PRODUCT / PROCESS CHANGE NOTIFICATION

1. PCN basic data

1.1 Company	STMicroelectronics International N.V
1.2 PCN No.	ADG/18/11215
1.3 Title of PCN	SO-20 Products (Gold wire): Migration to SO20 IDF (Inter Digit Frame) line with new BOM and matte Tin plating process
1.4 Product Category	see list
1.5 Issue date	2018-12-05

2. PCN Team

2.1 Contact supplier	
2.1.1 Name	ROBERTSON HEATHER
2.1.2 Phone	+1 8475853058
2.1.3 Email	heather.robertson@st.com
2.2 Change responsibility	
2.2.1 Product Manager	Elena Maria PERNIGOTTI,Giovanni FOLETTO,Antonio RADAELLI
2.1.2 Marketing Manager	Alberto DA DALT,Emanuela VIZZI
2.1.3 Quality Manager	Marcello Donato MENCHISE

3. Change

3.1 Category	3.2 Type of change	3.3 Manufacturing Location
Materials	New direct material part number (same supplier, different supplier or new supplier), Lead frame base material	ST Muar

4. Description of change

	Old	New
4.1 Description	Current Bill Of Materials (See details in the included validation report)	New Bill Of Materials (See details in the included validation report)
4.2 Anticipated Impact on form,fit, function, quality, reliability or processability?	No Impact	

5. Reason / motivation for change

5.1 Motivation	Company Road Map
5.2 Customer Benefit	SERVICE CONTINUITY

6. Marking of parts / traceability of change

6.1 Description	Dedicated Finished Good Codes

7. Timing / schedule

7.1 Date of qualification results	2018-11-14
7.2 Intended start of delivery	2019-02-28
7.3 Qualification sample available?	Upon Request

8. Qualification / Validation

8.1 Description	11215 Validation S020IDF.pdf		
8.2 Qualification report and qualification results	Available (see attachment)	**Issue Date**	2018-12-05

9. Attachments (additional documentations)

11215 Public product.pdf
11215 Validation S020IDF.pdf
11215 Details.pdf

10. Affected parts		
10. 1 Current		10.2 New (if applicable)
10.1.1 Customer Part No	**10.1.2 Supplier Part No**	**10.1.2 Supplier Part No**
	E-L9338MD	
	E-L9338MD/TR	
	L9333MD	
	L9333MD-TR	
	L9339	
	L9339-TR	
	L9380-TR-LF	
	L93PI	
	TDA7418	
	TDA7418TR	

IMPORTANT NOTICE – PLEASE READ CAREFULLY

Subject to any contractual arrangement in force with you or to any industry standard implemented by us, STMicroelectronics NV and its subsidiaries (“ST”) reserve the right to make changes, corrections, enhancements, modifications, and improvements to ST products and/or to this document at any time without notice. Purchasers should obtain the latest relevant information on ST products before placing orders. ST products are sold pursuant to ST’s terms and conditions of sale in place at the time of order acknowledgement.

Purchasers are solely responsible for the choice, selection, and use of ST products and ST assumes no liability for application assistance or the design of Purchasers’ products.

No license, express or implied, to any intellectual property right is granted by ST herein.

Resale of ST products with provisions different from the information set forth herein shall void any warranty granted by ST for such product.

ST and the ST logo are trademarks of ST. All other product or service names are the property of their respective owners.

Information in this document supersedes and replaces information previously supplied in any prior versions of this document.

© 2018 STMicroelectronics – All rights reserved

Public Products List

Publict Products are off the shelf products. They are not dedicated to specific customers, they are available through ST Sales team, or Distributors, and visible on ST.com

PCN Title : SO-20 Products (Gold wire): Migration to SO20 IDF (Inter Digit Frame) line with new BOM and matte Tin plating process

PCN Reference : ADG/18/11215

Subject : Public Products List

Dear Customer,

Please find below the Standard Public Products List impacted by the change.

L9333MD	L93PI	L9333MD-TR
L9380-TR-LF	TDA7418TR	L9339-TR
TDA7418	L9339	L9380-LF
E-L9338MD	E-L9338MD/TR	

IMPORTANT NOTICE – PLEASE READ CAREFULLY

Subject to any contractual arrangement in force with you or to any industry standard implemented by us, STMicroelectronics NV and its subsidiaries (“ST”) reserve the right to make changes, corrections, enhancements, modifications, and improvements to ST products and/or to this document at any time without notice. Purchasers should obtain the latest relevant information on ST products before placing orders. ST products are sold pursuant to ST’s terms and conditions of sale in place at the time of order acknowledgement.

Purchasers are solely responsible for the choice, selection, and use of ST products and ST assumes no liability for application assistance or the design of Purchasers’ products.

No license, express or implied, to any intellectual property right is granted by ST herein.

Resale of ST products with provisions different from the information set forth herein shall void any warranty granted by ST for such product.

ST and the ST logo are trademarks of ST. All other product or service names are the property of their respective owners.

Information in this document supersedes and replaces information previously supplied in any prior versions of this document.

© 2018 STMicroelectronics – All rights reserved

PRODUCT/PROCESS CHANGE NOTIFICATION

SUBJECT **SO-20 Products (Gold wire): Migration to SO20 IDF (Inter Digit Frame) line with new BOM and matte Tin plating process**

IMPACTED PRODUCTS

ST Commercial Products**:**

L9333MD	L9380-TR-LF	TDA7418	MAR9125013TR-E
MAR9108TR-E	TDA7418TR	L9339	MAR9144TR
L93PI	L9339-TR	L9380-LF	E-L9338MD/TR
L9333MD-TR	MAR9134013TR	E-L9338MD	

IMPACTED MANUFACTURING STEPS

Assembly

INVOLVED PLANTS

ST Muar (Malaysia)

CHANGE REASON

Company Road Map

CHANGE DESCRIPTION

Migration to Inter Digit Frame line. Below summary of changes:

- From Pre-Plated Frame (PPF) to Matte Tin Plating Process
- Copper frame (SpAg/RgAg/SelAg) with ME2 treatment for rough surface
- Resin Sumitomo EME-G633CA
- Glue Loctite Ablestik ABP8302

No Changes Bonding Wire Material and Diameter

Details included below

TRACEABILITY

Dedicated Finished Good Code:

REPORTS

11215 Validation SO20IDF.pdf

SO20 IDF Project in Muar

- Migration to IDF line and new BOM introduction
- From Pre-Plated Frame (PPF) to Matte Tin Plating Process

November, 2018

life.augmented

Change description

Migration from SO20 Matrix to High Density Line IDF (Inter Digit Frame)

New Bill of Material (BOM)

- Copper frame (SpAg/RgAg/SelAg) with ME2 treatment for rough surface
- Resin Sumitomo EME-G633CA
- Glue Loctite Ablestik ABP8302

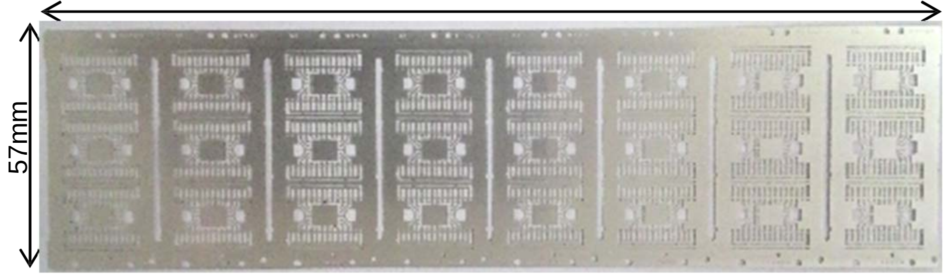
No Changes Bonding Wire Material and Diameter

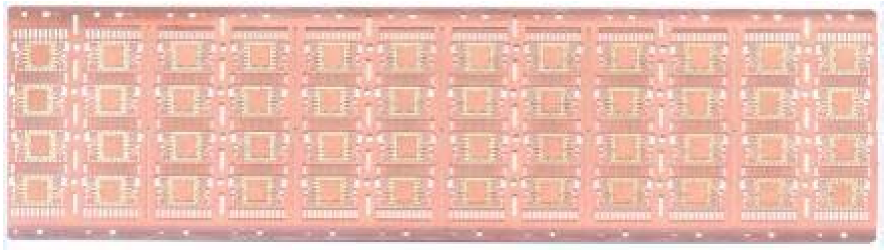
ME2 treatment has been introduced in order to improve the die attach material adhesion to the lead frame die pad.

Matte Tin plating process introduction

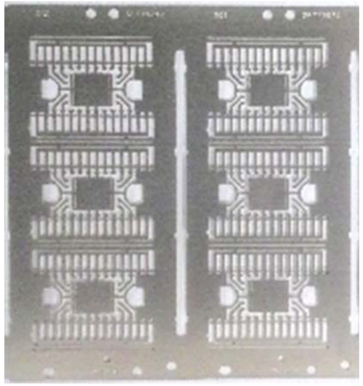
SO20 IDF Line

SO20 Matrix	SO20 Inter Digit Frame (IDF)

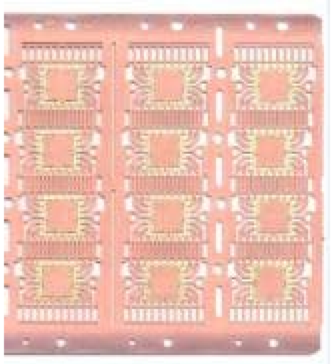




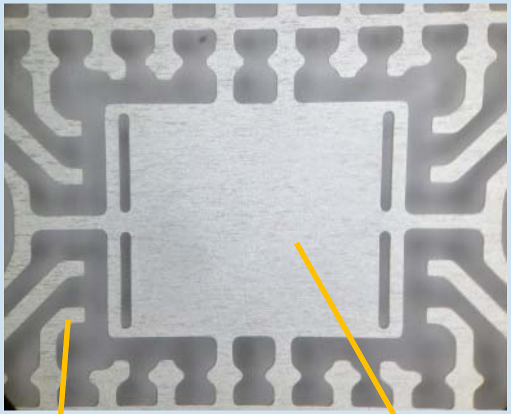
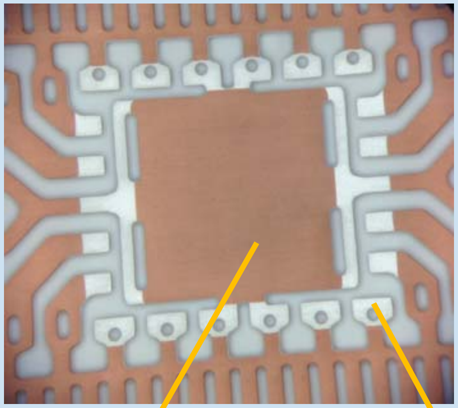
Matrix Leadframe
3row x 8columns
24units



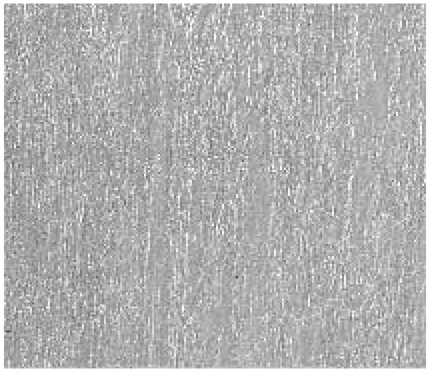
IDF Leadframe
4row x 12columns
48units



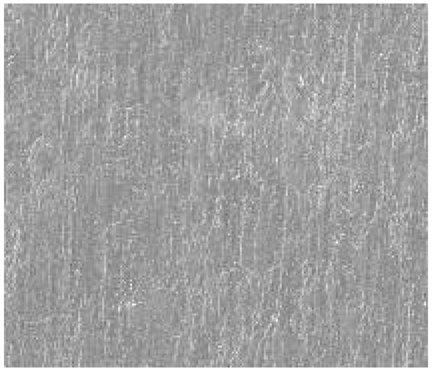
Existing frame vs ME2

Adv.Micro PPF	IDF + Cu pad (with ME2)
	

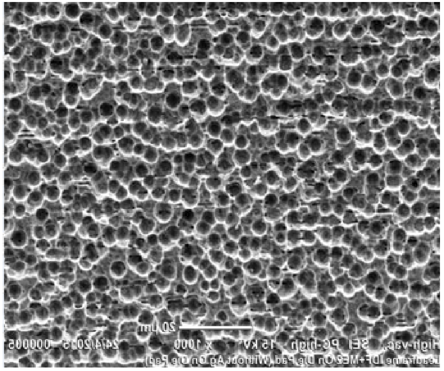
Lead tip



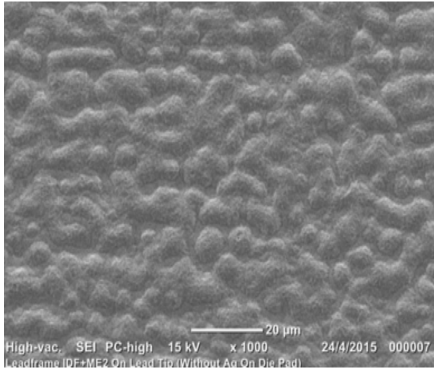
On die pad



On die pad



Lead tip



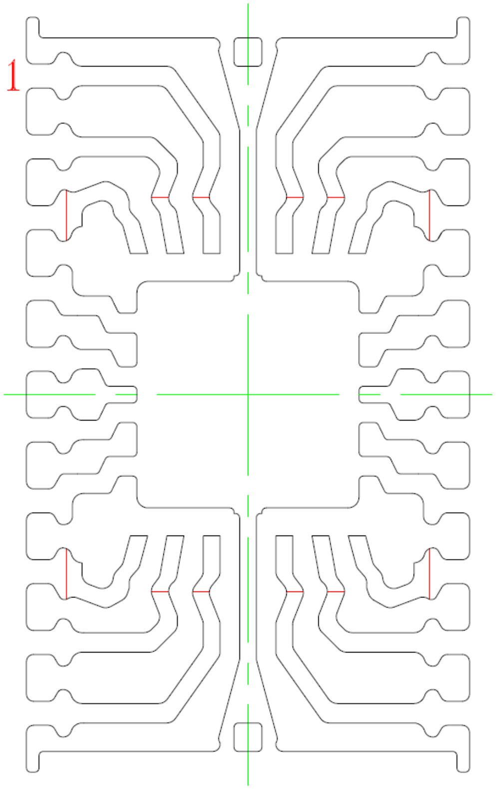
SEM images

[Note: SEM Mag 1000X]

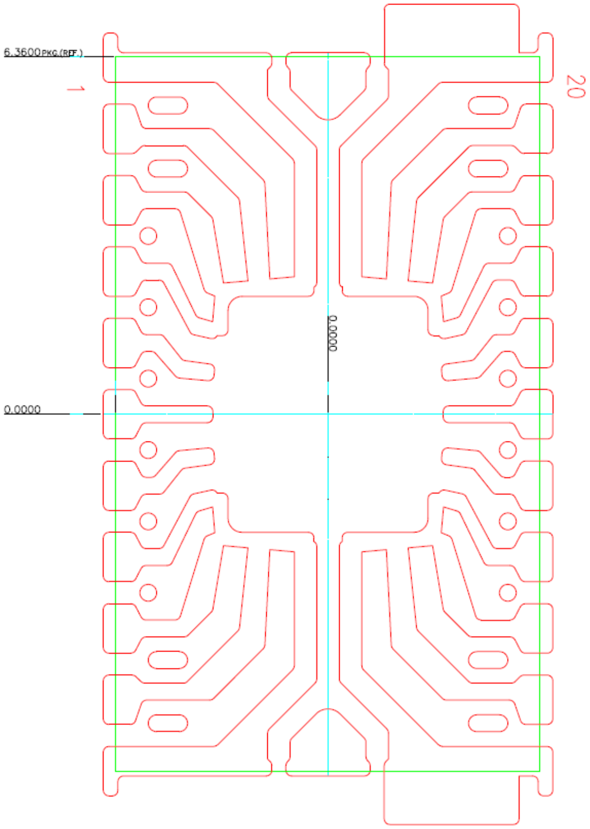
Life.augmented

Leadframe drawing comparison

ST Line: U750, U538



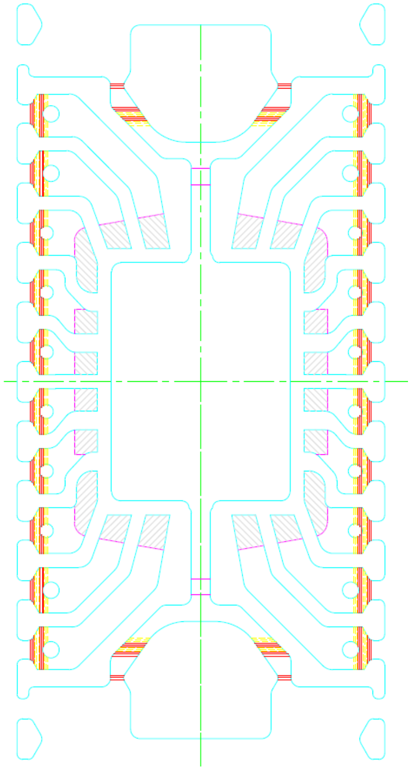
Current leadframe
die pad 157x160mils



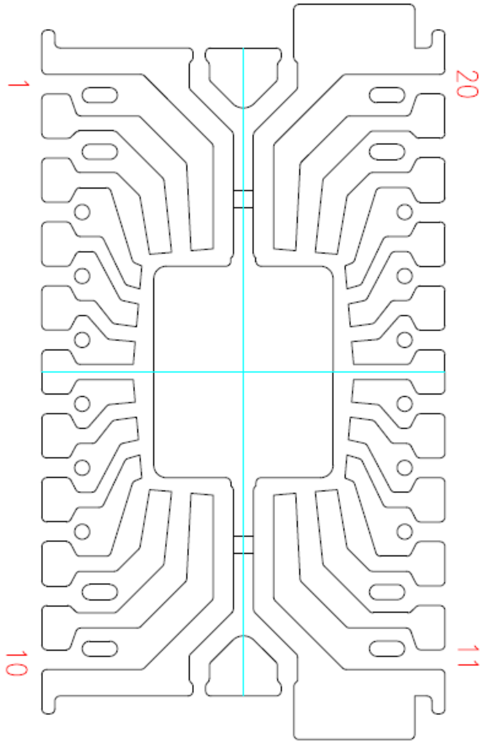
New leadframe
die pad140x165mils

Leadframe drawing comparison

ST Line: UF34



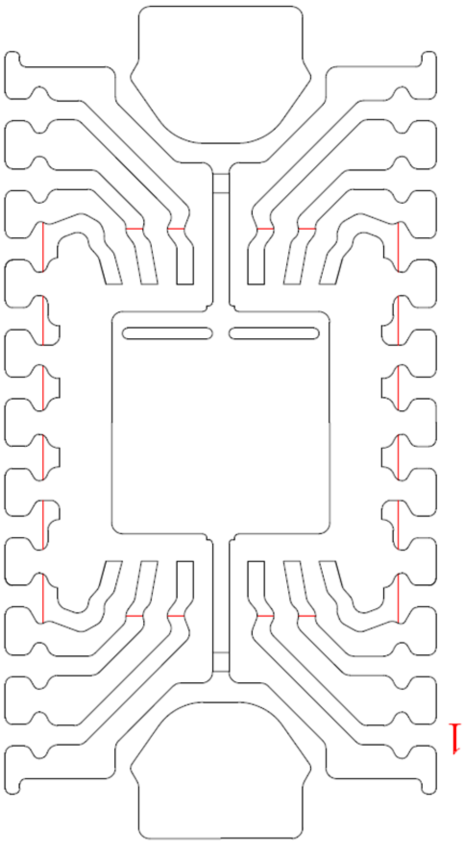
Current leadframe
die pad 150x200mils



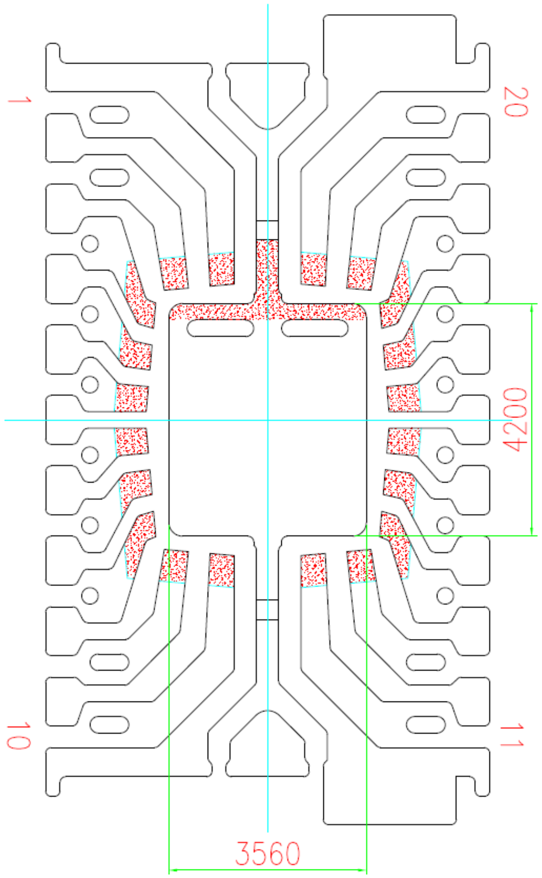
New leadframe
die pad 140x165mils

leadframe drawing comparison

Product Line: U569, U717



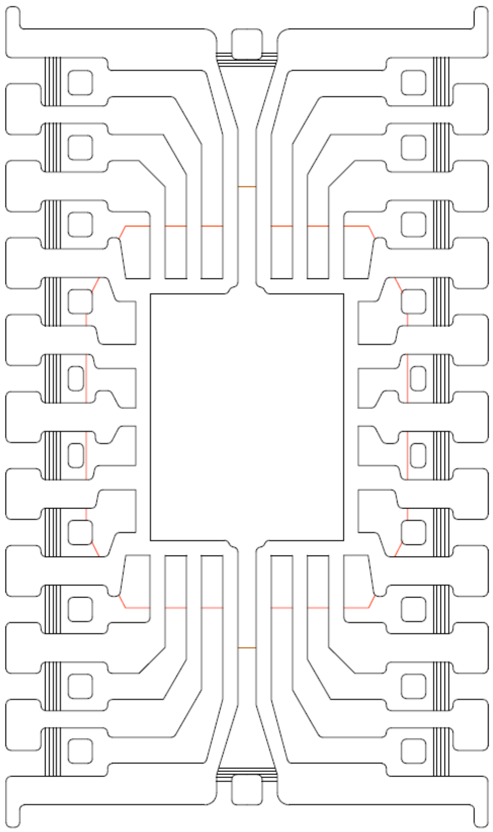
Current leadframe
die pad 157x160mils



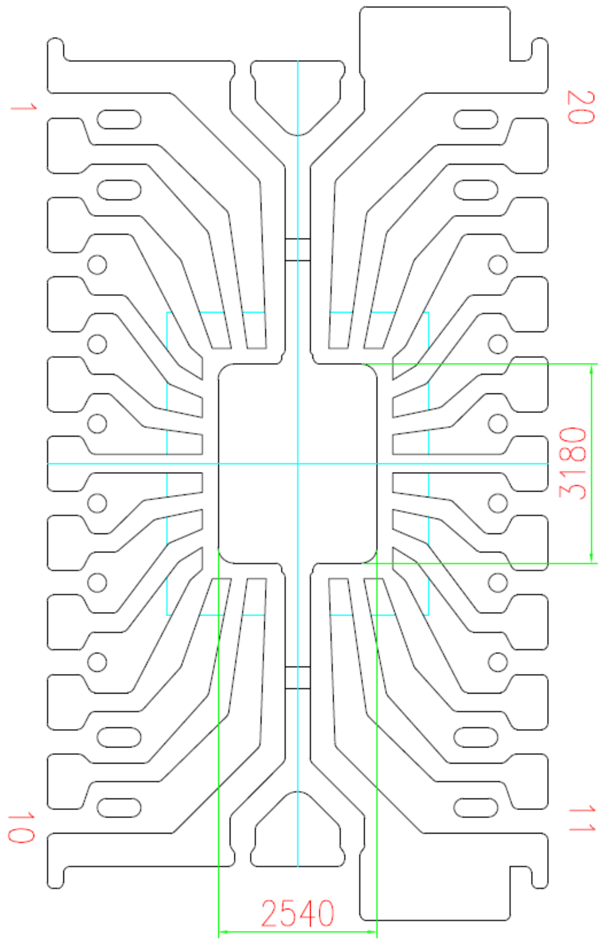
New leadframe
die pad 140x165mils

leadframe drawing comparison

Product Line: UH03



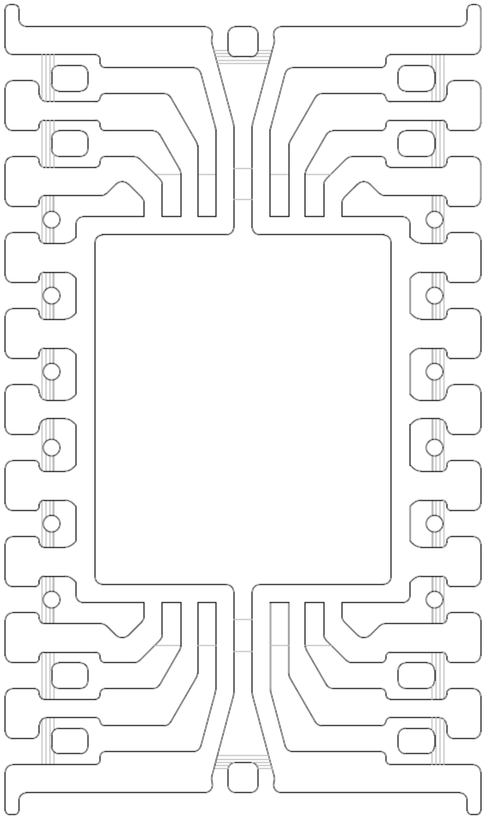
Current leadframe
die pad 125x160mils



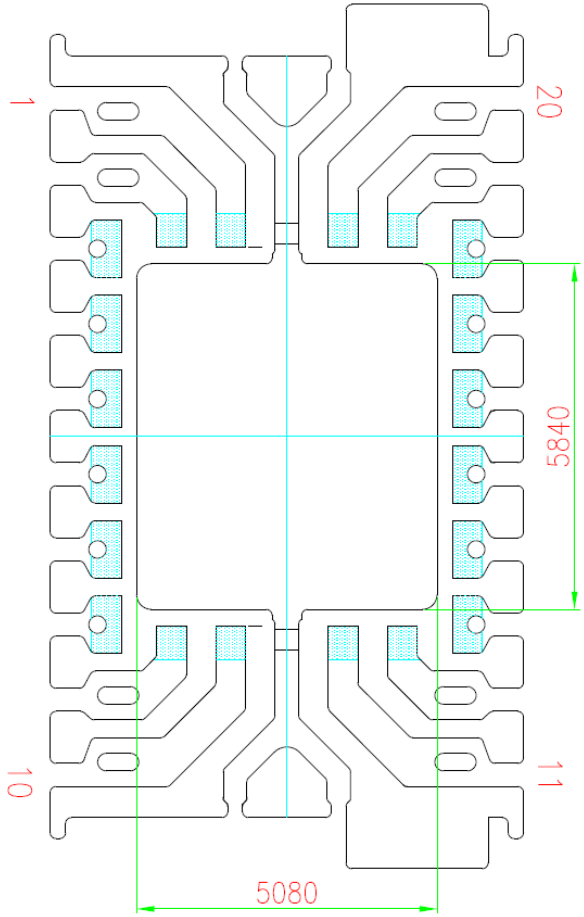
New leadframe
die pad 100x125mils

leadframe drawing comparison

Product Line: A108, A205, A139



Current leadframe
die pad 195x230mils



New leadframe
die pad 200x230mils

Leadframe Comparison

ITEM	EXISTING	NEW
Frame size	(215.7 x 57 mm)	(215.7 x 57 mm)
Units/Strip	24	48
Inner Lead Plating	PPF (NiPdAuAg or TNPd)	Selective Ag or Ring Ag
Frame base material	C194	C194
Frame process	Etched	Stamped
Plating	PPF (NiPdAuAg or TNPd)	Sn
Leadframe Supplier	DCI	ASM
Surface treatment	No	ME2

ME2: Micro Etching Version 2