

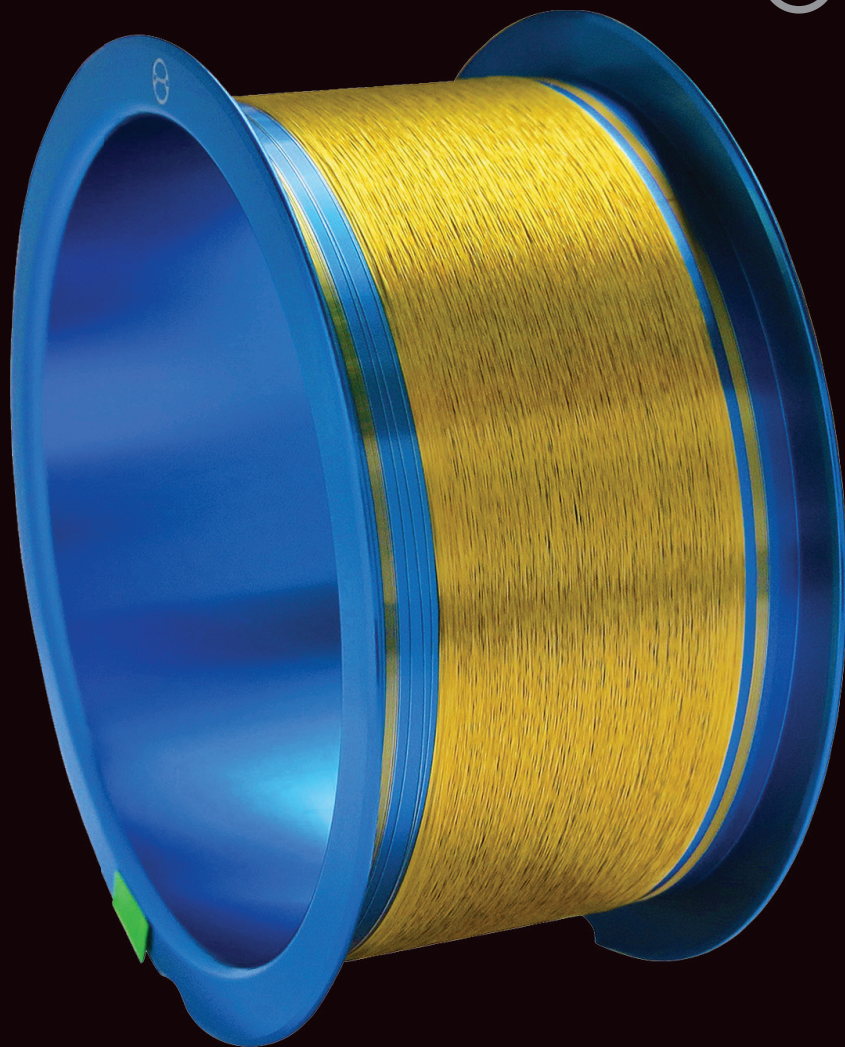
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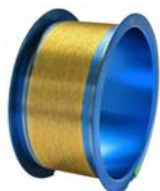
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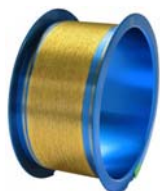
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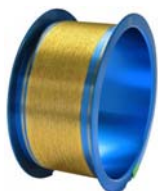
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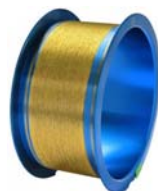
GSA Type
Gold Au (4N)
Bonding Wire
Page 4~5



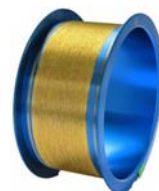
GLD-H Type
Gold Au (4N)
High Performance Wedge
Page 6~7



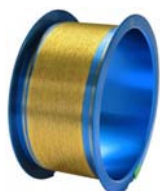
GLF Type
Gold Au (4N)
Super Low Loop
Page 8~9



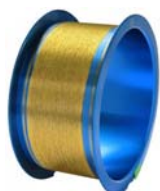
GMH-2 Type
High Strength (4N)
Bonding Wire
Page 10~11



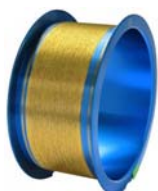
GPG-2 Type
High Reliability (2N)
Bonding Wire
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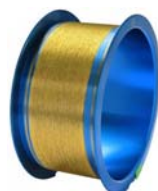
GPH Type
High Reliability (2N)
Bonding Wire
Page 14~15



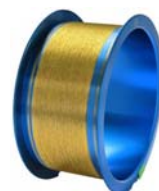
M3 (4N)
Manual Bonder Au
Bonding Wire
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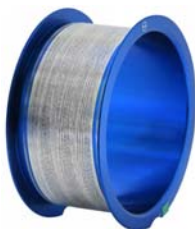
GBC (2N)
Gold Au
Bumping Wire
Page 18~19



GBE (4N)
Gold Au
Bumping Wire
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Y Type(4N)
Heavy Power Gold
Bonding Wire
Page 22~23



SEA Type
Silver Ag
Bonding Wire
Page 24~25



CLR-1AT Type
Palladium Coated
Copper Wire
Page 26~27



CPR-1 Type
Cu Copper Ribbon
Page 28~29



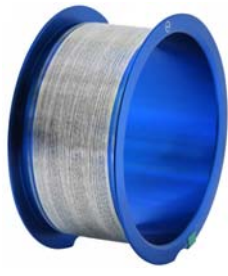
CA-1 Type
Copper Alloy
Bonding Wire
Page 30~31



CFB-1 Type
Bare Copper
Bonding Wire
Page 32~33



CP-1 Type
Heavy Copper
Power Bonding Wire
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TABN Type
Aluminum Al-1% Si
Bonding Wire
Page 36~37



TANW Type
Large Aluminum Al
Power Bonding Wire
Page 38~39



TABR Type
Aluminum Al Ribbon
Flat Bonding Wire
Page 40~41



AuR Type
Gold Au Ribbon
Flat Bonding Wire
Page 42~43



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

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Milledgeville, GA 31061 USA

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Email: Tanaka@TopLine.tv

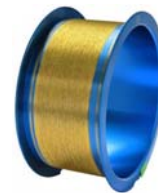
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Ready to assist you.

GSA Type Gold 4N (Au) Bonding Wire



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)	1.7~3.7 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	300ft 1000ft 1500ft	GSA-18A100 GSA-18A300 GSA-18A500	300181 300183 300185
Ø 20µm (Ø 0.8 mil)	4.4~9.4 gf	43~92 mN	1.0~7.0%	170~190µm	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%	170~190µm	100m 300m 500m	300ft 1000ft 1500ft	GSA-25A100 GSA-25A300 GSA-25A500	300251 300253 300255
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 2.0 mil)	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	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.

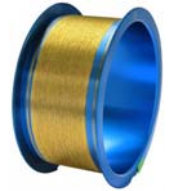
Note 2: Good 2nd bond stitch remaining after pull test. Good squashed ball shape and excellent FAB softness.

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

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

GSA Type

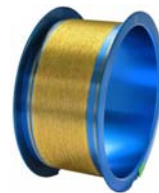
How to Order



Part Number System				
<u>GSA</u>	-	<u>25</u>	<u>A</u>	<u>100</u>
Type		Ø Diameter µm	Spool Type	Length Meters
<u>Gold 4N (Au99.99)</u> GSA = Stable Stitch		<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 33 1.3mil 38 1.5mil 50 2.0mil	<u>Aluminum Spool</u> A = 2"x1" AL-2(W) B = 2"x2" AL-4 <u>Conductive Spool</u> C = 2"x1" AL-2(WNi) N = 2"x2" AL-4(WNi)	<u>Meters</u> <u>Feet</u> <u>Spool</u> 100 300ft (A) 300 1000ft (A) 500 1500ft (A) 1000 3000ft (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
<u>Code • Description</u> 3 = Gold (Au)	<u>Code</u> <u>Description</u> 0 = Round Wire	<u>Gold Wire (Au)</u> 0 = GSA	<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 38 1.5mil 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

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 100m 300m	150ft 300ft 1000ft	GLD-H-15H50 GLD-H-15A100 GLD-H-15A300	309150 309151 309153
Ø 18µm (Ø 0.7 mil)	4.0 gf Min	39 mN Min	3.5% max	25m 50m 100m 300m	75ft 150ft 300ft 1000ft	GLD-H-18H25 GLD-H-18H50 GLD-H-18A100 GLD-H-18A300	309189 309180 309181 309183
Ø 20µm (Ø 0.8 mil)	6.0 gf Min	59 mN Min	3.5% max	25m 50m 100m 300m	75ft 150ft 300ft 1000ft	GLD-H-20H25 GLD-H-20H50 GLD-H-20A100 GLD-H-20A300	309209 309200 309201 309203
Ø 25µm (Ø 1.0 mil)	16 gf Min	156 mN Min	3.5% max	25m 50m 100m 300m 500m	75ft 150ft 300ft 1000ft 1500ft	GLD-H-25H25 GLD-H-25H50 GLD-H-25A100 GLD-H-25A300 GLD-H-25A500	309259 309250 309251 309253 309255
Ø 30µm (Ø 1.2 mil)	20 gf Min	196 mN Min	3.5% max	50m 100m 300m	150ft 300ft 1000ft	GLD-H-30H50 GLD-H-30A100 GLD-H-30A300	309300 309301 309303
Ø 32µm (Ø 1.25 mil)	23 gf Min	225 mN Min	3.5% max	50m 100m 300m	150ft 300ft 1000ft	GLD-H-32H50 GLD-H-32A100 GLD-H-32A300	309320 309321 309323
Ø 35µm (Ø 1.4 mil)	27 gf Min	264mN Min	4.5% max	50m 100m 300m	150ft 300ft 1000ft	GLD-H-35H50 GLD-H-35A100 GLD-H-35A300	309350 309351 309353
Ø 50µm (Ø 2.0 mil)	45 gf Min	441 mN Min	4.5% max	50m 100m	150ft 300ft	GLD-H-50H50 GLD-H-50A100	309500 309501

Spool Information

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

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

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

INFO

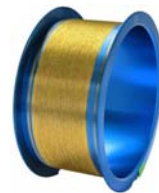
Note 1: For wedge to wedge applications that require maximum 3.5% elongation with Ø18~30µm

Note 2: Excellent breaking load for wedge bonding applications.

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

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

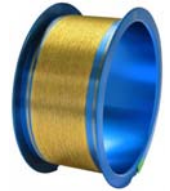
GLD-H Type High Performance Wedge Bonding Wire



Part Number System				
<u>GLD-H</u>	-	<u>25</u>	<u>A</u>	<u>100</u>
Type		Ø Diameter µm	Spool Type	Length Meters
Gold 4N (Au99.99) GLD-H = High Performance Wedge Bonding Wire GLD- = Standard Wedge Bonding Wire		<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	<u>Aluminum Spool</u> A = 2"x1" AL-2(W) B = 2"x2" AL-4 H = 1/2" AL-1/2 <u>Conductive Spool</u> C = 2"x1" AL-2(WNi) N = 2"x2" AL-4(WNi)	<u>Meters</u> <u>Feet</u> <u>Spool</u> 25 75ft (H) 50 150ft (H) 100 300ft (A) 300 1000ft (A) 500 1500ft (A) 1000 3000ft (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
<u>Code • Description</u> 3 = Gold (Au)	<u>Code</u> <u>Description</u> 0 = Round Wire GLD-H 4 = Round Wire GHD	<u>Gold Wire (Au)</u> 9 = GLD-H 9 = GLD	<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	<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

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%	60~80µm	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%	60~80µm	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%	60~80µm	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%	60~80µm	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%	60~80µm	100m 300m 500m	300ft 1000ft 1500ft	GLF-30A100 GLF-30A300 GLF-30A500	307301 307303 307305

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.

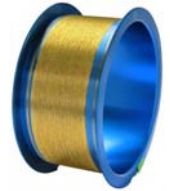
Note 2: 70µm average using Shinkawa UTC-200 ball bonder.

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

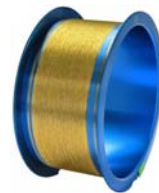
GLF Type Super Low Loop How to Order



Part Number System				
<u>GLF</u>	-	<u>25</u>	<u>A</u>	<u>100</u>
Type		Ø Diameter µm	Spool Type	Length Meters
Gold 4N (Au99.99) GLF = Super Low Loop 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

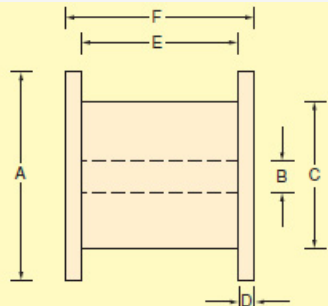
Order Number				
<u>3</u>	<u>0</u>	<u>7</u>	<u>25</u>	<u>1</u>
Alloy	Shape	Model	Ø Diameter	Length
Code • Description 3 = Gold (Au)	Code Description 0 = Round Wire	Gold Wire (Au) 7 =GLF	µm Mil 15 0.6mil 18 0.7mil 20 0.8mil 23 0.9mil 25 1.0mil 28 1.1mil 30 1.2mil	Code Meters Feet 1 = 100m (300ft) 3 = 300m (1000ft) 5 = 500m (1500ft) 6 = 1000m (3000ft) 7 = 2500m (8000ft)
				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 300m 500m	300ft 1000ft 1500ft	GMH2-15A100 GMH2-15A300 GMH2-15A500	302151 302153 302155
Ø 18µm (Ø 0.7 mil)	5.4~9.4 gf	53~92 mN	1.0~7.0%	100m 300m 500m	300ft 1000ft 1500ft	GMH2-18A300 GMH2-18A300 GMH2-18A500	302181 302183 302185
Ø 20µm (Ø 0.8 mil)	6.7~11.6 gf	66~99 mN	1.0~7.0%	100m 300m 500m	300ft 1000ft 1500ft	GMH2-20A100 GMH2-20A300 GMH2-20A500	302201 302203 302205
Ø 25µm (Ø 1.0 mil)	10.4~18.1 gf	102~178 mN	2.0~7.0%	100m 300m 500m	300ft 1000ft 1500ft	GMH2-25A100 GMH2-25A300 GMH2-25A500	302251 302253 302255
Ø 30µm (Ø 1.2 mil)	15.0~26.1gf	147~256 mN	2.0~7.0%	100m 300m 500m	300ft 1000ft 1500ft	GMH2-30A100 GMH2-30A300 GMH2-30A500	302301 302303 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

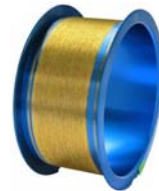
Note 1: High tensile strength for multiple loop profiles used in BGA packages.

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

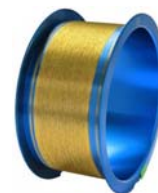
GMH-2 Type High Tensile Strength How to Order



Part Number System				
<u>GMH2</u>	-	<u>25</u>	<u>A</u>	<u>100</u>
Type		Ø Diameter µm	Spool Type	Length Meters
Gold 4N (Au99.99) 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)	5.4~9.0 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	2.0~7.0%	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%)

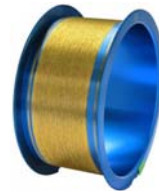
Note 2: High bond reliability and good match for mold compound with halogen.

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

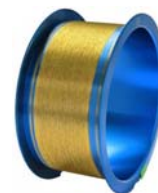
GPG-2 Type High Reliability Bonding How to Order



Part Number System				
<u>GPG2</u>	-	<u>25</u>	<u>A</u>	<u>100</u>
Type		Ø Diameter µm	Spool Type	Length Meters
<u>Gold 2N (Au99-Pd1)</u> GPG-2 = Super High Reliability Bonding Wire		<u>Code</u> <u>Mil</u> 15 0.6mil 18 0.7mil 20 0.8mil 23 0.9mil	<u>Aluminum Spool</u> A = 2"x1" AL-2(W) B = 2"x2" AL-4	<u>Meters</u> <u>Feet</u> <u>Spool</u> 100 300ft (A) 300 1000ft (A) 500 1500ft (A) 1000 3000ft (B) 2500 8000ft (B)
<u>Other Models</u> 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
<u>Code</u> • <u>Description</u> 3 = Gold (Au)	<u>Code</u> <u>Description</u> 0 = Round Wire	<u>Gold Wire (Au)</u> 4 =GPG-2 <u>Other Models</u> 35 = GPG 41 =GPG-3	<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 33 1.3mil 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) Meters controlling

GPH Type High Reliability Bonding Wire



Ø Diameter ±1% µm	Breaking Load (gf)	Breaking Load (mN)	Elongation EL (%)	Length Meters	Length Feet	Part Number	Order Nr
Ø 15µm (Ø 0.6 mil)	3.5~6.3 gf	34~62 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)	5.0~9.0 gf	49~88 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)	6.2~11.1 gf	61~109 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)	9.7~17.4 gf	95~171 mN	2.0~7.0%	100m 300m 500m	300ft 1000ft 1500ft	GPH-25A100 GPH-25A300 GPH-25A500	308251 308253 308255
Ø 30µm (Ø 1.2 mil)	13.9~25.1gf	123~232 mN	2.0~7.0%	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	2.0~7.0%	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)

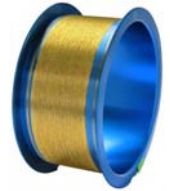
Note 2: Higher bond reliability and good character for halogen free mold compound.

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

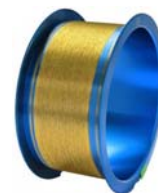
GPH Type High Reliability Bonding How to Order



Part Number System				
<u>GPH</u>	-	<u>25</u>	<u>A</u>	<u>100</u>
Type		Ø Diameter µm	Spool Type	Length Meters
Gold 2N (Au99-x) GPH= High Reliability 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

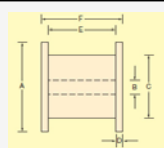
Order Number				
<u>3</u>	<u>0</u>	<u>8</u>	<u>25</u>	<u>1</u>
Alloy	Shape	Model	Ø Diameter	Length
<u>Code</u> • <u>Description</u> 3 = Gold (Au)	<u>Code</u> <u>Description</u> 0 = Round Wire	<u>Gold Wire (Au)</u> 8 =GPH	<u>µm</u> <u>Mil</u> 15 0.6mil 18 0.7mil 20 0.8mil 23 0.9mil 25 1.0mil 28 1.1mil 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

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 50m 100m	75ft 150ft 300ft	M3-12.5H25 M3-12.5H50 M3-12.5A100	303129 303120 303121
Ø 15µm (Ø 0.6 mil)	2.0 gf Min	19.6 mN Min	1.0~6.0%	25m 50m 100m	75ft 150ft 300ft	M3-15H25 M3-15H50 M3-15A100	303159 303150 303151
Ø 18µm (Ø 0.7 mil)	4.5~7.5 gf	44~73 mN	2.0~6.0%	25m 50m 100m	75ft 150ft 300ft	M3-18H25 M3-18H50 M3-18A100	303189 303180 303181
Ø 20µm (Ø 0.8 mil)	6.0~9.0 gf	59~88 mN	2.0~6.0%	25m 50m 100m	75ft 150ft 300ft	M3-20H25 M3-20H50 M3-20A100	303209 303200 303201
Ø 25µm (Ø 1.0 mil)	9.0~13.5 gf	88~132 mN	2.0~7.0%	25m 50m 100m 300m	75ft 150ft 300ft 1000ft	M3-25H25 M3-25H50 M3-25A100 M3-25A300	303259 303250 303251 303253
Ø 30µm (Ø 1.2 mil)	13.0~18.0 gf	127~177 mN	2.0~9.0%	25m 50m 100m	150ft 150ft 300ft	M3-30H25 M3-30H50 M3-30A100	303309 303300 303301
Ø 32µm (Ø 1.25 mil)	15.0~20.0 gf	147~196 mN	3.0~9.0%	25m 50m 100m	75ft 150ft 300ft	M3-32H25 M3-32H50 M3-32A100	303329 303320 303321
Ø 33µm (Ø 1.3 mil)	15.0~21.0 gf	147~206 mN	3.0~9.0%	25m 50m 100m	75ft 150ft 300ft	M3-33H25 M3-33H50 M3-33A100	303339 303330 303331
Ø 35µm (Ø 1.4 mil)	18.0~26.0 gf	177~255 mN	3.0~9.0%	25m 50m 100m	75ft 150ft 300ft	M3-35H25 M3-35H50 M3-35A100	303359 303350 303351
Ø 38µm (Ø 1.5 mil)	20.0~30.0 gf	196~294 mN	4.0~12.0%	25m 50m 100m	75ft 150ft 300ft	M3-38H25 M3-38H50 M3-38A100	303389 303380 303381
Ø 50µm (Ø 2.0 mil)	30.0~50.0 gf	294~490 mN	4.0~12.0%	25m 50m 100m	75ft 150ft 300ft	M3-50H25 M3-50H50 M3-50A100	303509 303500 303501

Spool Information

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

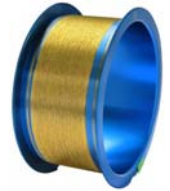
Note 1: Bold wire for ball and wedge bonding on manual bonder.

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

Note 3: Standard Tolerance: Ø12.5um~38um ±1 um , Ø50um ±2 um

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

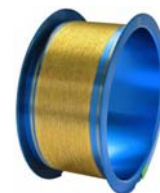
M3 Type How to Order



Part Number System				
<u>M3</u>	-	<u>25</u>	<u>A</u>	<u>100</u>
Type		Ø Diameter µm	Spool Type	Length Meters
Gold 4N (Au99.99) M3 = Manual Bonders Gold Wire Bonding Wire		Code Mil 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	Meters Feet Spool 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
Code • Description 3 = Gold (Au)	Code Description 0 = Round Wire	Gold Wire (Au) 3 = M3	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 35 1.4mil 38 1.5mil 50 2.0mil	Code Meters Feet 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 (%)	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 300m 500m	300ft 1000ft 1500ft	GBC-15A100 GBC-15A300 GBC-15A500	305151 305153 305155
Ø 18µm (Ø 0.7 mil)	>5.0 gf	>49 mN	1.5~4.0%	0.872~ 1.089	100m 300m 500m	300ft 1000ft 1500ft	GBC-18A100 GBC-18A300 GBC-18A500	305181 305183 305185
Ø 20µm (Ø 0.8 mil)	>9.0 gf	>88 mN	1.5~4.0%	1.089~ 1.330	100m 300m 500m	300m 1000ft 1500ft	GBC-20A100 GBC-20A300 GBC-20A500	305201 305203 305205
Ø 25µm (Ø 1.0 mil)	>11.0 gf	>108 mN	1.0~5.0%	1.737~ 2.039	100m 300m 500m	300ft 1000ft 1500ft	GBC-25A100 GBC-25A300 GBC-25A500	305251 305253 305255
Ø 30µm (Ø 1.2 mil)	>15 gf	<147 mN	1.5~5.0%	2.536~ 2.898	100m 300m 500m	300ft 1000ft 1500ft	GBC-30A100 GBC-30A300 GBC-30A500	305301 305303 305305
Ø 32µm (Ø 1.25 mil)	>18.0 gf	>177 mN	1.5~5.0%	2.898~ 3.284	100m 300m 500m	300ft 1000ft 1500ft	GBC32A100 GBC-32A300 GBC-32A500	305321 305323 305325
Ø 35µm (Ø 1.4 mil)	>27.0 gf	>265 mN	1.5~6.0%	3.486~ 3.909	100m 300m 500m	300ft 1000ft 1500ft	GBC32A100 GBC-32A300 GBC-32A500	305321 305323 305325
Ø 38µm (Ø 1.5 mil)	>30.0 gf	>294 mN	1.5~6.0%	4.129~ 4.587	100m 300m 500m	300ft 1000ft 1500ft	GBC-38A100 GBC-38A300 GBC-38A500	305381 305383 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.

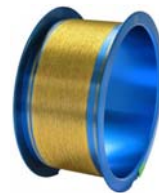
Note 2: Minimal deviation of ball neck height after bumping with steady bump shape.

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



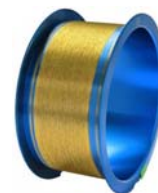
Part Number System				
<u>GBC</u>	-	<u>25</u>	<u>A</u>	<u>100</u>
Type		Ø Diameter µm	Spool Type	Length Meters
<u>Gold 2N (Au99-Pd1)</u> GBC = Bumping Wire		Code Mil	Aluminum Spool	Meters Feet Spool
		15 0.6mil	A = 2"x1" AL-2(W)	100 300ft (A)
		18 0.7mil	B = 2"x2" AL-4	300 1000ft (A)
		20 0.8mil		500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

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

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

GBE Type Gold 4N (Au) Bumping Wire



Ø Diameter ±1% µm	Breaking Load (gf)	Breaking Load (mN)	Elongation EL (%)	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	300ft 1000ft 1500ft	GBE-15A100 GBE-15A300 GBE-15A500	301151 301153 301155
Ø 18µm (Ø 0.7 mil)	>6.0 gf	>59mN	1.0~4.0%	Au 19.32	100m 300m 500m	300ft 1000ft 1500ft	GBE-18A100 GBE-18A300 GBE-18A500	301181 301183 301185
Ø 20µm (Ø 0.8 mil)	>8.0 gf	>78 mN	1.0~4.0%	Au 19.32	100m 300m 500m	300ft 1000ft 1500ft	GBE-20A100 GBE-20A300 GBE-20A500	301201 301203 301205
Ø 25µm (Ø 1.0 mil)	>14 gf	>137 mN	1.0~5.0%	Au 19.32	100m 300m 500m	300ft 1000ft 1500ft	GBE-25A100 GBE-25A300 GBE-25A500	301251 301253 301255
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.

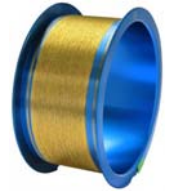
Note 2: Minimal deviation of ball neck height after bumping with steady bump shape.

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 Type How to Order



Part Number System				
<u>GBE</u>	-	<u>25</u>	<u>A</u>	<u>100</u>
Type		Ø Diameter µm	Spool Type	Length Meters
<u>Gold 4N (Au100)</u> GBE = Bumping Wire		<u>Code</u> <u>Mil</u> 15 0.6mil 18 0.7mil 20 0.8mil 23 0.9mil 25 1.0mil 28 1.1mil 30 1.2mil 32 1.25mil 35 1.4mil 38 1.5mil	<u>Aluminum Spool</u> A = 2"x1" AL-2(W) B = 2"x2" AL-4	<u>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>1</u>	<u>25</u>	<u>1</u>
Alloy	Shape	Model	Ø Diameter	Length
<u>Code • Description</u> 3 = Gold (Au) 4N	<u>Code</u> <u>Description</u> 0 = Round Wire	<u>Gold Wire (Au)</u> 1 = GBE	<u>µm</u> <u>Mil</u> 15 0.6mil 18 0.7mil 20 0.8mil 23 0.9mil 25 1.0mil 28 1.1mil 30 1.2mil 32 1.25mil 35 1.4mil 38 1.5mil	<u>Code</u> <u>Meters</u> <u>Feet</u> 1 = 100m (300ft) 3 = 300m (1000ft) 5 = 500m (1500ft) 6 = 1000m (3000ft) 7 = 2500m (8000ft) 9 = other Meters controlling

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

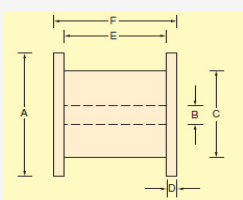
Note	Feature	Bump Wire	Bonding Wire
1	Number of Bonds	One Bond Only To Die Pad or Substrate	Two Bonds From Die Pad to Package.
2	Purpose/Application	Single Au (gold) wire is squashed. Wire is then reflowed (melted) to form a bump for a flip chip.	Bonding from the die to the leadframe (or substrate) with a loop (wedge or stitch).
3	Repeatable Wire Break	Bumping wire is intended to break close to neck area of first bond.	Bonding wire has a longer HAZ (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.

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 50µm (Ø 2.0 mil)	35~45 gf	338~435 mN	2.0~10%	100m	300ft	Y-50B100	331501
Ø 62.5µm (Ø 2.5 mil)	35~75gf	338~725 mN	6.0~20%	100m	300ft	Y-63B100	331631
Ø 65µm (Ø 2.5 mil)	40~80gf	386~775 mN	6.0~20%	100m	300ft	Y-65B100	331651
Ø 75µm (Ø 3.0 mil)	60~105gf	580~1015 mN	2.0~12%	100m	300ft	Y-75B100	331751
Ø 100µm (Ø 4.0 mil)	120~200 gf	1160~1935 mN	3.0~15%	100m	300ft	Y-100B100	331001
Ø 125µm (Ø 5.0 mil)	150 gf Min	1450 mN Min	>3.0%	100m	300ft	Y-125K100	331011
Ø 150µm (Ø 6.03 mil)	200 gf Min	1935 mN Min	>3.0%	100m	300ft	Y-150K100	331021
Ø 175µm (Ø 7.0 mil)	250 gf Min	2400 mN Min	>4.0%	100m	300ft	Y-175K100	331031
Ø 200µm (Ø 8.0 mil)	325 gf Min	3140 mN Min	>4.0%	100m	300ft	Y-200K100	331041
Ø 250µm (Ø10.0 mil)	400 gf Min	3800 mN Min	>5.0%	100m	300ft	Y-250K100	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
	89mm	11mm	50mm	3.0mm	31mm	37mm	88K	K

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: Ø50µm ±3 µm , Ø60~100µm ±3µm , Ø125~250µm ±5µm
Note 3: Wire Diameter available: 50µm , 65µm , 75µm , 100µm , 125µm , 150µm , 200µm , 250µm

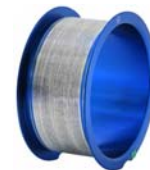
Y Type How to Order



Part Number System				
<u>Y</u>	-	<u>125</u>	<u>B</u>	<u>100</u>
Type		Ø Diameter µm	Spool Type	Length Meters
Gold 4N (Au99.99) Y = Wedge to Wedge High Power Bonders Bonding Wire and BSOB Ball Stitch on Ball Safety Bond		Code Mil 50 2.0mil 63 2.5mil 65 2.5mil 75 3.0mil 100 4.0mil 125 5.0mil 150 6.0mil 175 7.0mil 200 8.0mil 250 10mil	Aluminum Spool A = 2"x1" AL-2(W) B = 2"x2" AL-4 Polycarbonate Spool K = 3.5"x1.5" 88K	Meters Feet Spool 50 150ft (B) 100 300ft (B) 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
Code • Description 3 = Gold (Au)	Code Description 3 = Round Wire	Gold Wire (Au) 1 = Y	Code µm Mil 50 50µm 2mil 63 62.5µm 2.5mil 65 65µm 2.5mil 75 75µm 3mil 00 100µm 4mil 01 125µm 5mil 02 150µm 6mil 03 175µm 7mil 04 200µm 8mil 05 250µm 10mil	Code Meters Feet 0 = 50m (150ft) 1 = 100m (300ft) 3 = 300m (1000ft) Meters controlling

SEA Type Silver (Ag) Bonding Wire



Ø Diameter ±1% µm	Breaking Load (gf)	Breaking Load (mN)	Elongation EL (%)	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 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%	0.495~0.619	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%	0.619~0.756	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%	0.987~1.158	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%	1.441~1.647	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 Type offers low resistivity similar to 2N Au wire.

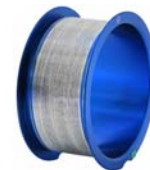
Note 5: SEC Type has softer FAB hardness and low resistivity similar to 4N Au wire.

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 , 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
Silver (Ag100) SEA = Bonding Wire SEB = Bonding Wire SEC = 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

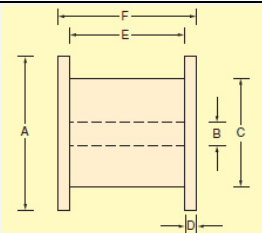
Order Number				
<u>5</u>	<u>0</u>	<u>1</u>	<u>25</u>	<u>1</u>
Alloy	Shape	Model	Ø Diameter	Length
Code • Description 5 = Silver (Ag)	Code Description 0 = Round Wire	Type 1 = SEA 2 = SEB 3 = SEC	µm Mil 15 0.6mil 18 0.7mil 20 0.8mil 23 0.9mil 25 1.0mil 28 1.1mil 30 1.2mil	Code Meters Feet 1 = 100m (300ft)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

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



Ø Diameter ±1% µm	Breaking Load (gf)	Breaking Load (mN)	Elongation EL (%)	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%	0.276~0.36 1	100m 300m 500m 1000m	300ft 1000ft 1500ft 3000ft	CLR1AT-15N100 CLR1AT-15N300 CLR1AT-15N500 CLR1AT-15N1000	700151 700153 700155 700156
Ø 18µm (Ø 0.7 mil)	3.3~8.9 gf	31~71mN	5.0~15%	0.407~0.50 9	100m 300m 500m 1000m	300ft 1000ft 1500ft 3000ft	CLR1AT-18N100 CLR1AT-18N300 CLR1AT-18N500 CLR1AT-18N1000	700181 700183 700185 700186
Ø 20µm (Ø 0.8 mil)	4.0~8.9 gf	39~87mN	5.0~15%	0.509~0.62 1	100m 300m 500m 1000m	300ft 1000ft 1500ft 3000ft	CLR1AT-20N100 CLR1AT-20N300 CLR1AT-20N500 CLR1AT-20N1000	700201 700203 700205 700206
Ø 25µm (Ø 1.0 mil)	6.3~14.0 gf	62~137mN	5.0~15%	0.812~0.95 2	100m 300m 500m 1000m	300ft 1000ft 1500ft 3000ft	CLR1AT-25N100 CLR1AT-25N300 CLR1AT-25N500 CLR1AT-25N1000	700251 700253 700255 700266
Ø 30µm (Ø 1.2 mil)	9.0~20.1 gf	88~19mN	7.0~20%	1.185~1.35 4	100m 300m 500m 1000m	300ft 1000ft 1500ft 3000ft	CLR1AT-30N100 CLR1AT-30N300 CLR1AT-30N500 CLR1AT-30N1000	700301 700303 700305 700306
Ø 32µm (Ø 1.25 mil)	10.3~22.9 gf	101~225mN	7.0~20%	1.354~1.53 4	100m 300m 500m 1000m	300ft 1000ft 1500ft 3000ft	CLR1AT-32N100 CLR1AT-32N300 CLR1AT-32N1000	700321 700323 700326
Ø 38µm (Ø 1.5 mil)	14.4~32.3 gf	141~316mN	7.0~20%	1.929~2.14 3	100m 300m 500m	300ft 1000ft 1500ft	CLR1AT-38N100 CLR1AT-38N300 CLR1AT-38N500	700381 700383 700385
Ø 50µm (Ø 2.0 mil)	29.2~60.4 gf	1286~592mN	10.0~25%	3.246~3.81 0	100m 300m 500m	300ft 1000ft 1500ft	CLR1AT-50N100 CLR1AT-50N300 CLR1AT-50N500	700501 700502 700505

Spool Information

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

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

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

INFO

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

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

Note 3: Requires grounded wire bonding equipment. Stable bonding N₂ or Forming Gas 95/5.

Note 4: CLR-2AT softer version available on special order

Note 5: Standard Tolerance: Ø15µm~38µm ±1 µm Ø40~50µm ±2 µm

Note 6: 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		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		
		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 • 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

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 μm	Spool Type	Length Meters
Bare Cu Ribbon 4N		<u>Metric</u> 500x100um 1000x100um 1500x100um 2000x100um	<u>Polycarbonate Spool</u> P = $\varnothing 88\text{mm} \times 31\text{mm}$ $\varnothing 3.5" \times 1.25"$ Spool Nbr 88	<u>Meters</u> <u>Feet</u> 100 300ft 200 600ft
		<u>Mil</u> 20x4 mil 40x4 mil 60x4 mil 80x4 mil		
		1000x150um 1500x150um 2000x150um		
		40x6 mil 60x6 mil 80x6 mil		
		1000x200um 1500x200um 2000x200um		
		40x8 mil 60x8 mil 80x8mil		
				Meters controlling dimension

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</u> <u>Description</u> 7 = Flat Ribbon	<u>Type</u> 3 = CPR-1 (4N)	<u>Code</u> <u>W x Th</u> See Table Below	<u>Code</u> <u>Meters</u> <u>Feet</u> 1 = 100m (300ft) 2 = 200m (600ft) Meters controlling

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

CA-1 Type Copper Alloy Bonding Wire



Ø Diameter ±1% µm	Breaking Load (gf)	Breaking Load (mN)	Elongation EL (%)	Weight mg/200mm	Length Meters	Length Feet	Part Number	Order Nr
Ø 15µm (Ø 0.6 mil)	2.4~54 gf	23~53mN	7.0~17%	0.267~0.360	100m 500m 1000m	300ft 1500ft 3000ft	CA1-15N100 CA1-15N500 CA1-15N1000	701151 701155 701156
Ø 18µm (Ø 0.7 mil)	3.4~7.6 gf	33~75mN	7.0~17%	0.460~0.508	100m 300m 500m 1000m	300ft 1000ft 1500ft 3000ft	CA1-18N100 CA1-18N300 CA1-18N500 CA1-18N1000	701181 701183 701185 701186
Ø 20µm (Ø 0.8 mil)	4.2~9.5 gf	41~93mN	7.0~17%	0.508~0.620	100m 300m 500m 1000m	300ft 1000ft 1500ft 3000ft	CA1-20N100 CA1-20N300 CA1-20N500 CA1-20N1000	701201 701203 701205 701206
Ø 25µm (Ø 1.0 mil)	6.5~14.6 gf	64~143 mN	8.0~20%	0.810~0.950	100m 300m 500m 1000m	300ft 1000ft 1500ft 3000ft	CA1-25N300 CA1-25N300 CA1-25N500 CA1-25N1000	701251 701253 701255 701256
Ø 30µm (Ø 1.2 mil)	9.3~20.8 gf	91~204 mN	9.0~22%	1.182~1.351	100m 300m 500m 1000m	300ft 1000ft 1500ft 3000ft	CA1-30N100 CA1-30N300 CA1-30N500 CA1-30N1000	701301 701303 701305 701306
Ø 32µm (Ø 1.25 mil)	10.9~24.4 gf	107~239 mN	9.0~22%	1.351~1.531	100m 300m 500m 1000m	300ft 1000ft 1500ft 3000ft	CA1-32N100 CA1-32N300 CA1-32N500 CA1-32N1000	701321 701323 701325 701326
Ø 38µm (Ø 1.5 mil)	15.2~33.9 gf	149~332 mN	9.0~22%	1.925~2.138	100m 300m 500m	300ft 1000ft 1500ft	CA1-38N100 CA1-38N300 CA1-38N500	701381 701383 701385
Ø 50µm (Ø 2.0 mil)	28.5~59.9 gf	279~587 mN	12~27%	2.030~2.480	100m 300m 500m	300ft 1000ft 1500ft	CA1-50N100 CA1-50N300 CA1-50N500	701501 701503 701505
Ø 70µm (Ø 2.8 mil)	55.8~117.4 gf	547~1151 mN	12~27%	6.311~7.492	100m 300m	300ft 1000ft	CA1-70N100 CA1-70N300	701701 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.

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: $\varnothing 15\mu\text{m} \sim 38\mu\text{m} \pm 1\mu\text{m}$ $\varnothing 40\mu\text{m} \sim 50\mu\text{m} \pm 2\mu\text{m}$ $\varnothing 60\mu\text{m} \sim 70\mu\text{m} \pm 3\mu\text{m}$

Note 5: Wire Diameter: $15\mu\text{m}$, $18\mu\text{m}$, $20\mu\text{m}$, $23\mu\text{m}$, $25\mu\text{m}$, $30\mu\text{m}$, $32\mu\text{m}$, $38\mu\text{m}$, $40\mu\text{m}$, $50\mu\text{m}$, $60\mu\text{m}$, $70\mu\text{m}$

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CA-1 Type How to Order



Part Number System						
<u>CA1</u>	-	<u>25</u>	<u>N</u>	<u>100</u>		
Type		$\varnothing$ Diameter μm	Spool Type	Length Meters		
CA1 = Copper Alloy		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		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	$\varnothing$ Diameter	Length	
<u>Code • Description</u> 7 = Copper Type	<u>Code</u> <u>Description</u> 0 = Round Wire	<u>Type</u> 1 = CA-1 Cu Alloy	<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 60 2.4mil 70 2.7mil	<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 dimension



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CFB-1 Type Bare Copper Bonding Wire



Ø Diameter ±1% µm	Breaking Load (gf)	Breaking Load (mN)	Elongation EL (%)	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 300m 500m 1000m	300ft 1000ft 1500ft 3000ft	CFB1-18N100 CFB1-18N300 CFB1-18N500 CFB1-18N1000	702181 702183 702185 702186
Ø 20µm (Ø 0.8 mil)	4.4~9.6 gf	43~94mN	7.0~17%	0.506~0.618	100m 300m 500m 1000m	300ft 1000ft 1500ft 3000ft	CFB1-20N100 CFB1-20N300 CFB1-20N500 CFB1-20N1000	702201 702203 702205 702206
Ø 25µm (Ø 1.0 mil)	6.8~14.8 gf	67~145 mN	8.0~20%	0.807~0.947	100m 300m 500m 1000m	300ft 1000ft 1500ft 3000ft	CFB1-25N100 CFB1-25N300 CFB1-25N500 CFB1-25N1000	702251 702253 702255 702256
Ø 30µm (Ø 1.2 mil)	9.7~21.1 gf	95~207 mN	12~24%	1.178~1.347	100m 300m 500m 1000m	300ft 1000ft 1500ft 3000ft	CFB1-30N100 CFB1-30N300 CFB1-30N500 CFB1-30N1000	702301 702303 702305 702306
Ø 32µm (Ø 1.25 mil)	11.3~24.8 gf	111~243 mN	12~24%	1.347~1.526	100m 300m 500m 1000m	300ft 1000ft 1500ft 3000ft	CFB1-32N100 CFB1-32N300 CFB1-32N500 CFB1-32N1000	702321 702323 702325 702326
Ø 38µm (Ø 1.5 mil)	15.8~34.5 gf	155~338 mN	12~24%	1.918~2.131	100m 300m 500m	300ft 1000ft 1500ft	CFB1-38N100 CFB1-38N300 CFB1-38N500	702381 702383 702385
Ø 50µm (Ø 2.0 mil)	26.5~57.9 gf	260~568 mN	14~26%	3.228~3.789	100m 300m 500m	300ft 1000ft 1500ft	CFB1-50N100 CFB1-50N300 CFB1-50N500	702501 702503 702505
Ø 70µm (Ø 2.8 mil)	52.0~113.5 gf	510~1113 mN	14~26%	6.290~7.467	100m 300m	300ft 1000ft	CFB1-70N100 CFB1-70N300	702701 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.

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: $\varnothing 15\mu\text{m} \sim 38\mu\text{m} \pm 1\mu\text{m}$ $\varnothing 40\mu\text{m} \sim 50\mu\text{m} \pm 2\mu\text{m}$ $\varnothing 60\mu\text{m} \sim 70\mu\text{m} \pm 3\mu\text{m}$

Note 5: Wire Diameter: $18\mu\text{m}$, $20\mu\text{m}$, $23\mu\text{m}$, $25\mu\text{m}$, $28\mu\text{m}$, $30\mu\text{m}$, $32\mu\text{m}$, $38\mu\text{m}$, $40\mu\text{m}$, $50\mu\text{m}$, $60\mu\text{m}$, $70\mu\text{m}$

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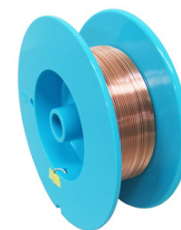
CFB-1 Type How to Order



Part Number System						
<u>CFB1</u>	-	<u>25</u>	<u>N</u>	<u>100</u>		
Type		$\varnothing$ Diameter μm	Spool Type	Length Meters		
CFB1 = Bare Copper		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		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	$\varnothing$ 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> 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 60 2.4mil 70 2.7mil	<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

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	10mm	50mm	3mm	25mm	3mm	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.

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: $\varnothing 100\mu\text{m} \sim \varnothing 150\mu\text{m} \pm 5 \mu\text{m}$ $\varnothing 200\mu\text{m} \sim \varnothing 450\mu\text{m} \pm 7 \mu\text{m}$ $\varnothing 500\mu\text{m} \pm 10 \mu\text{m}$

Note 5: Wire Diameter: 100 μm , 125 μm , 150 μm , 200 μm , 250 μm , 300 μm , 380 μm , 400 μm and 500 μm

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CP-1 Type How to Order



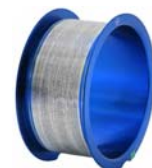
Part Number System				
<u>CP1</u>	-	<u>400</u>	<u>P</u>	<u>100</u>
Type		$\varnothing$ Diameter μm	Spool Type	Length Meters
CP1 = Heavy Power Copper 4N		Code Mil	Polycarbonate Spool P = $\varnothing 88\text{mm} \times 31\text{mm}$ $\varnothing 3.5" \times 1.25"$	Standard:
		100 4mil		Meters Feet Spool
		125 5mil		100 300ft (P)
		150 6mil		
		200 8mil		
		250 10mil		
		300 12mil		
		350 14mil		
		380 15mil		
		400 16mil		
		450 18mil		
		500 20mil		
				Meters controlling dimension

Order Number				
<u>7</u>	<u>0</u>	<u>7</u>	<u>09</u>	<u>1</u>
Alloy	Shape	Model	$\varnothing$ Diameter	Length
Code • Description 7 = Copper Type	Code Description 0 = Round Wire	Type 7 = CP-1 Heavy Power Cu	Code μm Mil 02 150 μm 6mil 03 175 μm 7mil 04 200 μm 8mil 05 250 μm 10mil 06 300 μm 12mil 07 350 μm 14mil 08 380 μm 15mil 09 400 μm 16mil 10 450 μm 18mil 11 500 μm 20mil	Code Meters Feet 1 = 100m (300ft) Special: 0 = 50m (150ft) 2 = 200m (600ft) 3 = 300m (1000ft) 9 = other Meters controlling



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TABN Type Aluminum Al-1% Si Bonding Wire



Ø Diameter ±1% µm	Breakin g Load (gf)	Breaking Load (mN)	Elongation EL (%)	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	25m	75ft	TABN-18H25	403189
					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	25m	75ft	TABN-20H25	403209
					50m	150ft	TABN-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	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%	0.36~0.41	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%	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	50m	150ft	TABN-50H50	403500
					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

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.

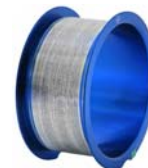
Note 2: TABN with nickel doping for better corrosion resistance under PCT.

Note 3: Standard Tolerance: $\varnothing 100\mu\text{m} \sim 175\mu\text{m} \pm 5\mu\text{m}$ $\varnothing 200\mu\text{m} \sim 450\mu\text{m} \pm 7\mu\text{m}$ $\varnothing 500 \sim 600\mu\text{m} \pm 10\mu\text{m}$

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

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TABN Type How to Order



Part Number System					
<u>TABN</u>	-	<u>25</u>	<u>A</u>	<u>100</u>	
Type		$\varnothing$ Diameter μm	Spool Type	Length Meters	
TABN = Aluminum Al-1% Si With Nickel Doping		Code	Aluminum Spool A = 2"x1" AL-2(W) B = 2"x2" AL-4 H = 1/2" AL-1/2	Meters	Feet Spool
		18		25	75ft (H)
		20		50	150ft (H)
		25		100	300ft (A)
		28		300	1000ft (A)
		30		500	1500ft (A)
		32		1000	3000ft (B)
		35		2500	8000ft (B)
		38		Meters controlling dimension	
		40			
		50			
TABW = LEGACY Aluminum Al-1% Si Without Nickel Doping Scheduled for Obsolescence		80			

Order Number				
<u>4</u>	<u>0</u>	<u>3</u>	<u>25</u>	<u>1</u>
Alloy	Shape	Model	$\varnothing$ Diameter	Length
<u>Code • Description</u> 4 = Aluminum	<u>Code Description</u> 0 = Round Wire	<u>Type</u> 3 = TABN Al-1%Si With Nickel LEGACY 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 Meters 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



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TANW 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 300m	300ft 1000ft	TANW-380K100 TANW-380K300	405081 405083
Ø 400µm (Ø 16mil)	550~750 gf	5.39~7.35 N	10~30%	Soft 2	100m 300m	300ft 1000ft	TANW-400K100 TANW-400K300	405091 405093
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 200m	300ft 600ft	TANW-500K100 TANW-500K200	405111 405112
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"	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 Type How to Order



Part Number System				
<u>TANW</u>	-	<u>300</u>	<u>K</u>	<u>100</u>
Type		Ø Diameter µm	Spool Type	Length Meters
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 K = Ø88mm x 31mm Ø3.5" x 1.25" 11mm Shaft T = Ø120mm x 38mm Ø4.75" x 1.5" 11mm Shaft	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>Type</u> 5 =TANW Al Power Large Diameter	<u>Code µm Mil</u> 00 100µm 4mil 01 125µm 5mil 02 150µm 6mil 03 175µm 7mil 04 200µm 8mil 05 250µm 10mil 06 300µm 12mil 07 350µm 14mil 08 380µm 15mil 09 400µm 16mil 10 450µm 18mil 11 500µm 20mil 12 600µm 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: Ø100~175µm ±5 µm Ø200~450µm ±7 µm Ø500~600µm ±10 µm

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

Sizes Codes				
<u>100um</u>	<u>150um</u>	<u>200um</u>	<u>250um</u>	<u>300um</u>
4.0 mil	6.0mil	8.0mil	10mil	12mil
Code • Width 46 = 500um 48 = 750um 49 = 1000um 42 = 1500um	Code • Width 64 = 1000um 67 = 1250um 65 = 1500um 66 = 2000um	Code • Width 84 = 1000um 87 = 1250um 85 = 1500um 86 = 2000um	Code • Width 95 = 1500um 96 = 2000um	Code • Width 98 = 1500um 99 = 2000um

Other TABR sizes available.

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



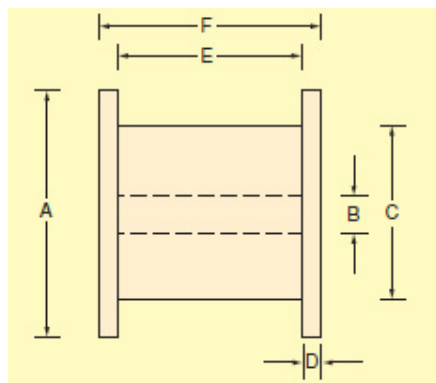
Part Number System					
<u>AuR</u>	-	<u>100x12.7</u>	<u>A</u>	<u>50</u>	
Type		Size Code	Spool Type	Length Meters	
AuR = Gold Au Bonding Ribbon 4N		W x Th 25~200 x 12.7um 50~250 x 25um 125 x 50um	Aluminum Spool A = 2"x1" AL-2 B = 2"x2" AL-4 H = 1/2" HALF	Meters 10	Feet 33ft
AuR3 = Gold Au Be Doped 4N		<i>* See Other Sizes</i>		50	150ft (H) (A)
				Special: 30	100ft (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 5 = Flat Wire 2-inch (A) Spool Be Doped	Type 6 =AuR Au Ribbon 3 =AuR Au Ribbon Be Doped	Code Width x Thick 51 = 25 x 12.7um 38 = 38 x 12.7um 50 = 50 x 12.7um 52 = 75 x 12.7um 53 = 100 x 12.7um 55 = 150 x 12.7um 10 = 50 x 25um 11 = 75 x 25um 12 = 100 x 25um 13 = 125 x 25um 14 = 150 x 25um 15 = 200 x 25um 16 = 250 x 25um	Code Meters Feet Spool "H" 0 = 10m (33ft) Spool "A" 0 = 50m (150ft) 3 = 30m (100ft) 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*

Call TopLine for AuR Gold sizes marked with asterisk *

Spools

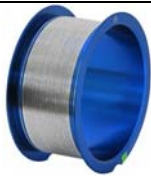
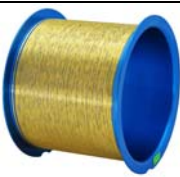


Spool Dimensions

Material	Type	A Flange Diameter	B Shaft Diameter	C Hub Diameter	D Hub Thickness	E Winding Width	F Overall Width	Style	Part Code
Aluminum	Standard Anodized Hub	58.5mm	48.8mm	50.3mm	0.75mm	26.4mm	27.9mm	AL-2W	A
		58.5mm	48.8mm	50.3mm	0.75mm	45.5mm	47.0mm	AL-4	B
	Conductive Nickel Hub	17.4mm	12.7mm	13.5mm	0.40mm	18.3mm	19.1mm	HALF	H
		58.5mm	48.8mm	50.3mm	0.75mm	26.4mm	27.9mm	AL-2WNI	C
		58.5mm	48.8mm	50.3mm	0.75mm	45.5mm	47.0mm	AL-4WNI	N
Polycarbonate	Anti-static	88mm	10mm	50mm	3mm	25mm	31mm	No.88	P
		89mm	10mm	71mm	3mm	25mm	31mm	No.88B	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 1/2" x 3/4"	P=No.88/88B Polycarbonate	K=No.88K R=No.120 T=No.120K Polycarbonate



± Tolerance Table

Alloy	Ø Diameter	Tolerance	Spool
Au Gold <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	
Ag Silver <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	
Al-1% Si <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	
Power <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	
Cu Copper Bare & Plated <u>Model</u> CLR-1AT , CHR-6BT CA-1 , CFB-1	Ø 15µm ~ 38µm (Ø 0.6 ~ 1.5 mil)	±1 µm	AL-4(Ni) Conductive
	Ø 40µm ~ 50µm (Ø 1.6 ~ 2.0 mil)	±2 µm	
	Ø 60µm ~ 70µm (Ø 2.4 ~ 2.8 mil)	±3 µm	
Flat Al Ribbon <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 µm	2.0mm Length	4.0mm Length	6.0mm Length
Gold Au	4N GSA, M3, GLD-H, GFD, GLF, GMH-2 , C, Y, FA,	Ø18 µm	0.70 A	0.35 A	0.24 A
		Ø20 µm	0.87 A	0.43 A	0.29 A
		Ø25 µm	1.36 A	0.68 A	0.45 A
	2N GBC, GPH, GPG-2	Ø18 µm	0.62 A	0.31 A	0.21 A
		Ø20 µm	0.77 A	0.38 A	0.26 A
		Ø25 µm	1.20 A	0.60 A	0.40 A
Copper Cu	CHR-BT, CFB-1	Ø18 µm	0.81 A	0.41 A	0.27 A
		Ø20 µm	1.00 A	0.50 A	0.24 A
		Ø25 µm	1.57 A	0.78 A	0.52 A
	CA-1	Ø18 µm	0.76 A	0.38 A	0.25 A
		Ø20 µm	0.94 A	0.47 A	0.31 A
		Ø25 µm	1.46 A	0.73 A	0.49 A
Silver Ag	SEA	Ø20 µm	0.48 A	0.24 A	0.16 A
		Ø25 µm	0.75 A	0.37 A	0.25 A
	SEB	Ø20 µm	0.67 A	0.34 A	0.22 A
		Ø25 µm	1.05 A	0.53 A	0.35 A
	SEC	Ø20 µm	0.84 A	0.42 A	0.28 A
		Ø25 µm	1.32 A	0.66 A	0.44 A
Aluminum Al-Si1%	TABN	Ø25 µm	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 μ m	-	0.18 A	-
		38 x 12.7 μ m	-	0.27 A	-
		50 x 12.7 μ m	-	0.36 A	-
		75 x 12.7 μ m	-	0.54 A	-
		100 x 12.7 μ m	-	0.72 A	-
		125 x 12.7 μ m	-	0.90 A	-
		150 x 12.7 μ m	-	1.08 A	-
		75 x 25 μ m	-	1.08 A	-
		100 x 25 μ m	-	1.44 A	-
		125 x 25 μ m	-	1.80 A	-
		150 x 25 μ m	-	2.16 A	-
		200 x 25 μ m	-	2.88 A	-
		250 x 25 μ m	-	3.59 A	-
Aluminum Al Ribbon	TABR	750 x 100 μ m	24.0 A	16.4 A	10.6 A
		1000 x 100 μ m	32.3 A	21.8 A	14.2 A
		1500 x 100 μ m	48.5 A	32.7 A	21.2 A
		1500 x 200 μ m	97.0 A	65.4 A	42.5 A
		2000 x 200 μ m	129.4 A	87.3 A	56.7 A
Aluminum Power Wire	TANW	Ø100 μ m	-	-	2.9 A
		Ø200 μ m	-	-	7.0 A
		Ø300 μ m	22.8 A	16.0 A	12.9 A
		Ø400 μ m	40.6 A	25.8 A	19.7 A
		Ø500 μ m	63.5 A	40.4 A	28.9 A
Copper Power Wire	CP-1	Ø100 μ m	-	4.0 A	-
		Ø300 μ m	-	22.0 A	-
		Ø350 μ m	-	29.0 A	-
		Ø400 μ m	-	37.0 A	-
		Ø450 μ m	-	45.0 A	-
		Ø500 μ m	-	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 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	See Web Page	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	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	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	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
353	AuR-3	Au 4N	Ribbon Be Doped	42~43	AL-2 and AL-4
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	36~37	1/2" and AL-2
404	TABW	Al 1%Si	Without Nickel	36~37	AL-2 and AL-4
405	TANW	Al	Power Large	38~39	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
700	CLR-1AT	Cu-Pd 4N	Palladium Coated	26~27	AL4 (WNI)
701	CA-1	Copper Alloy 2N	Bare	30~31	AL4 (WNI)
702	CFB-1	Cu Standard	Bare	32~33	AL4 (WNI)
703	CHA	Heavy Power	Bare	Discontinued	AL4 (WNI)
704	CHR-2BT	Cu-Pd 4N	Palladium Coated	Call TopLine	AL4 (WNI)
705	CHR-5BT	Cu-Pd 3N	Palladium Coated	Call TopLine	AL4 (WNI)
706	CHR-6BT	Cu-Pd 2N	Palladium Coated	28~29	AL4 (WNI)
707	CP-1	Cu - 4N	Heavy Power	34~35	No.88
708	-	-	-	-	-
709	-	-	-	-	-

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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