RENESAS

PCN#:[EPP02-EX-25-0053]
PC-MCU-A041A/J

Product Change Notice (PCN)

件名：RL78/F23,F24 シリーズ　LQFP パッケージ製品の Cu ワイヤのサプライヤ追加

発行日: 4/8/2025
出荷開始予定日: 9/1/2025
改版履歴:初版

変更内容の説明:
　下記の通り RL78/ F23, F24 シリーズを対象として LQFP パッケージ製品の
　Cu ワイヤ サプライヤを追加します。

項目	変更前	変更後
Cu ワイヤ	C 社	C 社、D 社

対象組立工場：Renesas Semiconductor KL Sdn. Bhd.
サプライヤ D 社の Cu ワイヤは、車載実績のある材料です。

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:
　Cu ワイヤ サプライヤを追加することにより製品の安定供給を図るため。

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:
　製造履歴は製品のトレースコードを用いて照会可能です。

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: 対象外

製品/材料の化学物質データ: 弊社営業へお申し付けください。

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。

RL78/F23 series: Automotive Grade Level Grade2, Grade1, Grade0

48pin, Grade2	64pin, Grade2	80pin, Grade2
R7F123FGG3AFB-C#AA0	R7F123FLG3AFB-C#AA0	R7F123FMG3AFB-C#AA0
R7F123FGG3AFB-C#BA0	R7F123FLG3AFB-C#BA0	R7F123FMG3AFB-C#BA0
R7F123FGG3AFB-C#BAQ	R7F123FLG3AFB-C#BAQ	R7F123FMG3AFB-C#BAQ
R7F123FGG3AFB-C#HA0	R7F123FLG3AFB-C#HA0	R7F123FMG3AFB-C#HA0
R7F123FGG3AFB-C#HAQ	R7F123FLG3AFB-C#HAQ	R7F123FMG3AFB-C#HAQ
48pin, Grade1	64pin, Grade1	80pin, Grade1
R7F123FGG4AFB-C#AA0	R7F123FLG4AFB-C#AA0	R7F123FMG4AFB-C#AA0
R7F123FGG4AFB-C#BA0	R7F123FLG4AFB-C#BA0	R7F123FMG4AFB-C#BA0
R7F123FGG4AFB-C#BAQ	R7F123FLG4AFB-C#BAQ	R7F123FMG4AFB-C#BAQ
R7F123FGG4AFB-C#HA0	R7F123FLG4AFB-C#HA0	R7F123FMG4AFB-C#HA0
R7F123FGG4AFB-C#HAQ	R7F123FLG4AFB-C#HAQ	R7F123FMG4AFB-C#HAQ
48pin, Grade0	64pin, Grade0	80pin, Grade0
R7F123FGG5AFB-C#AA0	R7F123FLG5AFB-C#AA0	R7F123FMG5AFB-C#AA0
R7F123FGG5AFB-C#BA0	R7F123FLG5AFB-C#BA0	R7F123FMG5AFB-C#BA0
R7F123FGG5AFB-C#BAQ	R7F123FLG5AFB-C#BAQ	R7F123FMG5AFB-C#BAQ
R7F123FGG5AFB-C#HA0	R7F123FLG5AFB-C#HA0	R7F123FMG5AFB-C#HA0
R7F123FGG5AFB-C#HAQ	R7F123FLG5AFB-C#HAQ	R7F123FMG5AFB-C#HAQ

RL78/F24 series: Automotive Grade Level Grade2, Grade1, Grade0

48pin, Grade2	64pin, Grade2	80pin, Grade2	100pin, Grade2
R7F124FGJ3AFB-C#AA0	R7F124FLJ3AFB-C#AA0	R7F124FMJ3AFB-C#AA0	R7F124FPJ3AFB-C#AA0
R7F124FGJ3AFB-C#BA0	R7F124FLJ3AFB-C#BA0	R7F124FMJ3AFB-C#BA0	R7F124FPJ3AFB-C#BA0
R7F124FGJ3AFB-C#BAQ	R7F124FLJ3AFB-C#BAQ	R7F124FMJ3AFB-C#BAQ	R7F124FPJ3AFB-C#BAQ
R7F124FGJ3AFB-C#HA0	R7F124FLJ3AFB-C#HA0	R7F124FMJ3AFB-C#HA0	R7F124FPJ3AFB-C#HA0
R7F124FGJ3AFB-C#HAQ	R7F124FLJ3AFB-C#HAQ	R7F124FMJ3AFB-C#HAQ	R7F124FPJ3AFB-C#HAQ
48pin, Grade1	64pin, Grade1	80pin, Grade1	100pin, Grade1
R7F124FGJ4AFB-C#AA0	R7F124FLJ4AFB-C#AA0	R7F124FMJ4AFB-C#AA0	R7F124FPJ4AFB-C#AA0
R7F124FGJ4AFB-C#BA0	R7F124FLJ4AFB-C#BA0	R7F124FMJ4AFB-C#BA0	R7F124FPJ4AFB-C#BA0
R7F124FGJ4AFB-C#BAQ	R7F124FLJ4AFB-C#BAQ	R7F124FMJ4AFB-C#BAQ	R7F124FPJ4AFB-C#BAQ
R7F124FGJ4AFB-C#HA0	R7F124FLJ4AFB-C#HA0	R7F124FMJ4AFB-C#HA0	R7F124FPJ4AFB-C#HA0
R7F124FGJ4AFB-C#HAQ	R7F124FLJ4AFB-C#HAQ	R7F124FMJ4AFB-C#HAQ	R7F124FPJ4AFB-C#HAQ
48pin, Grade0	64pin, Grade0	80pin, Grade0	100pin, Grade0
R7F124FGJ5AFB-C#AA0	R7F124FLJ5AFB-C#AA0	R7F124FMJ5AFB-C#AA0	R7F124FPJ5AFB-C#AA0
R7F124FGJ5AFB-C#BA0	R7F124FLJ5AFB-C#BA0	R7F124FMJ5AFB-C#BA0	R7F124FPJ5AFB-C#BA0
R7F124FGJ5AFB-C#BAQ	R7F124FLJ5AFB-C#BAQ	R7F124FMJ5AFB-C#BAQ	R7F124FPJ5AFB-C#BAQ
R7F124FGJ5AFB-C#HA0	R7F124FLJ5AFB-C#HA0	R7F124FMJ5AFB-C#HA0	R7F124FPJ5AFB-C#HA0
R7F124FGJ5AFB-C#HAQ	R7F124FLJ5AFB-C#HAQ	R7F124FMJ5AFB-C#HAQ	R7F124FPJ5AFB-C#HAQ

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=-65°C to 150°C, 500cyc or Ta=-55°C to 150°C, 1000cyc (Grade1) Ta=-55°C to 150°C, 2000cyc (Grade0)	3	77	231	0 of 231 0 Fails after TC (WBP)	-
PTC	A5	JESD22 A105	Power Temperature Cycle: (Test @ Rm/Hot) Ta=-40°C to 125°C, 1000cyc	-	-	-	-	N/A
HTSL	A6	JESD22 A103	High Temperature Storage Life: (Test @ Rm/Hot) Ta=150°C, 1000hrs or Ta=175°C, 500hrs (Grade 1) Ta=175°C, 1000hrs (Grade 0)	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 (Grade1) Ta=150°C, 48hrs (Grade0)	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 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	* Applicable product only
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