Ø 10mil)	210-300 gf	2.06-2.94 N	10-30%	HARD	100m 500m	300ft 1500ft	TANW-HARD-250K100 TANW-HARD-250K500	407051 407055
Ø 300µm (Ø 12mil)	300-420 gf	2.94-4.12 N	10-30%	HARD	100m 500m	300ft 1500ft	TANW-HARD-300K100 TANW-HARD-300K500	407061 407065
Ø 350µm (Ø 14mil)	450-550 gf	4.41-5.39 N	10-30%	HARD	100m 500m	300ft 1500ft	TANW-HARD-350K100 TANW-HARD-350K500	407071 407075
Ø 380µm (Ø 15mil)	750-1100 gf	7.6-11.3N	15-40%	HARD	100m 500m	300ft 1600ft	TANW-HARD-380K100 TANW-HARD-380K500	407081 407085
Ø 400µm (Ø 16mil)	900-1400 gf	9.2-14.2 N	15-45%	HARD	100m 500m	300ft 1600ft	TANW-HARD-400K100 TANW-HARD-400K500	407091 407095
Ø 450µm (Ø 18mil)	1200-1700 gf	12.2-17.3 N	5-40%	HARD	100m 300m	300ft 1000ft	TANW-HARD-450K100 TANW-HARD-450K300	407101 407103
Ø 500µm (Ø 20mil)	1800-2200 gf	18.3-22.7 N	5-30%	HARD	100m 300m	300ft 1000ft	TANW-HARD-500K100 TANW-HARD-500K300	407111 407113
Ø 600µm (Ø 24mil)	200-1700 gf	11.7-17.3 N	10-40%	HARD	100m 200m	300ft 600ft	TANW-HARD-600K100 TANW-HARD-600K200	407121 407122

## 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 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**

# TANW Type How to Order SOFT-MID-HARD



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> Mid-Range Breaking Load		<b>Code Mil</b> 300 12mil 350 14mil 380 15mil 400 16mil			
<b>TANW-HARD</b> Highest Breaking Load		<b>Code Mil</b> 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

# 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
0.5mm (± 0.050mm)	0.1mm (± 0.010mm)	275~425 gf	2.70~4.17N	≥10%	100m	300ft	TABR-500x100P100	412461
					200m	600ft	TABR-500x100P200	412462
0.75mm (± 0.050mm)	0.1mm (± 0.010mm)	413~638 gf	4.05~6.26N	≥10%	100m	300ft	TABR-750x100P100	412481
					300m	1000ft	TABR-750x100P300	412483
1.0mm (± 0.050mm)	0.1mm (± 0.010mm)	550~850 gf	5.39~8.34N	≥10%	100m	300ft	TABR-1000x100P100	412491
					500m	1500ft	TABR-1000x100R500	412495
	0.15mm (± 0.015mm)	675~1125 gf	6.62~11.03N	≥10%	100m	300ft	TABR-1000x150P100	412641
					400m	1300ft	TABR-1000x150R400	412644
	0.20mm (± 0.020mm)	900~1500 gf	8.83~14.71N	≥10%	100m	300ft	TABR-1000x200P100	412841
					400m	1300ft	TABR-1000x200R400	412844
1.5mm (± 0.050mm)	0.1mm (± 0.010mm)	715~1225 gf	7.0~12.0N	≥10%	100m	300ft	TABR-1500x100P100	412421
					400m	1300ft	TABR-1500x100R400	412424
	0.15mm (± 0.015mm)	1013~1688 gf	9.93~16.55N	≥10%	100m	300ft	TABR-1500x150P100	412651
					300m	1000ft	TABR-1500x150R300	412653
	0.20mm (± 0.020mm)	1350~2250 gf	13.24~22.06N	≥10%	100m	300ft	TABR-1500x200P100	412851
				400m	1300ft	TABR-1500x200R400	412854	
	0.25mm (± 0.025mm)	1688~2813 gf	16.55~27.59N	≥10%	100m	300ft	TABR-1500x250P100	412951
					300m	1300ft	TABR-1500x250R300	412953
	0.30mm (± 0.030mm)	2025~3375 gf	19.86~33.10N	≥10%	50m	300ft	TABR-1500x300P50	412980
					200m	600ft	TABR-1500x300R200	412982
2.0mm (± 0.10mm)	0.15mm (± 0.015mm)	1350~2250 gf	13.24~22.06N	≥10%	100m	300ft	TABR-2000x150P100	412661
					400m	1300ft	TABR-2000x150R400	412664
	0.20mm (± 0.020mm)	1800~3000 gf	17.65~29.42N	≥10%	100m	300ft	TABR-2000x200P100	412861
					300m	1000ft	TABR-2000x200R300	412863
	0.25mm (± 0.025mm)	2250~3750 gf	22.06~36.77N	≥10%	50m	150ft	TABR-2000x250P50	412960
					200m	600ft	TABR-2000x250R200	412962
	0.30mm (± 0.030mm)	2700~4500 gf	26.48~44.13N	≥10%	50m	150ft	TABR-2000x300P50	412990
					200m	600ft	TABR-2000x300R200	412992

## 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

Meter is controlling dimension

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.

Note 3: Spool code is 4th character from end of part number: "P"=No.88 Spool. "R"=No.120 Spool



# 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
TABR = Aluminum Al Bonding Ribbon		<u>Code</u> <u>W x Th</u> 500x100 = 0.5 x 0.10mm 750x100 = 0.8 x 0.10mm 1000x100 = 1.0 x 0.10mm 1500x100 = 1.0 x 0.10mm 1500x200 = 1.5 x 0.20mm 2000x150 = 2.0 x 0.15mm 2000x200 = 2.0 x 0.20mm 2000x250 = 2.0 x 0.25mm 2000x300 = 2.0 x 0.30mm	<u>Polycarbonate Spool</u> P = Ø 88mm x 31mm Ø 3.5" x 1.25"  R = Ø 120mm x 38mm Ø 4.75" x 1.50"	<u>Meters</u> <u>Feet</u> 50    150ft 100    300ft 200    600ft 300    1000ft 400    1300ft 500    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> 4 = Aluminum	<u>Code</u> <u>Description</u> 1 = Flat Wire	<u>Type</u> 2 =TABR Al Ribbon	<u>Code</u> <u>W x Th</u> See Table Below	<u>Code</u> <u>Meters</u> <u>Feet</u> 0 = 50m (150ft) 1 = 100m (328ft) 2 = 200m (600ft) 3 = 300m (1000ft) 4 = 400m (1300ft) 5 = 500m (1600ft) 9 = other

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

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
	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				
<u><b>AuR</b></u>	<b>-</b>	<u><b>100x12.7</b></u>	<u><b>A</b></u>	<u><b>50</b></u>
Type		Size Code	Spool Type	Length Meters
<b>AuR = Gold Au Bonding Ribbon 4N</b>		<u><b>W x Th</b></u> 25~200 x 12.7um 50~250 x 25um 125 x 50um	<u><b>Aluminum Spool</b></u> <b>A</b> = 2"x1" AL-2 <b>B</b> = 2"x2" AL-4 <b>H</b> = 1/2" HALF	<u><b>Meters</b></u> <u><b>Feet</b></u> <u><b>Spool</b></u> <b>10</b> 33ft   (H) <b>50</b> 150ft   (A)
<b>AuR3 = Gold Au Be Doped 4N</b>		* See Other Sizes		<b>Special:</b> <b>30</b> 100ft   (A)
Meters controlling dimension				

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

Sizes Codes					
<u><b>6um</b></u>	<u><b>12.7um</b></u>	<u><b>25um</b></u>	<u><b>50um</b></u>	<u><b>75um</b></u>	<u><b>100um</b></u>
0.25 mil	0.5mil	1.0mil	2.0mil	3.0mil	4.0mil
<u><b>Code • Width</b></u> <b>00</b> = 25um* <b>01</b> = 38um* <b>02</b> = 50um* <b>03</b> = 75um* <b>04</b> = 100um* <b>05</b> = 125um*	<u><b>Code • Width</b></u> <b>51</b> = 25um <b>38</b> = 38um <b>50</b> = 50um <b>52</b> = 75um <b>53</b> = 100um <b>54</b> = 125um <b>55</b> = 150um <b>56</b> = 200um* <b>57</b> = 250um* <b>58</b> = 300um*	<u><b>Code • Width</b></u> <b>10</b> = 50um <b>11</b> = 75um <b>12</b> = 100um <b>13</b> = 125um <b>14</b> = 150um <b>15</b> = 200um <b>16</b> = 250um <b>17</b> = 300um* <b>18</b> = 380um* <b>19</b> = 500um*	<u><b>Code • Width</b></u> <b>21</b> = 100um* <b>22</b> = 125um <b>23</b> = 150um* <b>24</b> = 200um* <b>25</b> = 250um* <b>26</b> = 300um* <b>27</b> = 380um* <b>28</b> = 500um* <b>29</b> = 635um*	<u><b>Code • Width</b></u> <b>32</b> = 250um* <b>33</b> = 300um* <b>34</b> = 380um* <b>35</b> = 500um* <b>36</b> = 635um* <b>37</b> = 800um* <b>39</b> = 1000um*	<u><b>Code • Width</b></u> <b>43</b> = 250um* <b>44</b> = 300um* <b>45</b> = 380um* <b>46</b> = 500um* <b>47</b> = 635um* <b>48</b> = 800um* <b>49</b> = 1000um* <b>42</b> = 1500um*

Call TopLine for AuR Gold sizes marked with asterisk \*

# AgC Type Silver (Ag) Slit Cut Ribbon 4N Special Applications



Size Width	Size Thickness	Breaking Load (gf)	Breaking Load (N)	Elongation EL (%)	Length Meters	Length Feet	Part Number	Order Nr
2500um 100mil	30um 1.2mil				25m	82ft	AgC-2500x30W25	566082
3000um 120mil	50um 2.0mil				25m	82ft	AgC-3000x50W25	566202
4000um 160mil	70um 2.8mil				25m	82ft	AgC-4000x70W25	566382
5000um 200mil	100um 4.0mil				25m	82ft	AgC-5000x100W25	566402

## 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
	270mm	53mm	182mm	6.5mm	90mm	103mm	ABS Resin	W

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: AgC Type 4N Ag Silver ribbon is fabricated using a slit cut process.**

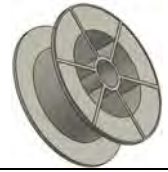
**Note 2: Temper is stress relieved.**

**Note 3: Applications includes RF devices and other special applications.**

**Note 4: Edges are rough with sharp edges. Good surface smoothness.**

**Note 5: Other sizes available. Please contact TopLine.**

# AgC Type How to Order



Part Number System				
<u>AgC</u>	-	<u>3000x50</u>	<u>W</u>	<u>25</u>
Type		Size Code (um)	Spool Type	Length Meters
AgC = Silver Ag Ribbon 4N		<b>W x Th</b> 2500 x 30um (100 x 1.2mil)	<b>ABS Spool</b> W = 11"x4"	<b>Meters Feet Spool</b> <b>25</b> 82ft (W)
		3000 x 50um (120 x 2.0mil)		<b>50</b> 164ft (W)
		4000 x 70um (160 x 2.8mil)		<b>100</b> 328ft (W)
		5000 x 100um (200x4.0mil)		Meters controlling dimension
		<i>Other Sizes Available</i>		

Order Number				
<u>5</u>	<u>6</u>	<u>6</u>	<u>20</u>	<u>2</u>
Alloy	Shape	Model	Size Code	Length
<u>Code</u> • <u>Description</u> 5 = Silver	<u>Code</u> <u>Description</u> 6 = Flat Wire	<u>Type</u> 6 = Ag Slit Cut Ribbon	<u>Code</u> <u>Width x Thick</u> 08 = 2500 x 30um 20 = 3000 x 50um 38 = 4000 x 70um 40 = 5000 x 100um	<u>Code</u> <u>Meters Feet</u> <b>Spool "W"</b> 2 = 25m (82ft) 5 = 50m (164ft) 0 = 100m 328ft)
				Meters controlling

\* Call TopLine for other AgC Silver sizes.

# CPR-1 Type Copper Cu Bonding Ribbon



Size Width	Size Thickness	Breaking Load (gf)	Breaking Load (N)	Elongation EL (%)	Length Meters	Length Feet	Part Number	Order Nr
500µm (±50µm)	100µm (±10µm)	Call	Call	≥10%	100m 200m	300ft 600ft	CPR1-500x100P100 CPR1-500x100P200	773461 773462
1000µm (±100µm)		Call	Call	≥10%	100m 200m	300ft 600ft	CPR1-1000x100P100 CPR1-1000x100P200	773491 773492
1500µm (±150µm)		Call	Call	≥10%	100m 200m	300ft 600ft	CPR1-1500x100P100 CPR1-1500x100P200	773421 773422
2000µm (±200µm)		Call	Call	≥10%	100m 200m	300ft 600ft	CPR1-2000x100P100 CPR1-2000x100P200	773411 773412
1000µm (±100µm)	150µm (±15µm)	Call	Call	≥10%	100m	300ft	CPR1-1000x150P100	773641
1500µm (±150µm)		Call	Call	≥10%	100m	300ft	CPR1-1500x150P100	773651
2000µm (±200µm)		Call	Call	≥10%	100m	300ft	CPR1-2000x150P100	773661
1000µm (±100µm)	200µm (±20µm)	Call	Call	≥10%	100m	300ft	CPR1-1000x200P100	773841
1500µm (±150µm)		Call	Call	≥10%	100m	300ft	CPR1-1500x200P100	773851
2000µm (±200µm)		Call	Call	≥10%	100m	300ft	CPR1-2000x200P100	773861

## 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	10mm	50mm	3mm	25mm	31mm	No.88	P

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

**INFO**

- Note 1: CPR-1 Type Cu ribbon is fabricated using a dry process.
- Note 2: No lubrication oils are introduced during fabrication. Excellent corrosion resistance.
- Note 3: Tanaka Cu ribbon is made using a rolled process.
- Note 4: Edges are smooth without sharp edges. Good surface smoothness.
- Note 5: Specially formulated winding process assures consistent de-spooling and smooth bonding. Not parallel winding.
- Note 6: Flat Cu ribbon provides an excellent solution for power devices.
- Note 7: Spool code 4th character from end of part number: "P" = No.88 Spool.
- Note 8: CPR-1 Type Cu ribbon wire made in Japan.
- Note 9: Green=Start • Red=End.

# CPR-1 Type How to Order



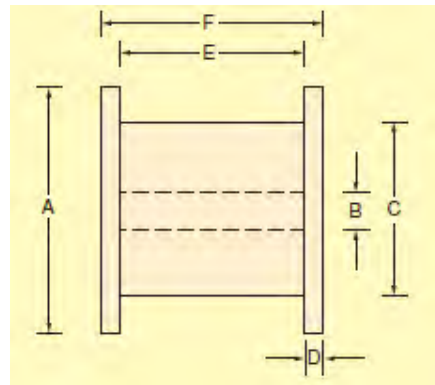
Part Number System																																
<u>CPR1</u>	-	<u>2000 x100</u>	<u>P</u>	<u>100</u>																												
Type		Width x Thickness $\mu\text{m}$	Spool Type	Length Meters																												
Bare Cu Ribbon 4N		<table border="0"> <tr> <td><u>Metric</u></td> <td><u>Mil</u></td> </tr> <tr> <td>500x100um</td> <td>20x4 mil</td> </tr> <tr> <td>1000x100um</td> <td>40x4 mil</td> </tr> <tr> <td>1500x100um</td> <td>60x4 mil</td> </tr> <tr> <td>2000x100um</td> <td>80x4 mil</td> </tr> <tr> <td>1000x150um</td> <td>40x6 mil</td> </tr> <tr> <td>1500x150um</td> <td>60x6 mil</td> </tr> <tr> <td>2000x150um</td> <td>80x6 mil</td> </tr> <tr> <td>1000x200um</td> <td>40x8 mil</td> </tr> <tr> <td>1500x200um</td> <td>60x8 mil</td> </tr> <tr> <td>2000x200um</td> <td>80x8mil</td> </tr> </table>	<u>Metric</u>	<u>Mil</u>	500x100um	20x4 mil	1000x100um	40x4 mil	1500x100um	60x4 mil	2000x100um	80x4 mil	1000x150um	40x6 mil	1500x150um	60x6 mil	2000x150um	80x6 mil	1000x200um	40x8 mil	1500x200um	60x8 mil	2000x200um	80x8mil	<b>Polycarbonate Spool</b> P = $\varnothing$ 88mm x 31mm $\varnothing$ 3.5" x 1.25"  Spool Nbr 88	<table border="0"> <tr> <td><u>Meters</u></td> <td><u>Feet</u></td> </tr> <tr> <td>100</td> <td>300ft</td> </tr> <tr> <td>200</td> <td>600ft</td> </tr> </table> Meters controlling dimension	<u>Meters</u>	<u>Feet</u>	100	300ft	200	600ft
	<u>Metric</u>	<u>Mil</u>																														
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200	600ft																															

Order Number													
<u>7</u>	<u>7</u>	<u>3</u>	<u>41</u>	<u>1</u>									
Alloy	Shape	Model	Size Code	Length									
<u>Code • Description</u> 7 = Copper Type	<u>Code Description</u> 7 = Flat Ribbon	<u>Type</u> 3 =CPR-1 (4N)	<u>Code W x Th</u> See Table Below	<table border="0"> <tr> <td><u>Code</u></td> <td><u>Meters</u></td> <td><u>Feet</u></td> </tr> <tr> <td>1</td> <td>= 100m</td> <td>(300ft)</td> </tr> <tr> <td>2</td> <td>= 200m</td> <td>(600ft)</td> </tr> </table> Meters controlling	<u>Code</u>	<u>Meters</u>	<u>Feet</u>	1	= 100m	(300ft)	2	= 200m	(600ft)
<u>Code</u>	<u>Meters</u>	<u>Feet</u>											
1	= 100m	(300ft)											
2	= 200m	(600ft)											

Sizes Codes		
<u>100um Thickness</u>	<u>150um Thickness</u>	<u>200um Thickness</u>
4.0 mil	6.0mil	8.0mil
<u>Code • Width</u> 46 = 500um 49 = 1000um 42 = 1500um 41 = 2000um	<u>Code • Width</u> 64 = 1000um 65 = 1500um 66 = 2000um	<u>Code • Width</u> 84 = 1000um 85 = 1500um 86 = 2000um

Call for Other CPR-1 sizes

# 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	P
		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	
<b>Au Gold</b>  <u>Model</u> 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	
<b>Ag Silver</b>  <u>Model</u> 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		
<b>Al-1% Si</b>  <u>Model</u> 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		
<b>Power</b> <u>Model</u> 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		
<b>Cu Copper Bare &amp; Plated</b>  <u>Model</u> 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		
<b>Flat Al Ribbon</b>  <u>Model</u> 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	6.0mm Length	10mm Length	20mm Length
Gold Au Ribbon	AuR	25 x 12.7 um	-	0.18 A	-
		38 x 12.7 um	-	0.27 A	-
		50 x 12.7 um	-	0.36 A	-
		75 x 12.7 um	-	0.54 A	-
		100 x 12.7 um	-	0.72 A	-
		125 x 12.7 um	-	0.90 A	-
		150 x 12.7 um	-	1.08 A	-
		75 x 25 um	-	1.08 A	-
		100 x 25 um	-	1.44 A	-
		125 x 25 um	-	1.80 A	-
		150 x 25 um	-	2.16 A	-
		200 x 25 um	-	2.88 A	-
		250 x 25 um	-	3.59 A	-
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	Ø100 um	-	4.0 A	-
		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.



Tanaka@TopLine.tv  
Tel 1-800-776-9888

## 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
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"
401	TALF	Al 2N	IGBT	Discontinued	No.88
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
566	AgC	Silver Ribbon	Slit Cut Ribbon	44~45	W ABS
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	46-47	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.

**EUROPE*****Austria***

Factronix  
Tel +49 8153-90 664-0  
office@factronix.com

***Belgium***

Rotec  
Tel +32 (0) 14 40 21 50  
info@rotec.be

***France***

ATOO electronics  
Tel +33 (02) 99.08.01.90  
info@atoo-electronics.com

***Germany***

Factronix  
Tel +49 8153-90 664-0  
office@factronix.com

***Ireland***

IPP Ltd  
Tel +353 21-423 2233  
sales@ippGroupLtd.com

***Italy (North)***

Cepel talia  
Tel +39 02-4073747  
info@cepeitalia.it

***Italy (South)***

Cepe Forniture  
Tel +39 075.95.61.86  
cepeelettronica@virgilio.it

***Finland***

Koodiportti Oy  
Tel: +358 040 - 5479 338  
jarno.pyoria@koodiportti.com

***Netherlands***

Rotec  
Tel +32 (0) 14 40 21 52  
info@rotec.be

***Poland***

Semicon  
Tel +48 (22) 615-64-31  
info@semicon.com.pl

***Spain***

Necten  
Tel +34 916 942 409  
necten@necten.com

***Switzerland***

Hilpert  
Tel +41 56 483 25 25  
office@hilpert.ch

***Turkey***

Factronix  
Tel +90 (362) 54 391 23  
s.yamanlar@Factronix.com

***United Kingdom***

Kaisertech  
Tel +44-(0)23-8065-0065  
sales@kaisertech.co.uk

**Middle East and Africa*****Israel***

G-Suit  
Tel +972 (08)-910-8878  
G-Suit@TopLine.tv

***South Africa***

Test & Rework  
Tel +27-11-704-6677  
sales@TestAndRework.co.za

## ASIA and Pacific

### *Hong Kong*

Borison Automation

Tel +852 2687-0948

TopLine@borison.com

### *Japan*

ADY

Tel +81-06-6397-0412

TopLine@ADY-JP.com

### *Taiwan*

Zinby

Tel +886-2-8228-0880

Sales1@zinby.com.tw

### *China*

Jamron

Tel +86-21-5109 7866

info@jamron.com

### *Korea*

Jin Trading

Tel +82 (031) 499-5633

Jeong6651@naver.com

### *Vietnam*

Dou Yee Enterprises

Tel +65-6444-2678

marketing@douyee.com

### *China*

Dou Yee

Tel +86-21-5899-4619

marketing@douyee.com

### *Malaysia*

Dou Yee Enterprises

Tel +65-6444-2678

marketing@douyee.com

### *Philippines*

TopLine

Tel +1-478-451-5000

Tanaka@TopLine.tv

### *Indonesia*

Dou Yee Enterprises

Tel +65-6444-2678

marketing@douyee.com

### *Singapore*

Dou Yee Enterprises

Tel +65-6444-2678

marketing@douyee.com

### *Australia*

Suba Engineers

Tel +61-2-9790-0900

Tel +61-3-9583-9311

SubaSyd@suba.com.au

### *India*

EMST Marketing Pvt. Ltd

Tel +91 95 955 25010

contact@emstoline.com

### *Thailand*

Dou Yee Enterprises

Tel +65-6444-2678

marketing@douyee.com

### *New Zealand*

Suba Engineers

Tel +61-2-9790-0900

SubaSyd@suba.com.au

## Americas

### *Argentina*

TopLine

Tel +1-478-451-5000

Tanaka@TopLine.tv

### *Brazil*

TopLine

Tel +1-478-451-5000

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TopLine

Tel +1-800-776-9888

Tanaka@TopLine.tv

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