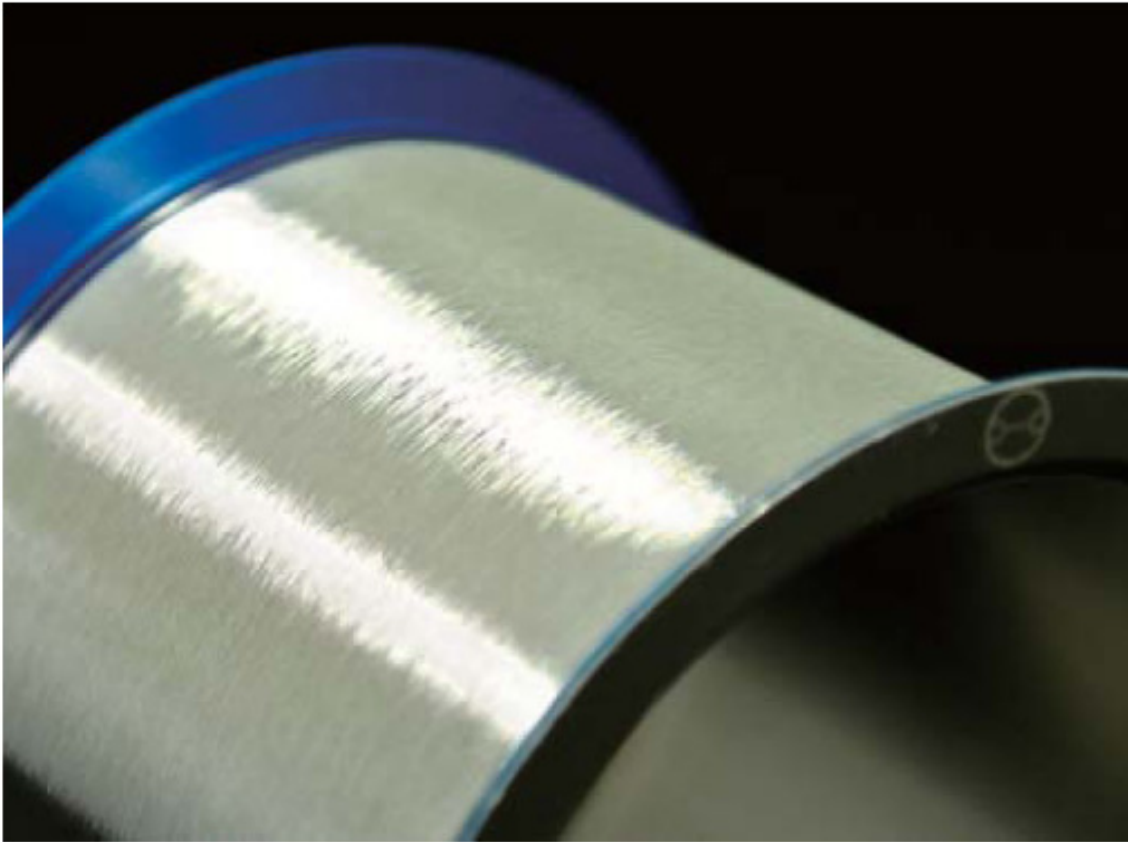


Available from:

TopLine®

Yes ! - One Spool



Bonding Wire

Made by TANAKA

**Product Guide
2017-G**

**Contact:
info@TopLine.tv
Tel 1-800-776-9888**

www.TanakaWire.com

October 2017



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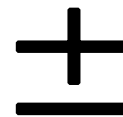
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Contact: info@TopLine.tv
Tel 1-800-776-9888

About TopLine:

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

About Tanaka:

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

Ag Silver Alloy Wire (p12~13)

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 (p16~17)

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.

Al-1% Si - Aluminum Wire (p20~21)

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 (p24~27)

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

Start-End Spool

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

Au Gold Wire (p4~11)

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 series is available for high performance wedge bonding.

PCC - Pd Coated Copper (p14~15)

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 to 70um

Cu Pure Bare Copper Wire (p18~19)

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 (p22~23)

Large diameter aluminum (Al) wire for high power applications. Diameters range from 100um to 500um. 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 info@TopLine.tv
Or call 1-800-776-9888

Contact:

TopLine Corporation

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Milledgeville, GA 31061 USA

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Fax: +1-478-451-3000
Email: info@TopLine.tv

www.TanakaWire.com

We accept credit cards:



Ready to assist you.



Ø Diameter ±1% µm	Breaking Load (gf)	Breaking Load (mN)	EI (%)	HAZ Length	Length Meters	Length Feet	Part Number	Order Nr
Ø 12.5µm (Ø 0.5 mil)	1.7~3.7 gf	16~36 mN	1.0~6.0%	170~190µm	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%	170~190µm	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%	170~190µm	100m 300m 500m 1000m	300ft 1000ft 1500ft 3000ft	GSA-18A100 GSA-18A300 GSA-18A500 GSA-18B1000	300181 300183 300185 300186
Ø 20µm (Ø 0.8 mil)	4.4~9.4 gf	43~92 mN	1.0~7.0%	170~190µm	100m 300m 500m 1000m	300ft 1000ft 1500ft 3000ft	GSA-20A100 GSA-20A300 GSA-20A500 GSA-20B1000	300201 300203 300205 300206
Ø 25µm (Ø 1.0 mil)	7.0~14.7 gf	69~144 mN	1.0~7.0%	170~190µm	100m 300m 500m 1000m	300ft 1000ft 1500ft 3000ft	GSA-25A100 GSA-25A300 GSA-25A500 GSA-25B1000	300251 300253 300255 300256
Ø 30µm (Ø 1.2 mil)	10.0~21.1 gf	98~207 mN	1.5~8.5%	170~190µm	100m 300m 500m	300ft 1000ft 1500ft	GSA-30A100 GSA-30A300 GSA-30A500	300301 300303 300305
Ø 32µm (Ø 1.25 mil)	11.0~23.0 gf	100~210 mN	1.5~8.5%	170~190µm	100m 300m 500m	300ft 1000ft 1500ft	GSA-32A100 GSA-32A300 GSA-32A500	300321 300323 300325
Ø 33µm (Ø 1.3 mil)	12.1~25.5 gf	119~250 mN	1.5~8.5%	170~190µm	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%	150~180µm	100m 300m 500m	300ft 1000ft 1500ft	GSA-38A100 GSA-38A300 GSA-38A500	300381 300383 300385
Ø 50µm (Ø 2.0mil)	27.6~58.3 gf	271~572 mN	1.5~8.5%	150~180µm	100m 300m 500m	300ft 1000ft 1500ft	GSA-50A100 GSA-50A300 GSA-50A500	300501 300503 300505

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: 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 Special Ø50µm ±2 µm

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

GSA Series How to Order



Part Number System				
<u>GSA</u>	-	<u>25</u>	<u>A</u>	<u>100</u>
Series		Ø Diameter µm	Spool Type	Length Meters
Gold 4N (Au99.99) GSA = Stable Stitch		Code Mil 12.5 0.5mil 15 0.6mil 18 0.7mil 20 0.8mil 23 0.9mil 25 1.0mil 28 1.1mil 30 1.2mil 32 1.25mil 33 1.3mil 38 1.5mil 50 2.0mil	Aluminum Spool A = 2"x1" AL-2(W) B = 2"x2" AL-4 H = 1/2"x3/4" AL-1/2	Meters Feet Spool 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
Code • Description 3 = Gold (Au)	Code Description 0 = Round Wire	Gold Wire (Au) 0 = GSA	µm Mil 12.5 0.5mil 15 0.6mil 18 0.7mil 20 0.8mil 23 0.9mil 25 1.0mil 28 1.1mil 30 1.2mil 32 1.25mil 33 1.3mil 38 1.5mil 50 2.0mil	Code Meters Feet 0 = 50m (150ft) 1 = 100m (300ft) 3 = 300m (1000ft) 5 = 500m (1500ft) 6 = 1000m (3000ft) 7 = 2500m (8000ft) 9 = other
				Meters controlling

GLD Series High Performance Wedge Bonding Wire



Ø Diameter ±1% µm	Breaking Load (gf)	Breaking Load (mN)	EI (%)	Length Meters	Length Feet	Part Number	Order Nr
Ø 12.5µm (Ø 0.5 mil)	2.4 gf Min	23 mN Min	3.0% Max	100m	300ft	GLD-15A100	309151
Ø 15µm (Ø 0.6 mil)	3.4 gf Min	33 mN Min	3.0% Max	50m	150ft	GLD-15H50	309150
				100m	300ft	GLD-15A100	309151
				300m	1000ft	GLD-15A300	309153
				500m	1500ft	GLD-15A500	309155
Ø 18µm (Ø 0.7 mil)	4.0 gf Min	39 mN Min	3.5% Max	50m	150ft	GLD-18H50	309180
				100m	300ft	GLD-18A100	309181
				300m	1000ft	GLD-18A300	309183
				500m	1500ft	GLD-18A500	309185
Ø 20µm (Ø 0.8 mil)	6.0 gf Min	59 mN Min	3.5% Max	50m	150ft	GLD-20H50	309200
				100m	300ft	GLD-20A100	309201
				300m	1000ft	GLD-20A300	309203
				500m	1500ft	GLD-20A500	309205
Ø 25µm (Ø 1.0 mil)	16 gf Min	157 mN Min	3.5% Max	50m	150ft	GLD-25H50	309250
				100m	300ft	GLD-25A100	309251
				300m	1000ft	GLD-25A300	309253
				500m	1500ft	GLD-25A500	309255
Ø 30µm (Ø 1.2 mil)	20 gf Min	195 mN Min	3.5% Max	50m	150ft	GLD-30H50	309300
				100m	300ft	GLD-30A100	309301
				300m	1000ft	GLD-30A300	309303
				500m	1500ft	GLD-30A500	309305
Ø 32µm (Ø 1.25 mil)	15~23 gf	147~225 mN	3.0~9.0%	50m	150ft	GLD-32H50	309320
				100m	300ft	GLD-32A100	309321
				300m	1000ft	GLD-32A300	309323
Ø 35µm (Ø 1.4 mil)	19~27 gf	186~264mN	3.0~9.0%	50m	150ft	GLD-35H50	309350
				100m	300ft	GLD-35A100	309351
				300m	1000ft	GLD-35A300	309353

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: 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~35µm ±1 µm

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

GLD Series High Performance Wedge Bonding Wire



Part Number System				
<u>GLD</u>	-	<u>25</u>	<u>A</u>	<u>100</u>
Series		Ø Diameter µm	Spool Type	Length Meters
Gold 4N (Au99.99) GLD = High Performance Wedge Bonding Wire		Code Mil 12.5 0.5mil 15 0.6mil 18 0.7mil 20 0.8mil 23 0.9mil 25 1.0mil 28 1.1mil 30 1.2mil 32 1.25mil 35 1.4mil 38 1.5mil 50 2.0mil	Aluminum Spool A = 2"x1" AL-2(W) B = 2"x2" AL-4 H = 1/2"x3/4" HALF	Meters Feet Spool 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>9</u>	<u>25</u>	<u>1</u>
Alloy	Shape	Model	Ø Diameter	Length
Code • Description 3 = Gold (Au)	Code Description 0 = Round Wire	Gold Wire (Au) 9 = GLD	µm Mil 12.5 0.5mil 15 0.6mil 18 0.7mil 20 0.8mil 25 1.0mil 30 1.2mil 32 1.25mil 35 1.4mil 38 1.5mil 50 2.0mil	Code Meters Feet 0 = 50m (150ft) 1 = 100m (300ft) 3 = 300m (1000ft) 5 = 500m (1500ft) 6 = 1000m (3000ft) 7 = 2500m (8000ft) 9 = other
				Meters controlling

GLF Series Super Low Loop Bonding Wire



Ø Diameter ±1% µm	Breaking Load (gf)	Breaking Load (mN)	EI (%)	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%	60~80µm	100m	300ft	GLF-15A100	307151
					300m	1000ft	GLF-15A300	307153
					500m	1500ft	GLF-15A500	307155
					1000m	3000ft	GLF-15B1000	307156
Ø 18µm (Ø 0.7 mil)	4.5~8.5 gf	44~83 mN	2.0~6.0%	60~80µm	100m	300ft	GLF-18A300	307181
					300m	1000ft	GLF-18A300	307183
					500m	1500ft	GLF-18A500	307185
					1000m	3000ft	GLF-18B1000	307186
Ø 20µm (Ø 0.8 mil)	5.6~10.5 gf	55~103 mN	2.0~7.0%	60~80µm	100m	300ft	GLF-20A100	307201
					300m	1000ft	GLF-20A300	307203
					500m	1500ft	GLF-20A500	307205
					1000m	3000ft	GLF-20B1000	307206
Ø 25µm (Ø 1.0 mil)	8.7~16.4 gf	85~161 mN	2.0~7.0%	60~80µm	100m	300ft	GLF-25A100	307251
					300m	1000ft	GLF-25A300	307253
					500m	1500ft	GLF-25A500	307255
					1000m	3000ft	GLF-25B1000	307256
Ø 30µm (Ø 1.2 mil)	12.5~23.7gf	123~232 mN	2.0~9.0%	60~80µm	100m	300ft	GLF-30A100	307301
					300m	1000ft	GLF-30A300	307303
					500m	1500ft	GLF-30A500	307305
					1000m	3000ft	GLF-30B1000	307306

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

GLF Series Super Low Loop How to Order



Part Number System																																									
<u>GLF</u>	-	<u>25</u>	<u>A</u>	<u>100</u>																																					
Series		Ø Diameter µm	Spool Type	Length Meters																																					
Gold 4N (Au99.99) GLF = Super Low Loop Bonding Wire		<table border="1"> <thead> <tr> <th>Code</th> <th>Mil</th> </tr> </thead> <tbody> <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> </tbody> </table>	Code	Mil	15	0.6mil	18	0.7mil	20	0.8mil	23	0.9mil	25	1.0mil	28	1.1mil	30	1.2mil	<table border="1"> <thead> <tr> <th>Aluminum Spool</th> </tr> </thead> <tbody> <tr><td>A = 2"x1" AL-2(W)</td></tr> <tr><td>B = 2"x2" AL-4</td></tr> </tbody> </table>	Aluminum Spool	A = 2"x1" AL-2(W)	B = 2"x2" AL-4	<table border="1"> <thead> <tr> <th>Meters</th> <th>Feet</th> <th>Spool</th> </tr> </thead> <tbody> <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>Meters controlling dimension</p>	Meters	Feet	Spool	100	300ft	(A)	300	1000ft	(A)	500	1500ft	(A)	1000	3000ft	(B)	2500	8000ft	(B)
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GPG-2 Series High Reliability Bonding Wire



Ø Diameter ±1% µm	Breaking Load (gf)	Breaking Load (mN)	EI (%)	Weight mg/200mm	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%	0.591~ 0.772	100m	300ft	GPG2-15A100	304151
					300m	1000ft	GPG2-15A300	304153
					500m	1500ft	GPG2-15A500	304155
					1000m	3000ft	GPG2-15B1000	304156
Ø 18µm (Ø 0.7 mil)	5.4~9.0 gf	49~88 mN	1.0~7.0%	0.5872~ 1.089	100m	300ft	GPG2-18A100	304181
					300m	1000ft	GPG2-18A300	304183
					500m	1500ft	GPG2-18A500	304185
					1000m	3000ft	GPG2-18B1000	304186
Ø 20µm (Ø 0.8 mil)	6.2~11.1 gf	61~109 mN	1.0~7.0%	1.089~ 1.330	100m	300ft	GPG2-20A100	304201
					300m	1000ft	GPG2-20A300	304203
					500m	1500ft	GPG2-20A500	304205
					1000m	3000ft	GPG2-20B1000	304206
Ø 25µm (Ø 1.0 mil)	9.7~17.4 gf	95~171 mN	2.0~7.0%	1.737~ 2.039	100m	300ft	GPG2-25A100	304251
					300m	1000ft	GPG2-25A300	304253
					500m	1500ft	GPG2-25A500	304255
					1000m	3000ft	GPG2-25B1000	304256
Ø 30µm (Ø 1.2 mil)	13.9~25.1gf	123~232 mN	2.0~7.0%	2.536~ 2.898	100m	300ft	GPG2-30A100	304301
					300m	1000ft	GPG2-30A300	304303
					500m	1500ft	GPG2-30A500	304305
					1000m	3000ft	GPG2-30B1000	304306
Ø 33µm (Ø 1.3 mil)	18.1~27.4gf	177~268 mN	2.0~7.0%	2.898~ 3.284	100m	300ft	GPG2-33A100	304331
					300m	1000ft	GPG2-33A300	304333
					500m	1500ft	GPG2-33A500	304335
					1000m	3000ft	GPG2-33B1000	304336

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: 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 , 33µm

GPG-2 Series High Reliability Bonding How to Order



Part Number System																																												
<u>GPG2</u>	-	<u>25</u>	<u>A</u>	<u>100</u>																																								
Series		Ø Diameter µm	Spool Type	Length Meters																																								
Gold 2N (Au99-Pd1) GPG-2 = Super High Reliability Bonding Wire		<table style="margin-left: auto; margin-right: auto;"> <tr> <th style="text-align: left;"><u>Code</u></th> <th style="text-align: left;"><u>Mil</u></th> </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> </table>	<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	<table style="margin-left: auto; margin-right: auto;"> <tr> <th style="text-align: left;"><u>Aluminum Spool</u></th> <th></th> </tr> <tr> <td>A = 2"x1"</td> <td>AL-2(W)</td> </tr> <tr> <td>B = 2"x2"</td> <td>AL-4</td> </tr> </table>	<u>Aluminum Spool</u>		A = 2"x1"	AL-2(W)	B = 2"x2"	AL-4	<table style="margin-left: auto; margin-right: auto;"> <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> <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> </table>	<u>Meters</u>	<u>Feet</u>	<u>Spool</u>	100	300ft	(A)	300	1000ft	(A)	500	1500ft	(A)	1000	3000ft	(B)	2500	8000ft	(B)
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Order Number																																																			
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Alloy	Shape	Model	Ø Diameter	Length																																															
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				Meters controlling																																															



Ø Diameter ±1% µm	Breaking Load (gf)	Breaking Load (mN)	EI (%)	Weight mg/200mm	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%	0.591~0.772	100m	300ft	GPH-15A100	308151
					300m	1000ft	GPH-15A300	308153
					500m	1500ft	GPH-15A500	308155
					1000m	3000ft	GPH-15B1000	308156
Ø 18µm (Ø 0.7 mil)	5.0~9.0 gf	49~88 mN	1.0~7.0%	0.5872~1.089	100m	300ft	GPH-18A100	308181
					300m	1000ft	GPH-18A300	308183
					500m	1500ft	GPH-18A500	308185
					1000m	3000ft	GPH-18B1000	308186
Ø 20µm (Ø 0.8 mil)	6.2~11.1 gf	61~109 mN	1.0~7.0%	1.089~1.330	100m	300ft	GPH-20A100	308201
					300m	1000ft	GPH-20A300	308203
					500m	1500ft	GPH-20A500	308205
					1000m	3000ft	GPH-20B1000	308206
Ø 25µm (Ø 1.0 mil)	9.7~17.4 gf	95~171 mN	2.0~7.0%	1.737~2.039	100m	300ft	GPH-25A100	308251
					300m	1000ft	GPH-25A300	308253
					500m	1500ft	GPH-25A500	308255
					1000m	3000ft	GPH-25B1000	308256
Ø 30µm (Ø 1.2 mil)	13.9~25.1gf	123~232 mN	2.0~7.0%	2.536~2.898	100m	300ft	GPH-30A100	308301
					300m	1000ft	GPH-30A300	308303
					500m	1500ft	GPH-30A500	308305
					1000m	3000ft	GPH-30B1000	308306

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: 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

GPH Series High Reliability Bonding How to Order



Part Number System				
<u>GPH</u>	-	<u>25</u>	<u>A</u>	<u>100</u>
Series		∅ Diameter μm	Spool Type	Length Meters
Gold 2N (Au99-x) GPH= High Reliability Bonding Wire		Code Mil 15 0.6mil 18 0.7mil 20 0.8mil 23 0.9mil 25 1.0mil 28 1.1mil 30 1.2mil	Aluminum Spool A = 2"x1" AL-2(W) B = 2"x2" AL-4	Meters Feet Spool 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>8</u>	<u>25</u>	<u>1</u>
Alloy	Shape	Model	∅ Diameter	Length
Code • Description 3 = Gold (Au)	Code Description 0 = Round Wire	Gold Wire (Au) 8 =GPH	μm Mil 15 0.6mil 18 0.7mil 20 0.8mil 23 0.9mil 25 1.0mil 28 1.1mil 30 1.2mil	Code Meters Feet 1 = 100m (300ft) 3 = 300m (1000ft) 5 = 500m (1500ft) 6 = 1000m (3000ft) 7 = 2500m (8000ft) 9 = other Meters controlling

M3 Series Gold 4N (Au) Manual Bonder Wire



Ø Diameter ±1% µm	Breaking Load (gf)	Breaking Load (mN)	EI (%)	Length Meters	Length Feet	Part Number	Order Nr
Ø 20µm (Ø 0.8 mil)	6.0~9.0 gf	59~88 mN	2.0~6.0%	50m	150ft	M3-20H50 M3-20A100 M3-20A300 M3-20A500	303200
				100m	300ft		303201
				300m	1000ft		303203
				500m	1500ft		303205
Ø 25µm (Ø 1.0 mil)	9.0~13.5 gf	88~132 mN	2.0~7.0%	50m	150ft	M3-25H50 M3-25A100 M3-25A300 M3-25A500	303250
				100m	300ft		303251
				300m	1000ft		303253
				500m	1500ft		303255
Ø 30µm (Ø 1.2 mil)	13.0~18.0 gf	127~177 mN	2.0~9.0%	50m	150ft	M3-30H50 M3-30A100 M3-30A300 M3-30A500	303300
				100m	300ft		303301
				300m	1000ft		303303
				500m	1500ft		303305
Ø 32µm (Ø 1.25 mil)	15.0~20.0 gf	147~196 mN	3.0~9.0%	50m	150ft	M3-32H50 M3-32A100 M3-32A300 M3-32A500	303320
				100m	300ft		303321
				300m	1000ft		303323
				500m	1500ft		303325
Ø 38µm (Ø 1.5 mil)	20.0~30.0 gf	196~294 mN	4.0~12.0%	50m	150ft	M3-38H50 M3-38A100 M3-38A300 M3-38A500	303380
				100m	300ft		303381
				300m	1000ft		303383
				500m	1500ft		303385

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.

Note 3: 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: Ø20µm~38µm ±1 µm

Note 4: Wire Diameter available: 20µm , 23µm , 25µm , 28µm , 30µm , 32µm , 38µm

M3 Series How to Order



Part Number System				
<u>M3</u>	-	<u>25</u>	<u>A</u>	<u>100</u>
Series		Ø Diameter µm	Spool Type	Length Meters
Gold 4N (Au99.99) M3 = Legacy 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	Aluminum Spool 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> 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> 20 0.8mil 23 0.9mil 25 1.0mil 28 1.1mil 30 1.2mil 32 1.25mil 38 1.5mill	<u>Code</u> <u>Meters</u> <u>Feet</u> 0 = 50m (150ft) 1 = 100m (300ft) 3 = 300m (1000ft) 5 = 500m (1500ft) 6 = 1000m (3000ft) 7 = 2500m (8000ft) 9 = other
				Meters controlling

GBC Series Gold 2N (Au) Bumping Wire



Ø Diameter ±1% µm	Breaking Load (gf)	Breaking Load (mN)	EI (%)	Weight mg/200mm	Length Meters	Length Feet	Part Number	Order Nr
Ø 15µm (Ø 0.6 mil)	>3.0 gf	>29 mN	1.5~4.0%	0.594~ 0.772	100m	300ft	GBC-15A100 GBC-15A300 GBC-15A500 GBC-15B1000	305151
					300m	1000ft		305153
					500m	1500ft		305155
					1000m	3000ft		305156
Ø 18µm (Ø 0.7 mil)	>5.0 gf	>49 mN	1.5~4.0%	0.872~ 1.089	100m	300ft	GBC-18A100 GBC-18A300 GBC-18A500 GBC-18B1000	305181
					300m	1000ft		305183
					500m	1500ft		305185
					1000m	3000ft		305186
Ø 20µm (Ø 0.8 mil)	>9.0 gf	>88 mN	1.5~4.0%	1.089~ 1.330	100m	300m	GBC-20A100 GBC-20A300 GBC-20A500 GBC-20B1000	305201
					300m	1000ft		305203
					500m	1500ft		305205
					1000m	3000ft		305206
Ø 25µm (Ø 1.0 mil)	>11.0 gf	>108 mN	1.0~5.0%	1.737~ 2.039	100m	300ft	GBC-25A100 GBC-25A300 GBC-25A500 GBC-25B1000	305251
					300m	1000ft		305253
					500m	1500ft		305255
					1000m	3000ft		305256
Ø 30µm (Ø 1.2 mil)	>15 gf	<147 mN	1.5~5.0%	2.536~ 2.898	100m	300ft	GBC-30A100 GBC-30A300 GBC-30A500	305301
					300m	1000ft		305303
					500m	1500ft		305305
Ø 32µm (Ø 1.25 mil)	>18.0 gf	>177 mN	1.5~5.0%	2.898~ 3.284	100m	300ft	GBC32A100 GBC-32A300 GBC-32A500	305321
					300m	1000ft		305323
					500m	1500ft		305325
Ø 35µm (Ø 1.4 mil)	>27.0 gf	>265 mN	1.5~6.0%	3.486~ 3.909	100m	300ft	GBC32A100 GBC-32A300 GBC-32A500	305321
					300m	1000ft		305323
					500m	1500ft		305325
Ø 38µm (Ø 1.5 mil)	>30.0 gf	>294 mN	1.5~6.0%	4.129~ 4.587	100m	300ft	GBC-38A100 GBC-38A300 GBC-38A500	305381
					300m	1000ft		305383
					500m	1500ft		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 Series How to Order



Part Number System				
<u>GBC</u>	-	<u>25</u>	<u>A</u>	<u>100</u>
Series		Ø Diameter µm	Spool Type	Length Meters
Gold 2N (Au99-Pd1) GBC = Bumping Wire		<u>Code</u> <u>Mil</u> 15 0.6mil 18 0.7mil 20 0.8mil 23 0.9mil 25 1.0mil 28 1.1mil 30 1.2mil 32 1.25mil 35 1.4mil 38 1.5mil	<u>Aluminum Spool</u> A = 2"x1" AL-2(W) B = 2"x2" AL-4	<u>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>5</u>	<u>25</u>	<u>1</u>
Alloy	Shape	Model	Ø Diameter	Length
<u>Code • Description</u> 3 = Gold (Au) 2N	<u>Code</u> <u>Description</u> 0 = Round Wire	<u>Gold Wire (Au)</u> 5 = GBC	<u>µm</u> <u>Mil</u> 15 0.6mil 18 0.7mil 20 0.8mil 23 0.9mil 25 1.0mil 28 1.1mil 30 1.2mil 32 1.25mil 35 1.4mil 38 1.5mil	<u>Code</u> <u>Meters</u> <u>Feet</u> 1 = 100m (300ft) 3 = 300m (1000ft) 5 = 500m (1500ft) 6 = 1000m (3000ft) 7 = 2500m (8000ft) 8 = 5000m (16000ft) 9 = other
				Meters controlling

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

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

GBE Series Gold 4N (Au) Bumping Wire



Ø Diameter ±1% µm	Breaking Load (gf)	Breaking Load (mN)	EI (%)	Density 20°C	Length Meters	Length Feet	Part Number	Order Nr
Ø 15µm (Ø 0.6 mil)	>3.0 gf	>29mN	1.0~4.0%	Au 19.32	100m 300m 500m 1000m	300ft 1000ft 1500ft 3000ft	GBE-15A100 GBE-15A300 GBE-15A500 GBE-15B1000	301151 301153 301155 301156
Ø 18µm (Ø 0.7 mil)	>6.0 gf	>59mN	1.0~4.0%	Au 19.32	100m 300m 500m 1000m	300ft 1000ft 1500ft 3000ft	GBE-18A100 GBE-18A300 GBE-18A500 GBE-18B1000	301181 301183 301185 301186
Ø 20µm (Ø 0.8 mil)	>8.0 gf	>78 mN	1.0~4.0%	Au 19.32	100m 300m 500m 1000m	300ft 1000ft 1500ft 3000ft	GBE-20A100 GBE-20A300 GBE-20A500 GBE-20B1000	301201 301203 301205 301206
Ø 25µm (Ø 1.0 mil)	>14 gf	>137 mN	1.0~5.0%	Au 19.32	100m 300m 500m 1000m	300ft 1000ft 1500ft 3000ft	GBE-25A100 GBE-25A300 GBE-25A500 GBE-25B1000	301251 301253 301255 301256
Ø 30µm (Ø 1.2 mil)	>20 gf	<196 mN	1.0~5.0%	Au 19.32	100m 300m 500m	300ft 1000ft 1500ft	GBE-30A100 GBE-30A300 GBE-30A500	301301 301303 301305
Ø 32µm (Ø 1.25 mil)	>23 gf	>226 mN	1.0~5.0%	Au 19.32	100m 300m 500m	1000ft 1000ft 1500ft	GBE-32A100 GBE-32A300 GBE-32A500	301321 301323 301325
Ø 35µm (Ø 1.4 mil)	>27 gf	>265 mN	1.0~5.0%	Au 19.32	100m 300m 500m	1000ft 1000ft 1500ft	GBE-35A100 GBE-35A300 GBE-35A500	301351 301353 301355
Ø 38µm (Ø 1.5 mil)	>32 gf	>314 mN	1.0~6.0%	Au 19.32	100m 300m 500m	1000ft 1000ft 1500ft	GBE-38A100 GBE-38A300 GBE-38A500	301381 301383 301385

Spool Information

Type	A Flange Diameter	B Shaft Diameter	C Hub Diameter	D Hub Thickness	E Winding Width	F Overall Width	Style	Part Nr Code
	58.5mm	48.8mm	50.3mm	0.75mm	26.4mm	27.9mm	AL-2(W)	A
	58.5mm	48.8mm	50.3mm	0.75mm	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. 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 Series How to Order



Part Number System																																															
<u>GBE</u>	-	<u>25</u>	<u>A</u>	<u>100</u>																																											
Series		Ø Diameter µm	Spool Type	Length Meters																																											
Gold 4N (Au100) GBE = Bumping Wire		<table border="1"> <thead> <tr> <th>Code</th> <th>Mil</th> </tr> </thead> <tbody> <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> </tbody> </table>	Code	Mil	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	<table border="1"> <thead> <tr> <th>Aluminum Spool</th> </tr> </thead> <tbody> <tr> <td>A = 2"x1" AL-2(W)</td> </tr> <tr> <td>B = 2"x2" AL-4</td> </tr> </tbody> </table>	Aluminum Spool	A = 2"x1" AL-2(W)	B = 2"x2" AL-4	<table border="1"> <thead> <tr> <th>Meters</th> <th>Feet</th> <th>Spool</th> </tr> </thead> <tbody> <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>Meters controlling dimension</p>	Meters	Feet	Spool	100	300ft	(A)	300	1000ft	(A)	500	1500ft	(A)	1000	3000ft	(B)	2500	8000ft	(B)
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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 (heat affected zone) 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.

SEA Series Silver (Ag) Bonding Wire



Ø Diameter ±1% µm	Breaking Load (gf)	Breaking Load (mN)	EI (%)	Weight mg/200mm	Length Meters	Length Feet	Part Number	Order Nr
Ø 15µm (Ø 0.6 mil)	4.1~8.0 gf	40~78mN	1.0~8.0%	0.336~0.439	100m	300ft	SEA-15A100	501151
					300m	1000ft	SEA-15A300	501153
					500m	1500ft	SEA-15A500	501155
					1000m	3000ft	SEA-15B1000	501156
Ø 18µm (Ø 0.7 mil)	4.1~8.0 gf	40~78mN	1.0~8.0%	0.495~0.619	100m	300ft	SEA-18A100	501181
					300m	1000ft	SEA-18A300	501183
					500m	1500ft	SEA-18A500	501185
					1000m	3000ft	SEA-18B1000	501186
Ø 20µm (Ø 0.8 mil)	5.1~10.0 gf	50~98mN	1.0~8.0%	0.619~0.756	100m	300ft	SEA-20A100	501201
					300m	1000ft	SEA-20A300	501203
					500m	1500ft	SEA-20A500	501205
					1000m	3000ft	SEA-20B1000	501206
Ø 25µm (Ø 1.0 mil)	7.8~15.4 gf	76~151 mN	1.0~8.0%	0.987~1.158	100m	300ft	SEA-25A100	501251
					300m	1000ft	SEA-25A300	501253
					500m	1500ft	SEA-25A500	501255
					1000m	3000ft	SEA-25B1000	501256
Ø 30µm (Ø 1.2 mil)	11.1~21.9 gf	109~215 mN	1.0~10%	1.441~1.647	100m	300ft	SEA-30A100	501301
					300m	1000ft	SEA-30A300	501303
					500m	1500ft	SEA-30A500	501305
					1000m	3000ft	SEA-30B1000	501306

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 series offers low resistivity similar to 2N Au wire.

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

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

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

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

SEA Series How to Order



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

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

CLR-1A Series Palladium Coated Copper Bonding Wire (PCC)



Ø Diameter ±1% µm	Breaking Load (gf)	Breaking Load (mN)	EI (%)	Weight mg/200mm	Length Meters	Length Feet	Part Number	Order Nr
Ø 15µm (Ø 0.6 mil)	2.3~5.2 gf	23~50mN	3.0~13%	call	100m	300ft	CLR1A-15N100	700151
					300m	1000ft	CLR1A-15N300	700153
					500m	1500ft	CLR1A-15N500	700155
					1000m	3000ft	CLR1A-15N1000	700156
Ø 18µm (Ø 0.7 mil)	3.3~8.9 gf	31~71mN	5.0~15%	0.407~0.509	100m	300ft	CLR1A-18N100	700181
					300m	1000ft	CLR1A-18N300	700183
					500m	1500ft	CLR1A-18N500	700185
					1000m	3000ft	CLR1A-18N1000	700186
Ø 20µm (Ø 0.8 mil)	4.0~8.9 gf	39~87mN	5.0~15%	0.509~0.621	100m	300ft	CLR1A-20N100	700201
					300m	1000ft	CLR1A-20N300	700203
					500m	1500ft	CLR1A-20N500	700205
					1000m	3000ft	CLR1A-20N1000	700206
Ø 25µm (Ø 1.0 mil)	6.3~14.0 gf	62~137mN	5.0~15%	0.812~0.952	100m	300ft	CLR1A-25N100	700251
					300m	1000ft	CLR1A-25N300	700253
					500m	1500ft	CLR1A-25N500	700255
					1000m	3000ft	CLR1A-25N1000	700266
Ø 30µm (Ø 1.2 mil)	9.0~20.1 gf	88~19mN	7.0~20%	1.185~1.354	100m	300ft	CLR1A-30N100	700301
					300m	1000ft	CLR1A-30N300	700303
					500m	1500ft	CLR1A-30N500	700305
					1000m	3000ft	CLR1A-30N1000	700306
Ø 32µm (Ø 1.25 mil)	10.3~22.9 gf	101~225mN	7.0~20%	1.354~1.534	100m	300ft	CLR1A-32N100	700321
					300m	1000ft	CLR1A-32N300	700323
					500m	1500ft	CLR1A-32N500	700325
					1000m	3000ft	CLR1A-32N1000	700326
Ø 50µm (Ø 2.0 mil)	29.2~60.4 gf	1286~592mN	10.0~25%	3.246~3.810	100m	300ft	CLR1A-50N100	700501
					300m	1000ft	CLR1A-50N300	700502
					500m	1500ft	CLR1A-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 round/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.

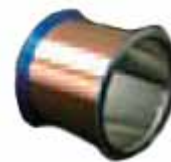
Note 2: Wide bonding process window. Excellent reliability. High Performance. Stable bonding

Note 3: Requires grounded wire bonding equipment. (CLR-2A softer version available on special order)

Note 4: Standard Tolerance: Ø15µm~38µm ±1 µm Ø40~50µm ±2 µm Ø60~70µm ±3 µm

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

CLR-1A Series How to Order



Part Number System				
<u>CLR1A</u>	-	<u>25</u>	<u>N</u>	<u>100</u>
Series		Ø Diameter µm	Spool Type	Length Meters
CLR1A = Palladium Coated Copper Wire (PCC)		Code Mil	Conductive Spool N = 2"x2" AL-4(WNi)	Meters Feet Spool
		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		Meters controlling dimension
		32 1.25mil		
		35 1.4mil		
		38 1.5mil		
		40 1.6mil		
		50 2.0mil		

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 Series	<u>Code</u> <u>Description</u> 0 = Round Wire	<u>Series</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) 9 = other Meters controlling

CA-1 Series Copper Alloy Bonding Wire



Ø Diameter ±1% µm	Breaking Load (gf)	Breaking Load (mN)	EI (%)	Weight mg/200mm	Length Meters	Length Feet	Part Number	Order Nr
Ø 18µm (Ø 0.7 mil)	3.4~7.6 gf	33~75mN	7.0~17%	0.46~0.508	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%	0.508~0.620	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%	0.810~0.950	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%	1.182~1.351	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%	1.351~1.531	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%	1.925~2.138	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%	2.030~2.480	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%	6.311~7.492	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

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

CA-1 Series How to Order



Part Number System							
<u>CA1</u>	-	<u>25</u>	<u>N</u>	<u>100</u>			
Series		Ø Diameter µm	Spool Type	Length Meters			
CA1 = Copper Alloy		Code Mil	Conductive Spool	Meters	Feet	Spool	
		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		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						

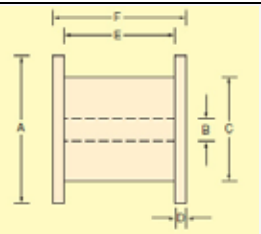
Order Number					
<u>7</u>	<u>0</u>	<u>1</u>	<u>25</u>	<u>1</u>	
Alloy	Shape	Model	Ø Diameter	Length	
<u>Code</u> • <u>Description</u>	<u>Code</u> <u>Description</u>	<u>Series</u>	<u>µm</u> <u>Mil</u>	<u>Code</u>	<u>Meters</u> <u>Feet</u>
7 = Copper Series	0 = Round Wire	1 =CA-1 Cu Alloy	15 0.6mil	1 = 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 Series Bare Copper Bonding Wire



Ø Diameter ±1% µm	Breaking Load (gf)	Breaking Load (mN)	EI (%)	Weight mg/200mm	Length Meters	Length Feet	Part Number	Order Nr
Ø 18µm (Ø 0.7 mil)	3.6~7.8 gf	35~76mN	7.0~17%	0.405~0.506	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%	0.506~0.618	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%	0.807~0.947	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%	1.178~1.347	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%	1.347~1.526	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%	1.918~2.131	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%	3.228~3.789	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%	6.290~7.467	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

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 Series How to Order



Part Number System							
<u>CFB1</u>	-	<u>25</u>	<u>N</u>	<u>100</u>			
Series		Ø Diameter µm	Spool Type	Length Meters			
CFB1 = Bare Copper		Code Mil	Conductive Spool	Meters	Feet	Spool	
		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		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>2</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>Series</u>	<u>µm</u> <u>Mil</u>	<u>Code</u>	<u>Meters</u> <u>Feet</u>
7 = Copper Series	0 = Round Wire	2 =CFB-1 Bare Cu	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		

TABN & TABW Series Aluminum Al-1% Si Bonding Wire



Ø Diameter ±1% µm	Breaking Load (gf)	Breaking Load (mN)	EI (%)	Weight mg/200mm	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%	0.15~0.19	50m	150ft	TABN-18H50	403180
					100m	300ft	TABN-18A100	403181
					300m	1000ft	TABN-18A300	403183
					500m	1500ft	TABN-18A500	403185
Ø 20µm (Ø 0.8 mil)	8.0~10 gf	79~98mN	0.5~4.5%	0.15~0.19	50m	150ft	TABN0-20H50	403200
					100m	300ft	TABN-20A100	403201
					300m	1000ft	TABN-20A300	403203
					500m	1500ft	TABN-20A500	403205
Ø 25µm (Ø 1.0 mil)	13~15 gf	127~147 mN	0.5~4.5%	0.24~0.29	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%	0.36~0.41	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%	0.41~0.46	50m	150ft	TABN-30H50	403320
					100m	300ft	TABN-30A100	403321
					300m	1000ft	TABN-30A300	403323
					500m	1500ft	TABN-30A500	403325
Ø 38µm (Ø 1.5 mil)	31~44gf	304~333 mN	0.5~5.0%	0.58~0.65	50m	150ft	TABN-38H50	403380
					100m	300ft	TABN-38A100	403381
					300m	1000ft	TABN-38A300	403383
					500m	1500ft	TABN-38A500	403385
Ø 50µm (Ø 2.0 mil)	147~53 gf	461~520 mN	0.5~6.0%	0.98~1.15	100m	300ft	TABN-50A100	403501
					300m	1000ft	TABN-50A300	403503
					500m	1500ft	TABN-50A500	403505
Ø 80µm (Ø 3.0 mil)	130~150 gf	1275~1471mN	0.5~6.0%	2.51~2.92	100m	300ft	TABN-80A100	403801
					300m	1000ft	TABN-80A300	403803
					500m	1500ft	TABN-80B500	403805

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.

Note 3: 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: TABW without scheduled for obsolescence.

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

TABN & TABW Series How to Order



Part Number System				
<u>TABN</u>	-	<u>25</u>	<u>A</u>	<u>100</u>
Series		Ø Diameter µm	Spool Type	Length Meters
TABN = Aluminum Al-1% Si With Nickel Doping TABW = Aluminum Al-1% Si Without Nickel Doping Scheduled for Obsolescence		<u>Code</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>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> 50 150ft (H) 100 300ft (A) 300 1000ft (A) 500 1500ft (A) 1000 3000ft (B) 2500 8000ft (B)
				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 • Description</u> 4 = Aluminum	<u>Code</u> <u>Description</u> 0 = Round Wire	<u>Series</u> 3 =TABN Al-1%Si With Nickel 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> 1 = 100m (300ft) 3 = 300m (1000ft) 5 = 500m (1500ft) 6 = 1000m (3000ft) 7 = 2500m (8000ft) 9 = other Meters controlling

TANW Series Aluminum (Al) Power Large Diameter Bonding Wire



Ø Diameter	Breaking Load (gf)	Breaking Load (N)	EI (%)	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-100P100 TANW-100P500	405001 405005
Ø 125µm (Ø 5mil)	60~120 gf	0.69~1.18 N	10~30%	Soft 1	100m 500m	300ft 1500ft	TANW-125P100 TANW-125P500	405011 405015
Ø 150µm (Ø 6mil)	100~200 gf	0.98~1.96 N	10~30%	Soft 1	100m 500m	300ft 1500ft	TANW-150P100 TANW-150P500	405021 405025
Ø 175µm (Ø 7mil)	140~240 gf	1.37~2.35 N	10~30%	Soft 1	100m 500m	300ft 1500ft	TANW-175P100 TANW-175P500	405031 405035
Ø 200µm (Ø 8mil)	140~200 gf	1.37~1.96N	9~25%	Soft 2	100m 500m	300ft 1500ft	TANW-200P100 TANW-200P500	405041 405045
Ø 250µm (Ø 10mil)	210~300 gf	2.06~2.94 N	10~30%	Soft 2	100m 500m	300ft 1500ft	TANW-250P100 TANW-250P500	405051 405055
Ø 300µm (Ø 12mil)	300~420 gf	2.94~4.12 N	10~30%	Soft 2	100m 500m	300ft 1500ft	TANW-300P100 TANW-300P500	405061 405065
Ø 350µm (Ø 14mil)	450~550 gf	4.41~5.39 N	10~30%	Soft 2	100m 500m	300ft 1500ft	TANW-350P100 TANW-350P500	405071 405075
Ø 380µm (Ø 15mil)	500~700 gf	4.90~6.86N	10~30%	Soft 2	100m 300m	300ft 1000ft	TANW-380P100 TANW-380P300	405081 405083
Ø 400µm (Ø 16mil)	550~750 gf	5.39~7.35 N	10~30%	Soft 2	100m 300m	300ft 1000ft	TANW-400P100 TANW-400P300	405091 405093
Ø 450µm (Ø 18mil)	700~850 gf	6.86~8.34 N	10~30%	Soft 2	100m 300m	300ft 1000ft	TANW-450P100 TANW-450P300	405101 405103
Ø 500µm (Ø 20mil)	800~1100 gf	7.85~10.79 N	10~30%	Soft 2	100m 200m	300ft 600ft	TANW-500P100 TANW-500P200	405111 405112
Ø 600µm (Ø 24mil)	900~1200 gf	10.85~12.00 N	10~30%	Soft 2	100m 200m	300ft 600ft	TANW-600P100 TANW-600P200	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
	88mm 3.5"	10mm 0.40"	50mm 2.0"	3mm 0.118"	25mm 1.0"	31mm 1.25"	No. 88 (Ø 250um~500um)	P
	89mm 3.5"	10mm 0.40"	71mm 2.75"	3mm 0.118"	25mm 1.0"	31mm 1.25"	No. 88B (Ø 100um~200um)	P

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

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

INFO

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

Note 2: Excellent bondability and corrosion resistance

Note 3: Standard Tolerance: Ø100um~175um ±5 um Ø200um~450um ±7 um Ø500~600um ±10 um

TANW Series How to Order



Part Number System				
<u>TANW</u>	-	<u>300</u>	<u>P</u>	<u>100</u>
Series		Ø Diameter µm	Spool Type	Length Meters
TANW = Bonding Wire Large Diameter Aluminum Al		Code Mil 100 4mil 125 5mil 150 6mil 175 7mil 200 8mil 250 10mil 300 12mil 350 14mil 380 15mil 400 16mil 450 18mil 500 20mil 600 24mil	Polycarbonate Spool P = Ø88mm x 31mm Ø3.5" x 1.25"	Meters Feet 100 300ft 200 600ft 300 1000ft 500 1500ft 1000 3000ft
				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>Series</u> 5 =TANW Al Power Large Diameter	<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) 5 = 500m (1500ft) 6 = 1000m (3000ft) 9 = other
				Meters controlling

Tolerance: Ø100~175um ±5 um Ø200~450um ±7 um Ø500~600um ±10 um

TALF Series Aluminum (Al) Heavy Bonding High Temp Power Devices



Ø Diameter	Breaking Load (gf)	Breaking Load (N)	EI (%)	Length Meters	Length Feet	Part Number	Order Nr
Ø 100µm (Ø 4mil)	60~100 gf	0.59~0.98N	15~35%	100m 500m	300ft 1500ft	TALF-100P100 TALF-100P500	401001 401005
Ø 125µm (Ø 5mil)	90~150 gf	0.88~1.47N	15~35%	100m 500m	300ft 1500ft	TALF-125P100 TALF-125P500	401011 401015
Ø 150µm (Ø 6mil)	130~210 gf	1.28~2.06N	15~35%	100m 500m	300ft 1500ft	TALF-150P100 TALF-150P500	401021 401025
Ø 175µm (Ø 7mil)	180~280 gf	1.76~2.74N	15~35%	100m 500m	300ft 1500ft	TALF-175P100 TALF-175P500	401031 401035
Ø 200µm (Ø 8mil)	230~370 gf	2.26~3.63N	15~45%	100m 500m	300ft 1500ft	TALF-200P100 TALF-200P500	401041 401045
Ø 250µm (Ø 8mil)	350~570 gf	3.43~5.59N	15~45%	100m 500m	300ft 1500ft	TALF-250P100 TALF-250P500	401051 401055
Ø 300µm (Ø 12mil)	500~800 gf	4.90~7.85 N	20~50%	100m 500m	300ft 1500ft	TALF-300P100 TALF-300P500	401061 401065
Ø 350µm (Ø 14mil)	680~1080 gf	6.67~10.58 N	20~50%	100m 500m	300ft 1500ft	TALF-350P100 TALF-350P500	401071 401075
Ø 380µm (Ø 15mil)	810~1270 gf	7.94~12.44 N	20~50%	100m 500m	300ft 1500ft	TALF-380P100 TALF-380P500	401081 401085
Ø 400µm (Ø 16mil)	900~1400 gf	8.83~13.73 N	20~50%	100m 300m	300ft 1000ft	TALF-400P100 TALF-400P300	401091 401093
Ø 450µm (Ø 18mil)	1140~1740 gf	11.17~17.05 N	20~50%	100m 300m	300ft 1000ft	TALF-450P100 TALF-450P300	401101 401103
Ø 500µm (Ø 20mil)	1400~2100 gf	13.73~20.59 N	20~50%	100m 200m	300ft 600ft	TALF-500P100 TALF-500P200	401111 401112
Ø 600µm (Ø 24mil)	1600~2400 gf	16.73~24.59 N	20~50%	100m 200m	300ft 600ft	TALF-600P100 TALF-600P200	401121 401122

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 0.118"	25mm 1.0"	31mm 1.25"	No. 88 (Ø 250µm~500µm)	P
	89mm 3.5"	10mm 0.40"	71mm 2.75"	3mm 0.118"	25mm 1.0"	31mm 1.25"	No. 88B (Ø 100µm~200µm)	P

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: Diameter Tolerance: Ø100µm~175µm ± 7 µm Ø200µm~450µm ± 7 µm Ø500~600µm ± 10 µm

TALF Series How to Order

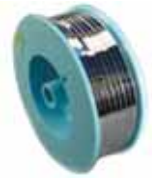


Part Number System				
<u>TALF</u>	-	<u>300</u>	<u>P</u>	<u>100</u>
Series		∅ Diameter μ m	Spool Type	Length Meters
TALF = Large Diameter Aluminum Al High Temperature Bonding		Code Mil 100 4mil 125 5mil 150 6mil 175 7mil 200 8mil 250 10mil 300 12mil 350 14mil 380 15mil 400 16mil 450 18mil 500 20mil	Polycarbonate Spool P = \varnothing 88mm x 31mm \varnothing 3.5" x 1.25"	Meters Feet 50 150ft 100 300ft 200 600ft 300 1000ft 500 1500ft 1000 3000ft Meters controlling dimension

Order Number				
<u>4</u>	<u>0</u>	<u>1</u>	<u>06</u>	<u>1</u>
Alloy	Shape	Model	∅ Diameter Code	Length
Code • Description 4 = Aluminum	Code Description 0 = Round Wire	Series 1 =TALF Al Power Large Diameter High Temperature	Code μm Mil 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	Code Meters Feet 0 = 50m (150ft) 1 = 100m (300ft) 2 = 200m (600ft) 3 = 300m (1000ft) 5 = 500m (1500ft) 6 = 1000m (3000ft) 9 = other Meters controlling

Diameter Tolerance: \varnothing 100um~175um \pm 7 μ m \varnothing 200um~450um \pm 7 μ m \varnothing 500um \pm 10 μ m

TABR Series Aluminum (Al) Ribbon Bonding Wire



Size Width	Size Thickness	Breaking Load (gf)	Breaking Load (N)	EI (%)	Length Meters	Length Feet	Part Number	Order Nr
0.8mm (± 0.050mm) 30mil	0.1mm (± 0.015mm) 4mil	440~680 gf	4.31~6.67 N	≥10%	100m	300ft	TABR-800x100P100	412481
					200m	600ft	TABR-800x100P200	412482
					300m	1000ft	TABR-800x100P300	412483
1.0mm (± 0.050mm) 40mil	0.1mm (± 0.020mm) 4mil	550~850 gf	5.39~8.34 N	≥10%	100m	300ft	TABR-1000x100P100	412491
					200m	600ft	TABR-1000x100P200	412492
1.5mm (± 0.050mm) 60mil	0.1mm (± 0.020mm) 4mil	1250~2080 gf	12.25~20.38 N	≥10%	100m	300ft	TABR-1500x100P100	412421
					200m	600ft	TABR-1500x100P200	412422
					400m	1300ft	TABR-1500x100R400	412424
1.5mm (± 0.075mm) 60mil	0.2mm (± 0.015mm) 8mil	1350~2250 gf	13.24~22.06 N	≥10%	100m	300ft	TABR-1500x200P100	412851
					200m	600ft	TABR-1500x200R200	412852
					300m	1000ft	TABR-1500x200R300	412853
					400m	1300ft	TABR-1500x200R400	412854
2.0mm (± 0.10mm) 80mil	0.2mm (± 0.020mm) 8mil	1800~3000 gf	17.65~29.42 N	≥10%	100m	300ft	TABR-2000x200P100	412861
					200m	600ft	TABR-2000x200R200	412862
					300m	1000ft	TABR-2000x200R300	412863

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

Note: Metric dimensions control

INFO

Note 1: TABR series Al ribbon is fabricated using a dry process.

No lubrication oils are introduced during fabrication. Excellent corrosion resistance.

Note 2: Tanaka Al ribbon is made using a rolled process. Edges are smooth without sharp edges.

Good surface smoothness.

Note 3: Tanaka's specially formulated winding process assures consistent de-spooling and smooth bonding.

Not parallel winding.

Note 4: Flat Al ribbon provides an excellent solution for power devices.

Note 5: Spool code is 4th character from end of part number: "P"=No.88 Spool. "R"=No.120 Spool

Note 6: TABR series aluminum ribbon wire made in Japan

TABR Series How to Order



Part Number System				
<u>TABR</u>	-	<u>800x100</u>	<u>P</u>	<u>100</u>
Series		Size Code (um)	Spool Type	Length Meters
TABR = Aluminum Al Bonding Ribbon		<u>Code</u> <u>W x Th</u> 800x100 = 0.8 x 0.1mm 1000x100 = 1.0 x 0.1mm 1500x100 = 1.0 x 0.1mm 1500x200 = 1.5 x 0.2mm 2000x200 = 2.0 x 0.2mm	Polycarbonate Spool P = Ø88mm x 31mm Ø3.5" x 1.25" R = Ø120mm x 38mm Ø4.75" x 1.50"	<u>Meters</u> <u>Feet</u> 100 300ft 200 600ft 300 1000ft 400 1300ft
				Meters controlling dimension

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 • Description</u> 4 = Aluminum	<u>Code</u> <u>Description</u> 1 = Flat Wire	<u>Series</u> 2 =TABR Al Ribbon	<u>Code</u> <u>W x Th</u> 48 = 0.8 x 0.1mm 49 = 1.0 x 0.1mm 42 = 1.5 x 0.1mm 85 = 1.5 x 0.2mm 86 = 2.0 x 0.2mm	<u>Code</u> <u>Meters</u> <u>Feet</u> 1 = 100m (300ft) 2 = 200m (600ft) 3 = 300m (1000ft) 4 = 400m (1300ft) 9 = other
				Meters controlling

AuR Series Gold (Au) Ribbon Bonding Wire 4N



Size Width	Size Thickness	Breaking Load (gf)	Breaking Load (N)	EI (%)	Length Meters	Length Feet	Part Number	Order Nr
38um 1.5mil	12.7um 0.5mil	9~11 gf	88~108 N	3.0~4.5%	10m 50m	33ft 150ft	AuR-38x12.7H10 AuR-38x12.7A50	326380 316380
50um 2.0mil		13~14 gf	127~137 N	3.0~4.5%	10m 50m	33ft 150ft	AuR-50x12.7H10 AuR-50x12.7A50	326500 316500
75um 3.0mil		20~21 gf	196~205 N	4.0~6.0%	10m 50m	33ft 150ft	AuR-75x12.7H10 AuR-75x12.7A50	326520 316520
100um 4.0mil		26~28 gf	250~275 N	6.0~8.0%	10m 50m	33ft 150ft	AuR-100x12.7H10 AuR-100x12.7A50	326530 316530
125um 5.0mil		29~37gf	285~360 N	6.0~8.0%	10m 50m	33ft 150ft	AuR-125x12.7H10 AuR-125x12.7A50	326540 316540
150um 6.0mil		38~43 gf	372~425 N	9.0~11%	10m 50m	33ft 150ft	AuR-150x12.7H10 AuR-150x12.7A50	326550 316550
75um 3.0mil	25um 1.0mil	30~45 gf	294~440 N	5.0~10%	10m 50m	33ft 150ft	AuR-75x25H10 AuR-75x25A50	326110 316110
100um 4.0mil		50~60 gf	490~588 N	5.0~10%	10m 50m	33ft 150ft	AuR-100x25H10 AuR-100x25A50	326120 316120
125um 5.0mil		60~70 gf	588~686 N	5.0~10%	10m 50m	33ft 150ft	AuR-125x25H10 AuR-125x25A50	326130 316130
150um 6.0mil		TBA	TBA	5.0~10%	10m 50m	33ft 150ft	AuR-150x25H10 AuR-150x25A50	326140 316140
200um 8.0mil		TBA	TBA	5.0~10%	10m 50m	33ft 150ft	AuR-200x25H10 AuR-200x25A50	326150 316150
250um 10.0mil		130~140 gf	1275~1375 N	5.0~10%	10m 50m	33ft 150ft	AuR-250x25H10 AuR-250x25A50	326160 316160

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 series 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: Tanaka's specially formulated winding process assures consistent de-spooling and smooth bonding. Not parallel winding.

AuR Series How to Order



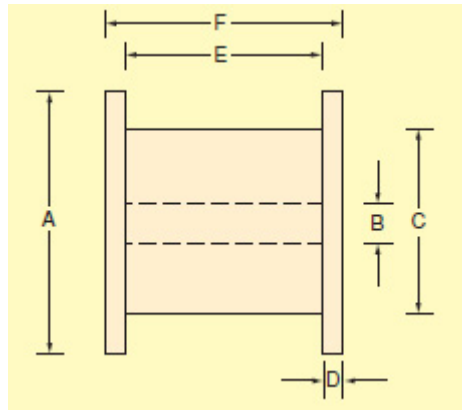
Part Number System				
<u>AuR</u>	-	<u>100x12.7</u>	<u>A</u>	<u>50</u>
Series		Size Code	Spool Type	Length Meters
AuR = Gold Au Bonding Ribbon 4N		W x Th 25~150 x 12.7um 75~250 x 25um <i>* See Other Sizes Under Development</i>	Aluminum Spool A = 2"x1" AL-2 H = 1/2"x3/4" HALF	Meters Feet Spool 10 33ft (H) 50 150ft (A) Meters controlling dimension

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

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

*AuR Gold sizes marked with asterisk * are under development.*




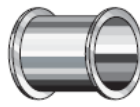

Spools



Outline

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	58.5mm	48.8mm	50.3mm	0.75mm	26.4mm	27.9mm	AL-2W AL-2	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	H
	Conductive Nickel Hub	58.5mm	48.8mm	50.3mm	0.75mm	45.5mm	47.0mm	AL-4(WNi)	N
Polycarbonate	Anti-static	88mm 89mm	10mm 10mm	50mm 71mm	3mm 3mm	25mm 25mm	31mm 31mm	No.88 No.88B	P
		120mm	10mm	54mm	4mm	30mm	38mm	No.120	R

Spool A	Spool B	Spool N	Spool H	Spool P & X
 <p>AL-2(W) Ø 2" Aluminum 1" Wide</p>	 <p>AL-4 Ø 2" Aluminum 2" Wide</p>	 <p>AL-4(WNi) Ø 2" Conductive Ni Hub Grounded</p>	 <p>HALF- INCH</p>	 <p>No.88/120 Polycarbonate</p>



± Tolerance Table

Alloy	Ø Diameter	Tolerance	Spool
Au Gold <u>Series</u> GBC , GBE , GFC, GFD, GHA-2 , GLD, 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	
Ag Silver <u>Series</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	
Al-1% Si <u>Series</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	
Al Power <u>Series</u> TANW, TALF	Ø 100µm ~ 175µm (Ø 4.0 ~ 7.0 mil)	±7 µm	Ø 100µm ~ 175µm No. 88B Polycarbonate - - - Ø 200µm ~ 600µm No. 88 Polycarbonate
	Ø 200µm ~ 450µm (Ø 8.0 ~ 18 mil)	±7 µm	
	Ø 500µm ~ 600µm (Ø 20 ~ 24 mil)	±10 µm	
Cu Copper Bare & Plated <u>Series</u> CLR-1A , TCA1 , TCB1 , CA-1 , CFB-1 , TPCW	Ø 15µm ~ 38µm (Ø 0.6 ~ 1.5 mil)	±1 µm	AL-4(Ni) Conductive
	Ø 40µm ~ 50µm (Ø 1.6 ~ 2.0 mil)	±2 µm	
	Ø 60µm ~ 70µm (Ø 2.4 ~ 2.8 mil)	±3 µm	
Flat Al Ribbon <u>Series</u> TABR	Width 0.8mm (32 mil) Thick 0.1mm (4 mil)	W: ±0.050mm T: ±0.015mm	No. 88 No. 88B Polycarbonate
	Width 1.0mm (32 mil) Thick 0.1mm (4 mil)	W: ±0.050mm T: ±0.020mm	
	Width 1.5mm (60 mil) Thick 0.2mm (8 mil)	W: ±0.075mm T: ±0.015mm	
	Width 2.0mm (80 mil) Thick 0.2mm (8 mil)	W: ±0.10mm T: ±0.020mm	



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Tel 1-800-776-9888

Cross Reference Order Code Tanaka Series

Order Code	Tanaka Series	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	18~19	AL-2 and AL-4
302	GMH-2	Au 4N	High Strength	See Web Page	AL-2 and AL-4
303	M3	Au 4N	Standard Wire	14~15	1/2" and AL-2
304	GPG-2	Au 2N	High Reliability	10~11	AL-2 and AL-4
305	GBC	Au 2N	High Reliability	16~17	AL-2 and AL-4
306	GFD	Au 4N	Fine Pitch	See 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	12~13	AL-2 and AL-4
309	GLD	Au 4N	Wedge to Wedge	6~7	1/2" and AL-2
316	AuR	Au 4N	Ribbon 2" Spool	36~37	AL-2
326	AuR	Au 4N	Ribbon 1/2" Spool	36~37	1/2"
330	FA	Au 4N	Soft Touch	Call TopLine	AL-2 and AL-4
331	Y	Au 4N	Soft Touch	Call TopLine	AL-2 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
401	TALF	Al 2N	Power Large	32~33	No.88, No.88B
402	TABR	Al 4N	Ribbon	34~35	No.88, No.120
403	TABN	Al 1%Si	With Nickel	28~29	1/2" and AL-2
404	TABW	Al 1%Si	Without Nickel	28~29	AL-2 and AL-4
405	TANW	Al	Power Large	30~31	No.88, No.88B
501	SEA	Silver Alloy	Original	20~21	AL-2 and AL-4
502	SEB	Silver Alloy	Low Resistivity	20~21	AL-2 and AL-4
503	SEC	Silver Alloy	Softer FAB	20~21	AL-2 and AL-4
300	CLR-1A	Cu-Pd Alloy	PCC Coated	22~23	AL4 (WNi)
301	CA-1	Copper Alloy	Bare	24~25	AL4 (WNi)
302	CFB-1	Standard	Bare	26~27	AL4 (WNi)
303	CHA	Heavy Power	Bare	Call TopLine	AL4 (WNi)
304	TCA1	Cu 4N	Bare	Call TopLine	AL4 (WNi)
305	TCB1	Cu 4N	Bard	Call TopLine	AL4 (WNi)
306	TPCW	Cu 4N	High Purity Bare	Call TopLine	AL4 (WNi)
307	CRL-2A	Cu-Pd Alloy	PCC Coated	Call TopLine	AL4 (WNi)
308	CHR-5B	Cu 3N PCC	Hi Rel Automotive	Call TopLine	AL4 (WNi)
309	CHR-6B	Cu 2N PCC	Hi Rel Automotive	Call TopLine	AL4 (WNi)

Wire Bondability to Bond Pads

Bonding with Gold Wire (Au)

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

Bonding with Silver Alloy Wire (Ag)

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

Bonding with Copper Wire (Cu)

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

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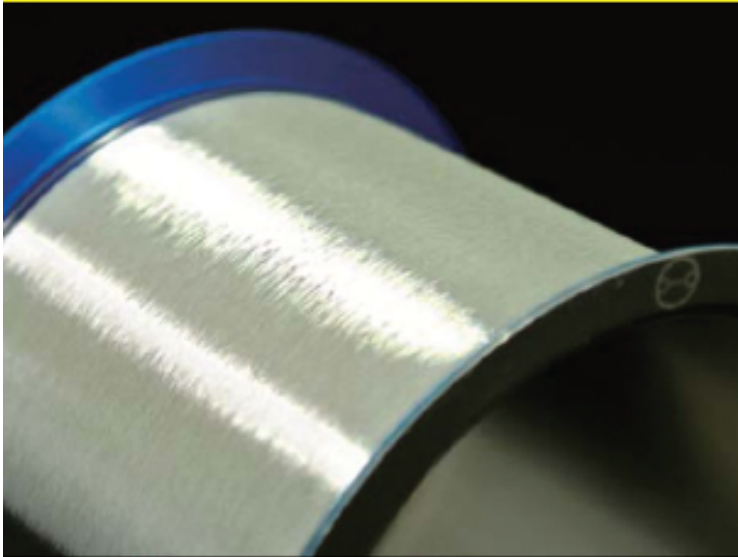
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