

Standardized Information for Process/Product Change Notification (PCN)

Based on the JEDEC Standard JESD46 standard (latest release)

Not for publication unless permission is granted by LEM		1. PCN basic data	
1.1 Company		LEM International SA Route du Nant d'Avril 152 1217 Meyrin Switzerland	
1.2 PCN No.	PCN-056_2026_0-OMTM2617301		
1.3 Title of PCN	Alternative Operational Amplifier		
1.4 Product Category	Electronic module - Current sensor		
1.5 Issue date	2026/08/20		
1.6 PCN revision history (optional)	1.7 Issue date of previous revision (optional)	1.8 Delta to previous revision (optional)	

Form provided by ZVEI - Revision 5.0

2. PCN Team		
2.1 Contact supplier		
2.1.1 Name	Saravanakkumar Arumugam - Product Life Cycle Coordinator	
2.1.2 Phone		
2.1.3 Email	Srm@lem.com	
2.2 Team supplier (optional)		
2.2.1 Name (optional)	2.2.2 Phone (optional)	2.2.3 Email (optional)
Stéphane Rollier - Product Life Cycle	0041227061449	sro@lem.com

3. Changes			
No.	3.0 Ident	3.1 Category	3.2 Type of change
#1	SEM-PA-16	PROCESS - ASSEMBLY	Change of direct material supplier

4. Description of change			
	Old	New	
Change #1	UPC4570G2-E1-A, Renesas: Operational Amplifier, Standard (General Purpose) Amplifier 2 Circuit Push-Pull 8-SOP	UPC4570G2-E1-AP, Renesas: Operational Amplifier, Standard (General Purpose) Amplifier 2 Circuit Push-Pull 8-SOP	
	Lead Frame Material	Fe-based (Iron-based)	Cu-based (Copper-based / Palladium Pre-Plated Lead Frame)
	Mold Resin	Epoxy Resin	Epoxy Resin (Halogen-Free)
	Plating	Sn-Bi (Tin-Bismuth)	Pd (Palladium / Palladium Pre-Plated Lead Frame)
	Wire Material	Au (Gold) (23um / 20um)	Cu (Copper) (25um)
	Dimensional Drawing: Please refer to section "Changes description"		Production in Thailand: UTAC Thai Limited No problem with the implementation. Please refer to section "Changes description"

4.1 Anticipated impact on form, fit, function, reliability or processability?	Operational Amplifier alternative. Alternative is similar/same to the original, same producer RENESAS, but only with bonding wire, lead frame, lead plating and resin changes and produced from Thailand UTAC factory. Full comparison between old and new operational amplifiers as per the enclosed excel file called "OpAmp_renesas_comparison" (summary of it collected into section called "Changes description"). Qualification tests realized by Renesas as per the enclosed file called "UPC4570G2-RR-REL-03 tests report Renesas Op Amp alternative". No impact on form, fit, function, reliability, data sheet, process, quality and product safety.
4.2 Reference parts with customer number (optional)	

5. Reason / motivation for change	
5.1 Motivation	To secure supply chain, avoid shortages on deliveries further to Obsolescence announcement by Renesas
5.2 Additional explanation (optional)	

6. Marking of parts / traceability of change	
6.1 Description	No change in the marking of the parts. Traceability ensured by datecode.

7. Timing / schedule		
7.1 Date of qualification results		
7.2 Last order date (optional)		
7.3 Last delivery date (optional)		
7.4 Intended start of delivery	2026/10/01	
7.5 Qualification samples available?		
7.6 Customer feedback required until	2026/09/30	

8. Qualification / validation			
8.1 Description (e.g. qual. plan/report, AEC-Q...)	NA		
8.2 Qualification report and qualification results	not applicable	issue date	

9. Input to customer for risk assessment process	

10. Attachments (e.g. new datasheet, additional documentation, pictures, process flow, sample plan, ...)

11. Affected parts									
11.1 Current						11.2 New (if applicable)			
11.1.1 Customer Part No.	11.1.2 Supplier Part Name	11.1.3 Supplier Part No. (optional)	11.1.4 Package Name	11.1.5 Part Description (optional)	11.1.6 Additional Part Information (optional)	11.2.2 Supplier Part Name	11.2.3 Supplier Part No. (optional)	11.2.4 Package Name	11.2.6 Additional Part Information (optional)
	HY 10-P								
	HY 50-P/SP16								

Customer Feedback/Approval Form

Form provided by ZVEI - Revision 5.0

Title of PCN:			
Alternative Operational Amplifier			
Customer PCN No.		Supplier PCN No.	PCN-056_2026_0-OMTM2617301
Please check the appropriate box below:			

1. feedback to be provided within 3 weeks after the reception of the PCN.

☐	1. Feedback	date:	
☐	We agree with this proposed change for the parts as listed in chapter '11. Affected parts'. Approval letter will be sent in written form.		
☐	We agree with this proposed change schedule and will start with the PCN process. Approval letter will be sent in written form after evaluation.		
☐	We disapprove because:		
☐	Remark:		

2. feedback to be provided within 6 weeks after the reception of the PCN.

☐	2. Feedback	date:	
☐	We acknowledge qualification / validation as assigned in chapter 8 of the PCN.		
☐	We need more information:		
☐	We need the following samples:		
☐	Estimated closing date for PCN:		

	Final Feedback/Approval	date:	
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□	
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Sender:	
Company:	
Name:	
Address/Location:	
Signature:	
Date:	

Please return to: [your Sales partner]	
Name:	Saravanakkumar Arumugam - Product Life Cycle Coordinator
Address/Location:	
Phone:	
Fax:	
Email:	Srm@lem.com

In case LEM does not receive any feedback within 6 weeks at the latest after PCN notification, LEM will assume:

- Customer acceptance to the change
- No need for samples
- No additional need

1. feedback to be provided within 3 weeks after the reception of the PCN.
2. feedback to be provided within 6 weeks after the reception of the PCN.

In case LEM does not receive any feedback within 6 weeks at the latest after PCN notification, LEM will assume:

- Customer acceptance to the change
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Route du Nant d'Avril 152
1217 Meyrin
Switzerland

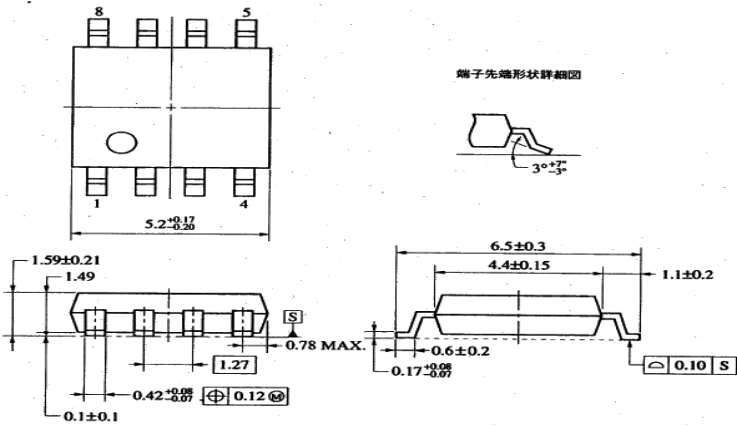
Changes Description

Change: Spec comparison between current Ampli Op and alternative one

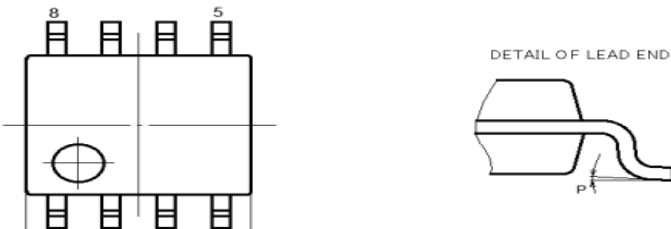
Product/Manufacture				Current Specification			Replacement model					
				UPC4570G2-E1-A / Renesas			UPC4570G2-E1-AP / Renesas					
	Item	Symbol	Conditions	Rating	Unit		Rating	Unit				
Absolute Maximum Ratings (TA = 25 °C)	Supply Voltage	V ⁺ - V ⁻		-0.3~-+36	V		-0.3~-+36	V	same			
	Differential Input Voltage	V _{ID}		±30	V		±30	V	same			
	Input Voltage	V _I		V-0.3~-V ⁺ +0.3	V		V-0.3~-V ⁺ +0.3	V	same			
	Applied Output Voltage	V _O		V-0.3~-V ⁺ +0.3	V		V-0.3~-V ⁺ +0.3	V	same			
	Total Power Dissipation	P _T		440	mW		440	mW	same			
	Output Short-Circuit Duration			10	s		10	s	same			
	Operating Ambient Temperature	T _A		-20~-+80	°C		-20~-+80	°C	same			
	Storage Temperature	T _{stg}		-55~-+125	°C		-55~-+125	°C	same			
Electrical characteristics (TA = 25 °C, V ± ±15 V)				Specification			Specification					
	Item	Symbol	Conditions	Min	Typ	Max	Unit	Min	Typ	Max	Unit	
	Input Offset Voltage	V _{IO}	R _L ≤ 50Ω		±0.3	±5	mV		±0.3	±5	mV	same
	Input Offset Current	I _{IO}			±10	±100	nA		±10	±100	nA	same
	Input Bias Current	I _B			100	400	nA		100	400	nA	same
	Large-Signal Voltage Gain	A _V	R _L ≥ 2kΩ, V _o = ±10V	30	300		V/mV	30000	300000		—	same
	Supply Current	I _{OC}	I _o = 0A, both channels		5	8	mA		5	8	mA	same
	Common-Mode Rejection Ratio	CMR		80	100		dB	80	100		dB	same
	Power Supply Rejection Ratio	SVR		80	100		dB	80	100		dB	same
	Maximum Output Voltage	V _{om}	R _L ≥ 10kΩ	±12	±13.4		V	±12	±13.4		V	same
	Maximum Output Voltage	V _{om}	R _L ≥ 2kΩ	±10	±12.8		V	±10	±12.8		V	same
	Common-Mode Input Voltage Range	V _{ICM}		±12	±14		V	±12	±14		V	same
	Slew Rate	SR	R _L ≥ 2kΩ	5	7		V/μs	5	7		V/μs	same
	Gain Bandwidth Product	GBW	f _c = 100kHz	10	15		MHz	10	15		MHz	same

Dimensions:

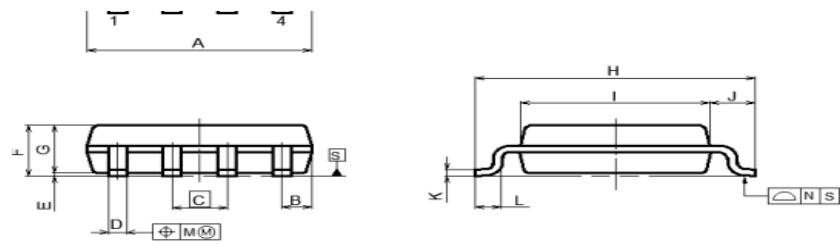
Current Op Amp:



Alternative Op Amp:



(UNIT:mm)	
ITEM	DIMENSIONS
A	5.2±0.17
B	0.78MAX
C	1.27(T.P)
D	0.40±0.05
E	0.1±0.1
F	1.59±0.21
G	1.49
H	6.5±0.3



I	4.4±0.1
J	1.05±0.15
K	0.2±0.07
L	0.6±0.20
M	0.1MAX
N	0.1MAX
P	4°±4°

RENESAS SEMICONDUCTOR RELIABILITY REPORT

SERIES: UPC4570G2

DEVICE: UPC4570G2-A
UPC4570G2-E1-A
UPC4570G2-E2-A
UPC4570G2-AP
UPC4570G2-E1-AP
UPC4570G2-E2-AP

For both products manufactured by Naito Densetsu Sado Factory (NDK) and UTAC THAI Limited (UTL)

APPLICATION: Standard

Quality Assurance Div.
Renesas Electronics Corporation

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Reliability test result

Test Items	Reference	Test Conditions	Results Reject/Size
High Temperature Operating Life	JESD22-A108	Ta=125 °C, Apply rated voltage, 1,000h	0/22
Temperature Humidity Bias (HAST)	JESD22-A110	Ta=85 °C, 85%RH, Apply rated voltage, 1,000h	0/22
Temperature Cycling	JESD22-A104	Ta=-65 ~ 150 °C, 200 cycles	0/22
High Temperature Storage Life	JESD22-A103	Ta=150 °C, 1,000h	0/22
Resistance to Soldering Heat	JESD22-A113, J-STD-020	Bake: 125°C, 24h Moisture Soak: 85°C85%RH, 168h (MSL=1) Reflow: 260°Cmax, 255°Cx30s, 3 times	0/22
Solderability	J-STD-002	245°C, 5s (Solder wetting area 95% or more)	0/22
Electrostatic discharge (HBM Method)	JS-001	C=100pF, R=1.5k ohm, ±1,000V	0/3
Electrostatic discharge (CDM Method)	JESD22-C101	±500V	0/3
Estimated Failure Rate	-	Estimated failure rate: 15Fit Ta= 55°C, Ea=0.7eV, C.L.=60%	

Reliability test results may include data from family representative products.

MSL Preconditioning was performed prior to Temperature Humidity Bias and Temperature Cycling.

<Judgement criteria>

Electrical characteristics described in the delivery specification.

(Solderability test is excluded.)

<Preconditioning Details>

125°C, 24h + 85°C85%RH 168h (JEDEC MSL1) -> Reflow (260°Cmax, 255°Cx30s, 3 times)