



Dear Valued Customer

Issue date: September 1, 2026

Yasushi Hamazawa
Director

LSI Production Headquarters
ROHM Co., Ltd.

Notification of Product/Process Change
Doc. No.: 102600E

This letter intends as a formal notification of change to products which are currently supplied by ROHM Co., Ltd.

ROHM Co., Ltd. requires customers to provide acknowledgment of the receipt of this notification within 30 days from the date of this notice. Lack of acknowledgment of this notice within 30 days is considered as acceptance of the change.

After acknowledgement of the customer, lack of additional response within 90 day period constitutes acceptance of the change according to JEDEC Standard J-STD-046.

Your understanding and cooperation would be highly appreciated.

Issue Date: September 1, 2026

Title of change	LSI bonding wire material change from gold to copper, and package material change September 2026	
Affected product(s)	Manufacturer part number	Customer part number
	Refer to the attachment.	
Detailed description of change	Before	After
	Wire Material : Gold	Wire Material : Copper The mold resin material will be changed as part of the wire material change. In addition, the lead frame will be changed for certain product models.
Reason for change	In order to ensure stable supply of our products, we intend to submit a PCN to change the bonding wire material from gold to copper.	
Anticipated impact on quality	There are no impact on the quality.	
Identification of change	Identification is possible using the internal part number on the product label.	
Planned first ship date		October 1, 2027
Qualification plan schedule, results and samples	If required, please contact the local ROHM sales office or the authorized distributor.	
Comments	For customers who provide approval before the response deadline, the changeover will be implemented sequentially for part numbers that are ready for mass production.	
Supplier contact	Please contact the local ROHM sales office or the authorized distributor.	
Notes		

Control Number : 102600E

PCN Description

LSI bonding wire material change from gold to copper, and package material change

(September 2026)

Sept. 1st, 2026

LSI Package Engineerings Div.

LSI Production Headquarters

ROHM Co., Ltd.

LSI bonding wire material change from gold to copper

<Report contents>

1. Background
2. Object Parts List
3. Comparison of 4M
4. Comparison of products
5. Comparison of product label
6. Verification for changing point
7. Reliability tests

1. Background

<Background and Purpose of change>

The price of gold has been rising in recent years, and this trend continues. In order to ensure stable supply of our products, we will submit a PCN to change the bonding wire material from gold (Au) to copper (PdCu), and the package material will be changed.

<Schedule>

Reply due : September 30, 2027

Planned first ship date : October 1, 2027

*For customers who provide approval before the response deadline, the changeover will be implemented sequentially for part numbers that are ready for mass production.

2. Object Parts List

The wire material, mold material, and lead frame will be changed, depending on the object parts.

Part number	Package type	Changing points			Pattern
BD39003EKV-CE2	HTQFP48V	Wire material Mold material			A
BD14215FVJ-LAE2 BD14230FVJ-CE2 BD14231FVJ-CE2 BD14232FVJ-CE2	TSSOP-B8J				
BD63032MUF-CE2 BD63033MUF-CE2	VQFN48FBV070				
BD9571MWF-ME2	UQFN88FV0100				
BM60014FV-CE2	SSOP-B20W	Wire material	Lead frame	Mold material	B
BD79124MUF-CE2	VQFN16FV3030	Wire material	Lead frame	Mold material	C

3-1. Comparison of 4M

This page provides information
about products in patterns A to C.



Gold wire products and copper wire products will be produced with the equivalent Machine and Method.

			Before change / Gold wire products		After change / Copper wire products	Changing point
Package Name			Refer to Parts List		Refer to Parts List	No change
Factory	Assembly	Production Site	ROHM Electronics Philippines, Inc.	Rohm Integrated Systems Thailand Co., Ltd	Same as the left	No change
		Country	Philippines	Thailand	Same as the left	
		personnel	Approximately 4,000 people	Approximately 1,300 people	Same as the left	
		Cleanroom Design	Below		Below	
		DB – WB process	Class 10,000		Same as the left	
		Molding process	Class 100,000		Same as the left	
	Test	Production Site	ROHM Electronics Philippines, Inc.	Rohm Integrated Systems Thailand Co., Ltd	Same as the left	No change
		Country	Philippines	Thailand	Same as the left	
Man	Assembly		Qualified operators		Same as the left	No change
	Test		Qualified operators		Same as the left	
Machine	Assembly	Die bonding process	Fully automatic die bonding machine		Same as left (equipment type is different)	Although the equipment type is different, the relocated production line uses the same fully automated production equipment as before the relocation.
		Wire bonding process	Fully automatic wire bonding machine		Same as left (equipment type is different)	
		Molding process	Fully automatic molding machine		Same as left (equipment type is different)	
		Tie bar cutting process	Fully automatic tie bar cutting machine		Same as left (equipment type is different)	
		Plating process	Fully automatic plating machine		Same as left (equipment type is different)	
		Marking process	Fully automatic laser marking machine		Same as left (equipment type is different)	
		Lead forming process	Fully automatic forming machine		Same as left (equipment type is different)	
	Test	Test handler	Fully automatic handler		Same as the left	No change
		Tester	Fully automatic tester		Same as the left	
	Taping	Taping process	Fully automatic taping machine		Same as the left	No change
Method	Assembly	Die bonding process	Ag paste dispensing		Same as the left	In each process step, the method remains the same, and there are no changes. ※ Since PdCu wire is used, production conditions have been modified and forming gas has been introduced at the processing point.
		Wire bonding process	Thermo-sonic bonding		Same as the left ※	
		Molding process	Transfer molding		Same as the left	
		Plating process	Electroplating		Same as the left	
	Test	Test process	Socket contact		Same as the left	No change
Material	Assembly		Please see next page		Please see next page	-

3-2. Comparison of 4M (Material)

This page provides information
about products in pattern A.



The difference between the gold wire products and the copper wire products is the wire material and the mold material. We have verified this change and confirmed there are no impact on quality.

		Before change Gold wire products	After change Copper wire products	Changing point
Lead Frame	Frame size	ROHM Standard design	Same as the left	No change
	Inner design	ROHM Standard design	Same as the left	
	Base Material	Cu alloy	Same as the left	
	Surface plating	Ag plating	Same as the left	
Die attach		Ag paste	Same as the left	No change
Wire material		Au	PdCu	Wire material has been changed.
Mold compound		Mold resin(A)	Halogen free resin (B)	Mold compound has been changed.
Outer plating		100%Sn	Same as the left	No change
Marking		Laser marking	Same as the left	No change
Carrier tape		ROHM standard material	Same as the left	No change
Reel		ROHM standard material	Same as the left	No change
Box		ROHM standard material	Same as the left	No change

3-2. Comparison of 4M (Material)

This page provides information
about products in pattern B.



The difference between the gold wire products and the copper wire products is the wire material, the mold material, and the lead frame. We have verified this change and confirmed there are no impact on quality.

		Before change Gold wire products	After change Copper wire products	Changing point
Lead Frame	Frame size	ROHM Standard design	Same as the left	Material and frame manufacturing method will be changed (from etching to punching).
	Inner design	ROHM Standard design	Same as the left	
	Base Material	Cu alloy (A)	Cu alloy (A)	
	Surface plating	Ag plating	Same as the left	
Die attach		Ag paste	Same as the left	No change
Wire material	Chip-to-Chip	Au	Au	No change
	Chip-to-Lead	Au	PdCu	Wire material has been changed.
Mold compound		Halogen free resin (A)	Halogen free resin (B)	Mold compound has been changed.
Outer plating		100%Sn	Same as the left	No change
Marking		Laser marking	Same as the left	No change
Carrier tape		ROHM standard material	Same as the left	No change
Reel		ROHM standard material	Same as the left	No change
Box		ROHM standard material	Same as the left	No change

3-2. Comparison of 4M (Material)

This page provides information
about products in pattern C.



The difference between the gold wire products and the copper wire products is the wire material, the mold material, and the lead frame. We have verified this change and confirmed there are no impact on quality.

		Before change Gold wire products	After change Copper wire products	Changing point
Lead Frame	Frame size	ROHM Standard design (A)	ROHM Standard design (B)	Lead frame size has been enlarged to improve production efficiency.
	Inner design	ROHM Standard design	Same as the left	
	Base Material	Cu alloy	Same as the left	
	Surface plating	Ag plating	Same as the left	
Die attach		Ag paste	Same as the left	No change
Wire material		Au	PdCu	Wire material has been changed.
Mold compound		Halogen free resin (A)	Halogen free resin (B)	Mold compound has been changed.
Outer plating		100%Sn	Same as the left	No change
Marking		Laser marking	Same as the left	No change
Carrier tape		ROHM standard material	Same as the left	No change
Reel		ROHM standard material	Same as the left	No change
Box		ROHM standard material	Same as the left	No change

4. Comparison of products

This page provides information
about products in patterns A to C.



There are no changes to external dimensions or product characteristics between the gold wire products and copper wire products.

Item	Comparison of gold wire products (Before change) and copper products (After change)
Part number	No change
External dimensions	No change
Internal structures	No change
Reference land pattern	No change
Marking	No change
Product characteristics	There are no changes to the characteristic specified listed in the datasheet.

5. Comparison of product label

This page provides information
about products in patterns A to C.



There are no changes to product part numbers before and after the change, although identification is possible using the internal part number on the product label.

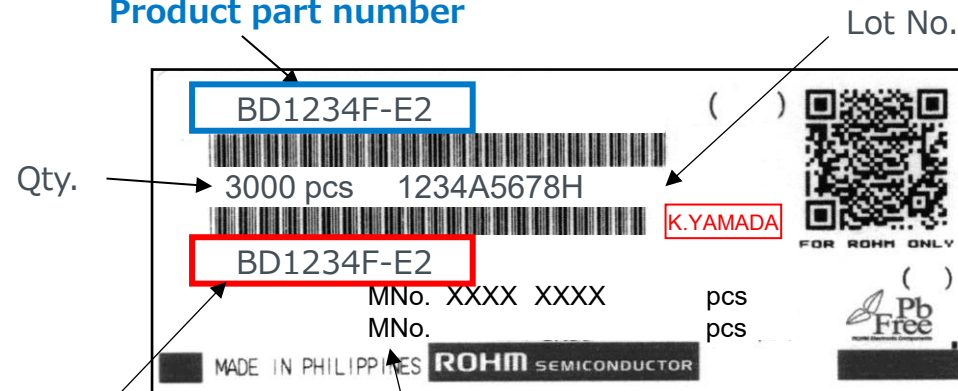
<How to identify>

For Rohm's internal product control purposes, the internal part number differs between gold wire products (before change) and copper wire products (after change). The internal part number can be found on the product label on shipping packages and reeling wheels.

	Part number	Internal part number	Remark
Before change / Gold wire products	BD1234F-E2	BD1234F-E2	
After change / Copper wire products		BD1234F-BZE2	We add "BZ" on internal part number

<Before change / Gold wire products>

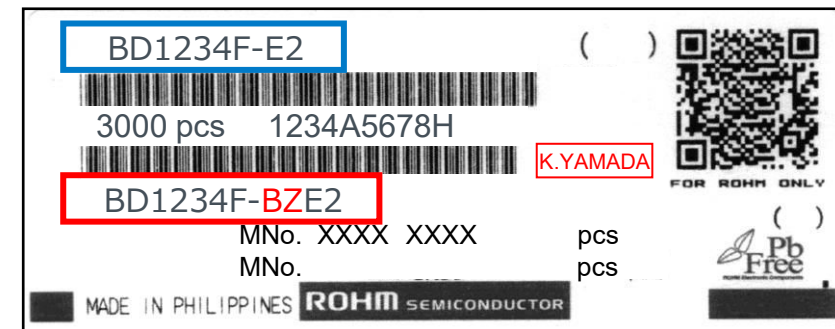
Product part number



Internal part number

Marking Lot No.

<After change / Copper wire products>



6. Verification for changing point

This page provides information
about products in patterns A to C.



ROHM verified the changes in the wire material to confirm that there is no impact on quality.

Change point	Concern	Evaluation items	criteria	Pn/N	Result	Judgment
Melting point of materials Au:1064→ Cu:1084, Pd:1555℃ Tensile strength 100→210MPa Elasticity increases 78→130GPa	There is a concerns about change in bonding properties with changing material and mechanical properties.	Wire bonding (1st bond)	Within the specifications	0/30 wire	Within the process window, the product quality meets the specified criteria and there are no issues. Under production conditions, Cpk>1.67.	Pass
		Wire bonding (2nd bond)	Within the specifications	0/30 wire	Within the process window, the product quality meets the specified criteria and there are no issues. Under production conditions, Cpk>1.67.	Pass
Vickers hardness 45→70Hv	There is a concern about cracks under the pad due to increased impact on the pad during the first bonding, because of a harder first ball.	Wire bonding (under-pad cracks)	No cracks under PAD	0/30 wire	There are no underpad cracks within the process window, so there is no issues.	Pass
Diffusion rate with aluminum $1.1 \times 10^{-4} \rightarrow 1.9 \times 10^{-16} \text{ cm}^2/\text{s}$	There is a concerns about bonding failure and a decrease in bond strength due to low bonding performance.	Wire Bonding (share strength and mode, NSOP alarm)	Within the specifications No NSOP Alarm	0/30 wire	Within the process window, no issues related to shear strength or shear mode were observed, and no NSOP alarms were triggered. Under production conditions, Cpk>1.67.	Pass
	There is a concern about wire breakage caused by Kirkendall voids between the wire and pad.	HTSL	No wire breakage caused by Kirkendall voids	0/45 x 3Lot	No abnormalities were observed in electrical characteristics after the Reliability test. Failure signs scrutiny analysis confirmed no fracture due to Kirkendall voids, and the wire bond strength met the specified criteria.	Pass
Coefficient of Thermal Expansion 14.2→16.5ppm	There is a concern about cracks at the second bond caused by increased thermal stress.	TC	No cracks at 2nd bond area	0/77 x 3Lot	No abnormalities were observed in electrical characteristics after the Reliability test. Failure signs scrutiny analysis confirmed no cracks at the 2nd bond area.	Pass
High Ionization tendency	There is a concern that the wire may become open caused by oxidation or corrosion.	AC	No wire open caused by corrosion	0/77 x 3Lot	No abnormalities were observed in electrical characteristics after the Reliability test. Failure signs scrutiny analysis confirmed no corrosion on the pads, and the wire bond strength met the specified criteria.	Pass
		THB	No wire open caused by corrosion	0/77 x 3Lot	No abnormalities were observed in electrical characteristics after the Reliability test. Failure signs scrutiny analysis confirmed no corrosion on the pads, and the wire bond strength met the specified criteria.	Pass
Using forming gas	There is a concern that there may be a decrease in wire bonding quality due to temperature drops caused by forming gas or abnormal gas flow rates.	Wire bonding (1st bond)	Within the specifications of 1st bond	0/30 wire	Within the process window, the product quality meets the specified criteria and there are no issues. Under production conditions, Cpk>1.67.	Pass
		Wire bonding (2nd bond)	Within the specifications of 2nd bond	0/30 wire	Within the process window, the product quality meets the specified criteria and there are no issues. Under production conditions, Cpk>1.67.	Pass

7. Reliability tests

This page provides information
about products in patterns A to C.



Standard reliability tests are conducted. Results from a representative product is shown below for reference.

【Pre conditions】

MSL	JEDEC LEVEL 1	JEDEC LEVEL 3
Drying	125°C 24h	
Moisture soaking	85°C 85% 168h	30°C 70% 192h
Reflow profiles	Pb free reflow profiles (260°C) 3times	

■ Reliability test results

*Resistance to soldering heat testing (PC) and preconditioning were conducted at the MSL level specified for the each products.

Reliability test									Failure signs scrutiny analysis		
Test item			Spec	Condition	Duration	Sample size		Result	Analysis	Pieces	Result
						lot	Pieces				
A1	PC	Resistance to soldering heat	J-STD-020	MSL=1/ 3	---	3 Lot	77 pcs	Pass	---	---	---
A2	THB or HAST	Temperature Humidity Bias	JESD22-A101	85°C/85%Rh/bias	2000 h	3 Lot	77 pcs	Pass	·Corrosion of the bonding pad and Al wiring ·Wire strength test	2pcs x3Lot	Pass
		High Accelerated Stress Test	JESD22-A101	130°C/85%Rh/bias	192h					3pcs x3Lot	
A3	AC	Autoclave	JESD22-A102	121°C/100%Rh	192 h	3 Lot	77 pcs	Pass	·Corrosion of the bonding pad and Al wiring ·Wire strength test	2pcs x3Lot 3pcs x3Lot	Pass
A4	TC	Temperature Cycling	JESD22-A104	-65°C/150°C/30min	1000cyc	3 Lot	77 pcs	Pass	·Passivation cracks ·2nd bond cracks ·Wire strength test	2pcs x3Lot 2pcs x3Lot 3pcs x3Lot	Pass
A6	HTSL	High Temperature Storage	JESD22-A103	150°C	2000 h	3 Lot	45 pcs	Pass	·Kirkendall void ·Wire strength test	2pcs x3Lot 3pcs x3Lot	Pass
B1	HTOL	High Temperature Operating Life	JESD22-A108	125°C/bias	2000 h	3 Lot	77 pcs	Pass	---	---	---



Electronics for the Future

Before Change (Gold Wire)

After Change (Copper Wire)

Internal PN	Public (External) PN	Internal PN
BD14215FVJ-LAE2	BD14215FVJ-LAE2	BD14215FVJ-LAX1E2
BD14230FVJ-CE2	BD14230FVJ-CE2	BD14230FVJ-CX1E2
BD14231FVJ-CE2	BD14231FVJ-CE2	BD14231FVJ-CX1E2
BD14232FVJ-CE2	BD14232FVJ-CE2	BD14232FVJ-CX1E2
BD39003EKV-C6E2	BD39003EKV-CE2	BD39003EKV-C6X1E2
BD39003EKV-CE2	BD39003EKV-CE2	BD39003EKV-CX1E2
BD63032MUF-CE2	BD63032MUF-CE2	BD63032MUF-BZCE2
BD63033MUF-CE2	BD63033MUF-CE2	BD63033MUF-BZCE2
BD79124MUF-CE2	BD79124MUF-CE2	BD79124MUF-CX1E2
BD9571MWF-ME2	BD9571MWF-ME2	BD9571MWF-MX1E2
BM60014FV-CE2	BM60014FV-CE2	BM60014FV-CX1E2

Public (External) PN

BD14215FVJ-LAE2

BD14230FVJ-CE2

BD14231FVJ-CE2

BD14232FVJ-CE2

BD39003EKV-CE2

BD39003EKV-CE2

BD63032MUF-CE2

BD63033MUF-CE2

BD79124MUF-CE2

BD9571MWF-ME2

BM60014FV-CE2