

Product Change Notice (PCN)

件名: RH850/F1KM-S1 シリーズの生産拠点の追加および材料変更

発行日: 1/30/2025

出荷開始予定日: 9/1/2025

改版履歴: 初版 (HPLM-2025-0063)

第 2 版 (9 型名削除)

R7F7016844AFD-C#AA9, R7F7016844AFD-C#BA9, R7F7016844AFD-C#KA9

R7F7016863AFD-C#AA9, R7F7016863AFD-C#BA9, R7F7016863AFD-C#KA9

R7F7016864AFD-C#AA9, R7F7016864AFD-C#BA9, R7F7016864AFD-C#KA9

変更内容の説明:

**RH850/F1KM-S1 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  
ウェハプロセス那珂工場品は蘇州工場、錦工場ともにφ20umCu ワイヤ、φ20umCu ワイヤ用モールド樹脂を使用します。(ATJ 熊本の材料変更はありません)
- バックグラインド (BG)、ダイシング (DIC) : 大分工場
- 組立、ファイナルテスト (FT) : 錦工場

生産拠点及び材料変更点を下記に示します。

項目	現状		拠点追加		
WP拠点	TSMC		那珂		
WT拠点	Ardentec / TeraPower		那珂/ TeraPower		
BG/DIC拠点	蘇州	ATJ臼杵 / ATJ熊本	蘇州	大分	ATJ臼杵 / ATJ熊本
組立拠点	蘇州	ATJ熊本	蘇州	錦	ATJ熊本
FT拠点	蘇州	Tera Probe / ATJ熊本	蘇州	錦	Tera Probe / ATJ熊本
ワイヤ	φ23um Cuワイヤ	ATJ Cuワイヤ	φ20um Cuワイヤ		ATJ Cuワイヤ
モールド樹脂	Cuワイヤ用 樹脂A	ATJ 樹脂	Cuワイヤ用 樹脂B		ATJ 樹脂
対象PKG (LQFP)	48, 64, 80, 100pin	100pin	48, 64, 80, 100pin	64, 80, 100pin	100pin

尚、生産拠点につきましては、生産能力を考慮の上、弊社にて判断させていただきます。

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いただきます。
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いただきます。
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。

**RH850/F1KM-S1 シリーズ (LQFP100pin, ATJ 熊本)**

R7F7016843AFD-C#AA1	R7F7016844AFD-C#KA1	R7F7016854AFD-C#BA1	R7F7016864AFD-C#AA1
R7F7016843AFD-C#BA1	R7F7016853AFD-C#AA1	R7F7016854AFD-C#KA1	R7F7016864AFD-C#BA1
R7F7016843AFD-C#KA1	R7F7016853AFD-C#BA1	R7F7016863AFD-C#AA1	R7F7016864AFD-C#KA1
R7F7016844AFD-C#AA1	R7F7016853AFD-C#KA1	R7F7016863AFD-C#BA1	
R7F7016844AFD-C#BA1	R7F7016854AFD-C#AA1	R7F7016863AFD-C#KA1	

**RH850/F1KM-S1 シリーズ (LQFP100pin, 蘇州工場, 錦工場)**

R7F7016843AFP-C#AA1	R7F7016853AFP-C#AA1	R7F7016863AFP-C#BA9	R7F701A643AFP-C#AA1
R7F7016843AFP-C#BA1	R7F7016853AFP-C#BA1	R7F7016863AFP-C#KA1	R7F701A643AFP-C#BA1
R7F7016843AFP-C#KA1	R7F7016853AFP-C#KA1	R7F7016863AFP-C#KA9	R7F701A643AFP-C#KA1
R7F7016844AFP-C#AA1	R7F7016854AFP-C#AA1	R7F7016864AFP-C#AA1	R7F701A653AFP-C#AA1
R7F7016844AFP-C#AA9	R7F7016854AFP-C#BA1	R7F7016864AFP-C#AA9	R7F701A653AFP-C#BA1
R7F7016844AFP-C#BA1	R7F7016854AFP-C#KA1	R7F7016864AFP-C#BA1	R7F701A653AFP-C#KA1
R7F7016844AFP-C#BA9	R7F7016863AFP-C#AA1	R7F7016864AFP-C#BA9	R7F701A663AFP-C#AA1
R7F7016844AFP-C#KA1	R7F7016863AFP-C#AA9	R7F7016864AFP-C#KA1	R7F701A663AFP-C#BA1
R7F7016844AFP-C#KA9	R7F7016863AFP-C#BA1	R7F7016864AFP-C#KA9	R7F701A663AFP-C#KA1

**RH850/F1KM-S1 シリーズ (LQFP80pin, 64pin, 蘇州工場, 錦工場)**

R7F7016873AFP-C#AA1	R7F7016894AFP-C#BA1	R7F7016914AFP-C#BA1	R7F701A683AFP-C#AA1
R7F7016873AFP-C#BA1	R7F7016894AFP-C#BA9	R7F7016914AFP-C#TA1	R7F701A683AFP-C#BA1
R7F7016873AFP-C#TA1	R7F7016894AFP-C#TA1	R7F7016923AFP-C#AA1	R7F701A683AFP-C#TA1
R7F7016874AFP-C#AA1	R7F7016894AFP-C#TA9	R7F7016923AFP-C#AA9	R7F701A693AFP-C#AA1
R7F7016874AFP-C#BA1	R7F7016903AFP-C#AA1	R7F7016923AFP-C#BA1	R7F701A693AFP-C#BA1
R7F7016874AFP-C#TA1	R7F7016903AFP-C#BA1	R7F7016923AFP-C#BA9	R7F701A693AFP-C#TA1
R7F7016883AFP-C#AA1	R7F7016903AFP-C#TA1	R7F7016923AFP-C#TA1	R7F701A703AFP-C#AA1
R7F7016883AFP-C#BA1	R7F7016904AFP-C#AA1	R7F7016923AFP-C#TA9	R7F701A703AFP-C#BA1
R7F7016883AFP-C#TA1	R7F7016904AFP-C#AA9	R7F7016924AFP-C#AA1	R7F701A703AFP-C#TA1
R7F7016884AFP-C#AA1	R7F7016904AFP-C#BA1	R7F7016924AFP-C#AA9	R7F701A713AFP-C#AA1
R7F7016884AFP-C#BA1	R7F7016904AFP-C#BA9	R7F7016924AFP-C#BA1	R7F701A713AFP-C#BA1
R7F7016884AFP-C#TA1	R7F7016904AFP-C#TA1	R7F7016924AFP-C#BA9	R7F701A713AFP-C#TA1
R7F7016893AFP-C#AA1	R7F7016904AFP-C#TA9	R7F7016924AFP-C#TA1	R7F701A723AFP-C#AA1
R7F7016893AFP-C#BA1	R7F7016913AFP-C#AA1	R7F7016924AFP-C#TA9	R7F701A723AFP-C#BA1
R7F7016893AFP-C#TA1	R7F7016913AFP-C#BA1	R7F701A673AFP-C#AA1	R7F701A723AFP-C#TA1
R7F7016894AFP-C#AA1	R7F7016913AFP-C#TA1	R7F701A673AFP-C#BA1	
R7F7016894AFP-C#AA9	R7F7016914AFP-C#AA1	R7F701A673AFP-C#TA1	

RH850/F1KM-S1 シリーズ (LQFP48pin, 蘇州工場)

R7F7016933AFP-C#AA1	R7F7016943AFP-C#AA1	R7F7016953AFP-C#BA9	R7F701A733AFP-C#AA1
R7F7016933AFP-C#AA9	R7F7016943AFP-C#BA1	R7F7016953AFP-C#KA1	R7F701A733AFP-C#BA1
R7F7016933AFP-C#BA1	R7F7016943AFP-C#KA1	R7F7016953AFP-C#KA9	R7F701A733AFP-C#KA1
R7F7016933AFP-C#BA9	R7F7016944AFP-C#AA1	R7F7016954AFP-C#AA1	R7F701A743AFP-C#AA1
R7F7016933AFP-C#KA1	R7F7016944AFP-C#BA1	R7F7016954AFP-C#AA9	R7F701A743AFP-C#BA1
R7F7016933AFP-C#KA9	R7F7016944AFP-C#KA1	R7F7016954AFP-C#BA1	R7F701A743AFP-C#KA1
R7F7016934AFP-C#AA1	R7F7016953AFP-C#AA1	R7F7016954AFP-C#BA9	R7F701A753AFP-C#AA1
R7F7016934AFP-C#BA1	R7F7016953AFP-C#AA9	R7F7016954AFP-C#KA1	R7F701A753AFP-C#BA1
R7F7016934AFP-C#KA1	R7F7016953AFP-C#BA1	R7F7016954AFP-C#KA9	R7F701A753AFP-C#KA1

マーク仕様

マーク印字例 : R7F7016844AFP (D)-C#BA1 (F1KM-S1 100pin)

那珂品は赤文字部分が異なります。(TSMC 品 : T, 那珂品 : N)

錦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, 錦品 : 9 桁)

ATJ 熊本品は外形が異なります。

[現行] TSMC-蘇州	那珂-蘇州	那珂-錦	那珂-ATJ熊本

ラベル仕様

ラベル印字例 :

R7F7016844AFP (D)-C#BA1 (F1KM-S1 100pin)

那珂品は赤文字部分が異なります。

また、錦品、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
<p>那珂工場 : Renesas Semiconductor Manufacturing Co., Ltd. (Naka Factory)</p> <p>TSMC : Taiwan Semiconductor Manufacturing Company Limited</p> <p>TeraPower : TeraPower Technology Inc.</p> <p>大分工場 : Renesas Electronics Co., Ltd. (Oita Factory)</p> <p>錦工場 : Renesas Electronics Co., Ltd. (Nishiki Factory)</p> <p>蘇州工場 : Renesas Semiconductor (Suzhou) Co., Ltd.</p> <p>ATJ 熊本 : Amkor Technology Japan, Inc (Kumamoto)</p> <p>Tera Probe : Tera Probe, Inc.</p>		

### 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)
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#### 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	-
				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)
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**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