Product Change Notice (PCN)

件名: RH850/F1KM-S4 シリーズの生産拠点の追加および材料変更
発行日: 3/6/2025
出荷開始予定日: 9/1/2025
改版履歴: 初版
変更内容の説明:

RH850/F1KM-S4 の生産拠点を追加致します。

ウェハプロセス(WP)、ウェハテスト(WT):那珂工場を追加します。

WP 拠点:那珂工場 – 組立拠点:蘇州工場品はφ20umCu ワイヤ、φ20umCu ワイヤ用モールド樹脂を使用します。(ATJ 熊本品の材料変更はありません)

生産拠点及び材料変更点を下記に示します。

<table>
<tr><th>項目</th><th colspan="3">現状</th><th colspan="3">拠点追加</th></tr>
<tr><td>WP拠点</td><td colspan="3">TSMC</td><td colspan="3">那珂</td></tr>
<tr><td>WT拠点</td><td colspan="3">Ardentec / TeraPower</td><td colspan="3">那珂/ TeraPower</td></tr>
<tr><td>Back Grind / Dicing拠点</td><td>蘇州</td><td colspan="2">ATJ臼杵 / ATJ熊本</td><td>蘇州</td><td colspan="2">ATJ臼杵 / ATJ熊本</td></tr>
<tr><td>組立拠点</td><td>蘇州</td><td colspan="2">ATJ熊本</td><td>蘇州</td><td colspan="2">ATJ熊本</td></tr>
<tr><td>Final Test拠点</td><td>蘇州</td><td>Tera Probe / TeraPower</td><td>ATJ熊本</td><td>蘇州</td><td>Tera Probe＊</td><td>ATJ熊本</td></tr>
<tr><td>ワイヤ</td><td>Φ23um Cuワイヤ</td><td colspan="2">ATJ Cuワイヤ</td><td>Φ20um Cuワイヤ</td><td colspan="2">ATJ Cuワイヤ</td></tr>
<tr><td>モールド樹脂</td><td>Φ23um Cuワイヤ用樹脂</td><td colspan="2">ATJ 樹脂</td><td>Φ20um Cuワイヤ用樹脂</td><td colspan="2">ATJ 樹脂</td></tr>
<tr><td>対象PKG (LQFP)</td><td>100, 144, 176pin</td><td>100, 144, 176pin</td><td>100pin</td><td>100, 144, 176pin</td><td>100, 144, 176pin</td><td>100pin</td></tr>
</table>

＊WP:那珂品のFinal Test 拠点にTeraPowerは含まれません。

対象製品リスト: 付録欄“対象製品リスト”をご参照ください。

変更の理由: 製品の安定供給のため。

外形、実装、機能、品質、信頼性への影響:
本変更による外形、実装、機能、品質、信頼性への影響はありません。

製品の識別方法: マーク、ラベルにて識別可能です。詳細は、付録欄をご参照下さい。

信頼性データについて: 付録欄“Q100 Qualification Test Results”をご参照ください。

サンプル出荷予定日: 4/21/2025
サンプル提供は蘇州工場品のみ(最大 50 個まで)となりますので予めご了承願います。

製品/材料の化学物質データ: 弊社営業へお問合せください。

ご注意:

1. PCN をお客様にお渡しした後 30 日以内に受理の御連絡を頂けない場合は、変更内容を御承認頂いたものとみなして変更を実施させて頂きます。

2. お客様が PCN を受理されて承認手続きのための条件が有る場合は、PCN をお客様にお渡しした後 90 日以内に御連絡をお願い致します。90 日以内に何の御連絡もない場合も御承認頂いたものとみなして変更を実施させて頂きます。

3. 変更内容について御承認頂けない場合、最終注文数の御提示と御発注をお願い致します。

この通知に関するお問い合わせは、弊社営業、特約店までお願い致します。

付録

製品リスト

RH850/F1KM-S4 シリーズ　(組立拠点: 蘇州工場)

R7F7016363AFP-C#AA1	R7F7016483AFP-C#AA1	R7F701A584AFP-C#AA1	R7F701A813AFP-C#AA1
R7F7016363AFP-C#BA1	R7F7016483AFP-C#BA1	R7F701A584AFP-C#BA1	R7F701A813AFP-C#BA1
R7F7016363AFP-C#KA1	R7F7016483AFP-C#TA1	R7F701A584AFP-C#KA1	R7F701A813AFP-C#KA1
R7F7016443AFP-C#AA1	R7F7016493AFP-C#AA1	R7F701A594AFP-C#AA1	R7F701A823AFP-C#AA1
R7F7016443AFP-C#BA1	R7F7016493AFP-C#BA1	R7F701A594AFP-C#BA1	R7F701A823AFP-C#BA1
R7F7016443AFP-C#KA1	R7F7016493AFP-C#TA1	R7F701A594AFP-C#TA1	R7F701A823AFP-C#KA1
R7F7016453AFP-C#AA1	R7F701A554AFP-C#AA1	R7F701A604AFP-C#AA1	R7F701A833AFP-C#AA1
R7F7016453AFP-C#BA1	R7F701A554AFP-C#BA1	R7F701A604AFP-C#BA1	R7F701A833AFP-C#BA1
R7F7016453AFP-C#KA1	R7F701A554AFP-C#KA1	R7F701A604AFP-C#TA1	R7F701A833AFP-C#KA1
R7F7016463AFP-C#AA1	R7F701A564AFP-C#AA1	R7F701A793AFP-C#AA1	R7F701A843AFP-C#AA1
R7F7016463AFP-C#BA1	R7F701A564AFP-C#BA1	R7F701A793AFP-C#BA1	R7F701A843AFP-C#BA1
R7F7016463AFP-C#KA1	R7F701A564AFP-C#KA1	R7F701A793AFP-C#TA1	R7F701A843AFP-C#KA1
R7F7016473AFP-C#AA1	R7F701A574AFP-C#AA1	R7F701A803AFP-C#AA1	
R7F7016473AFP-C#BA1	R7F701A574AFP-C#BA1	R7F701A803AFP-C#BA1	
R7F7016473AFP-C#KA1	R7F701A574AFP-C#KA1	R7F701A803AFP-C#TA1	

RH850/F1KM-S4 シリーズ　(組立拠点: ATJ 熊本)

R7F7016463AFD-C#AA1	R7F7016483AFD-C#AA1	R7F701A574AFD-C#AA1	R7F701A594AFD-C#AA1
R7F7016463AFD-C#BA1	R7F7016483AFD-C#BA1	R7F701A574AFD-C#BA1	R7F701A594AFD-C#BA1
R7F7016463AFD-C#KA1	R7F7016483AFD-C#TA1	R7F701A574AFD-C#KA1	R7F701A594AFD-C#TA1
R7F7016473AFD-C#AA1	R7F7016493AFD-C#AA1	R7F701A584AFD-C#AA1	R7F701A604AFD-C#AA1
R7F7016473AFD-C#BA1	R7F7016493AFD-C#BA1	R7F701A584AFD-C#BA1	R7F701A604AFD-C#BA1
R7F7016473AFD-C#KA1	R7F7016493AFD-C#TA1	R7F701A584AFD-C#KA1	R7F701A604AFD-C#TA1
R7F7016443AFD-C#AA1	R7F7016453AFD-C#AA1	R7F701A554AFD-C#AA1	R7F701A564AFD-C#AA1
R7F7016443AFD-C#BA1	R7F7016453AFD-C#BA1	R7F701A554AFD-C#BA1	R7F701A564AFD-C#BA1
R7F7016443AFD-C#KA1	R7F7016453AFD-C#KA1	R7F701A554AFD-C#KA1	R7F701A564AFD-C#KA1

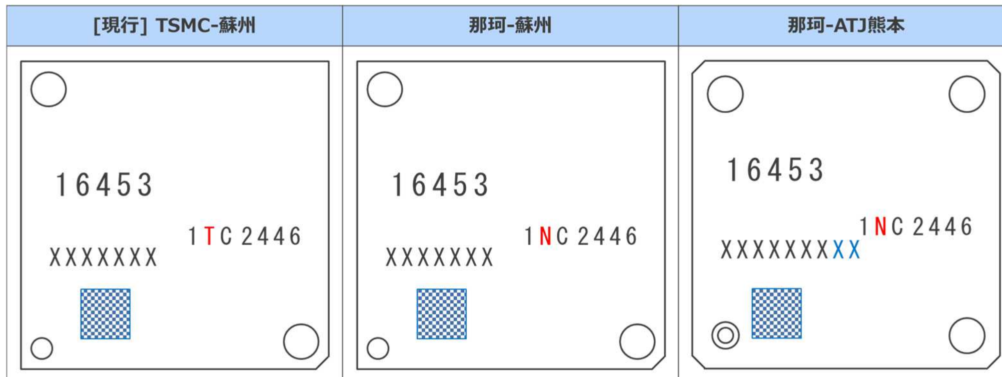
マーク仕様

マーク印字例：R7F7016453AFP(D)-C#BA1 (F1KM-S4 100pin)

那珂品は赤文字部分が異なります。(TSMC 品:T, 那珂品:N)

ATJ 熊本品はトレースコードの桁数(青文字部分)が異なります。(蘇州品:7 桁, ATJ 熊本品:9 桁)

また外形が異なります。



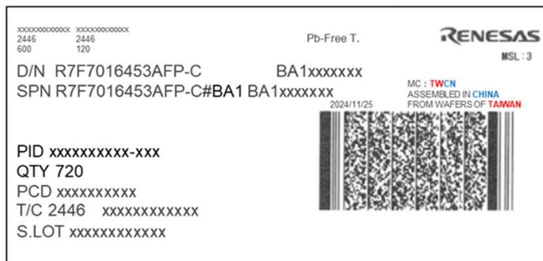
ラベル仕様

ラベル印字例：R7F7016453AFP(D)-C#BA1 (F1KM-S4 100pin)

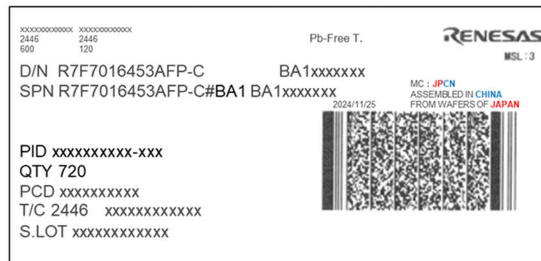
那珂品は赤文字部分が異なります。

また ATJ 熊本品、Tera Probe 品は青文字部分が異なります。

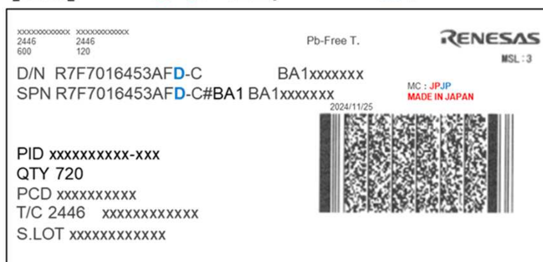
[現行] WP：TSMC、 組立/FT：蘇州



[追加] WP：那珂、 組立/FT：蘇州



[追加] WP：那珂、 組立/FT：ATJ熊本



[追加] WP：那珂、 組立：ATJ熊本、 FT：Tera Probe

那珂工場 :Renesas Semiconductor Manufacturing Co., Ltd. (Naka Factory)
TSMC :Taiwan Semiconductor Manufacturing Company Limited
TeraPower :TeraPower Technology Inc.
蘇州工場 :Renesas Semiconductor (Suzhou) Co., Ltd.
ATJ 熊本 : Amkor Technology Japan, Inc (Kumamoto)
Tera Probe :Tera Probe, Inc.

Q100 Qualification Test Results

AEC-Q100-REV-H

[Note : Qualification tests were performed using a representative product with the same wafer process and the same package structure, and also using generic data.]

Test	#	Reference	Test Conditions	Lots	S.S.	Total	Results (Fail of Total)	Comments: (N/A =Not Applicable)
TEST GROUP A – ACCELERATED ENVIRONMENT STRESS TESTS								
PC	A1	JESD22 A113 J-STD-020	Preconditioning: (Test @ Rm) SMD only; Moisture Preconditioning for THB/HAST, AC/UHST, TC, &PTC ; Peak Reflow Temp=260°C	Min.MSL=3			MSL=3	-
THB ~~or HAST~~	A2	JESD22 A101	Temperature Humidity Bias: (Test @ Rm/Hot) Ta=85°C, RH=85%, 1000hrs	3	77	231	0 of 231	-
~~AC or~~ UHST ~~or TH~~	A3	JESD22 A118	Unbiased Highly Accelerated Stree Test: (Test @ Rm) Ta=110°C, 85% RH, 264h	3	77	231	0 of 231	-
TC	A4	JESD22 A104	Temperature Cycle: (Test @ Hot) Ta=-55°C to 150°C, 1000cyc	3	77	231	0 of 231 0 Fails after TC (WBP)	-
PTC	A5	JESD22 A105	Power Temperature Cycle: (Test @ Rm/Hot) -	-	-	-	-	N/A
HTSL	A6	JESD22 A103	High Temperature Storage Life: (Test @ Rm/Hot) Ta=175°C, 500hrs	1	45	45	0 of 45	-
TEST GROUP B – ACCELERATED LIFETIME SIMULATION TESTS								
HTOL	B1	JESD22 A108	High Temp Operating Life: (Test @ Rm/Cold/Hot) Ta=150°C, 1000hrs	3	77	231	0 of 231	-
ELFR	B2	AEC-Q100-008	Early Life Failure Rate: (Test @ Rm/Hot) Ta=125°C, 48hrs	3	800	2400	0 of 2400	-
EDR	B3	AEC-Q100-005	NVM Endurance & Data Retention Test: (Test @ Rm/Hot) — For HTOL	3	77	231	0 of 231	-
			NVM Endurance & Data Retention Test: (Test @ Rm/Hot) — For HTSL	1	45	45	0 of 45	-
TEST GROUP C – PACKAGE ASSEMBLY INTEGRITY TESTS								
WBS	C1	AEC-Q100-001 AEC-Q003	Wire Bond Shear Test: (Cpk > 1.67)	30 bonds	5 parts Min.	30 bonds	0 of 30bonds	Cpk>1.67
WBP	C2	Mil-STD-883 Method 2011 AEC-Q003	Wire Bond Pull: (Cpk > 1.67); Each bonder used	30 bonds	5 parts Min.	30 bonds	0 of 30bonds	Cpk>1.67
SD	C3	JESD22 B102 JSTD-002D	Solderability: (>95% coverage) 8 hr steam aging prior to testing	1	15	15	0 of 15	-
PD	C4	JESD22 B100, JESD22 B108 AEC-Q003	Physical Dimensions: (Cpk > 1.67)	3	10	30	0 of 30	Cpk>1.67
SBS	C5	AEC-Q100-010 AEC-Q003	Solder Ball Shear: (Cpk > 1.67); 5 balls from min. of 10 devices	-	-	-	-	N/A
LI	C6	JESD22 B105	Lead Integrity: (No lead cracking or breaking); Through-hole only; 10 leads from each of 5 devices	-	-	-	-	N/A
TEST GROUP D – DIE FABRICATION RELIABILITY TESTS								
EM	D1	JESD61	Electromigration:	-	-	-	Pass	Confirmed by process TEG
TDDB	D2	JESD35	Time Dependant Dielectric Breakdown:	-	-	-	Pass	Confirmed by process TEG
HCI	D3	JESD60 & 28	Hot Carrier Injection:	-	-	-	Pass	Confirmed by process TEG
NBTI	D4	JESD90	Negative Bias Temperature Instability:	-	-	-	Pass	Confirmed by process TEG
SM	D5	JESD61,87 & 202	Stress Migration:	-	-	-	Pass	Confirmed by process TEG

Test	#	Reference	Test Conditions	Lots	S.S.	Total	Results (Fail of Total)	Comments: (N/A =Not Applicable)
TEST GROUP E- ELECTRICAL VERIFICATION								
TEST	E1	User/Supplier Specification	Pre and Post Stress Electrical Test:	All	All	All	0 of All	-
HBM	E2	AEC-Q100-002	Electrostatic Discharge, Human Body Model: (Test @ Rm/Hot); (2KV HBM / Class 2 or better)	1	3	3	0 of 3 ESD Level= HBM:2	HBM>2KV
CDM	E3	AEC-Q100-011	Electrostatic Discharge, Charged Device Model: (Test @ Rm/Hot); (750V corner leads, 500V all other leads / Class C4B or better)	1	3	3	0 of 3 ESD Level= CDM:C4B	Corner leads: 750V Pass All other leads:500V Pass
LU	E4	AEC-Q100-004	Latch-Up: (Test @ Rm/Hot)	1	6	6	0 of 6	-
ED	E5	AEC-Q100-009 AEC-Q003	Electrical Distributions: (Test @ Rm/Hot/Cold) (where applicable, Cpk>1.67)	3	30	90	Cpk>1.67	-
FG	E6	AEC-Q100-007	Fault Grading:	-	-	-	>98%	-
CHAR	E7	AEC-Q003	Characterization: (Test @ Rm/Hot/Cold)	-	-	-	Pass	According to Renesas standard procedure
EMC	E9	SAE J1752/3	Electromagnetic Compatibility (Radiated Emissions)	1	1	1	0 of 1	-
SC	E10	AEC Q100-012	Short Circuit Characterization	-	-	-	-	N/A
SER	E11	JESD89-1 JESD89-2 JESD89-3	Soft Error Rate	1	3	3	Pass	-
LF	E12	AEC-Q005	Lead (Pb) Free: (see AEC-Q005)	-	-	-	Pass	Solderability: See SD (C3) result. Solder heat resistance: N/A (Wave Solder is Not recommended.) Whisker: Performed on product TEG with test method based on JESD201.
TEST GROUP F – DEFECT SCREENING TESTS								
PAT	F1	AEC-Q001	Process Average Testing: (see AEC-Q001)	All	All	All	Reject units outside PAT limits	Apply to mass production according to Renesas standard procedure
SBA	F2	AEC-Q002	Statistical Bin/Yield Analysis: (see AEC-Q002)	All	All	All	Reject units outside criteria	Apply to mass production according to Renesas standard procedure
TEST GROUP G – CAVITY PACKAGE INTEGRITY TESTS (for Ceramic Package testing only)								
MS	G1	JESD22 B104	Mechanical Shock: (Test @ Rm)	-	-	-	-	N/A
VFV	G2	JESD22 B103	Variable Frequency Vibration: (Test @ Rm)	-	-	-	-	N/A
CA	G3	MIL-STD-883 Method 2001	Constant Acceleration: (Test @ Rm)	-	-	-	-	N/A
GFL	G4	MIL-STD-883 Method 1014	Gross and Fine Leak:	-	-	-	-	N/A
DROP	G5	----------------	Drop Test: (Test @ Rm) MEMS cavity parts only. Drop part on each of 6 axes once from a height of 1.2m onto a concrete surface.	-	-	-	-	N/A
LT	G6	MIL-STD-883 Method 2004	Lid Torque:	-	-	-	-	N/A
DS	G7	MIL-STD-883 Method 2019	Die Shear:	-	-	-	-	N/A
IWV	G8	MIL-STD-883 Method 1018	Internal Water Vapor:	-	-	-	-	N/A