

## Process Change Notification

This notification letter is to inform customers with the change of wafer supplier for TS431xxx product family due to original wafer source discontinuance. This change is intended to ensure continuity of supply and to support additional product demand.

This has been implemented since September 2019 but missed to be communicated earlier. The affected date code started from 9S1.

Above change passed standard subcon qualification testing.

We apologize for the inconvenience caused by this incident.

**PCN No:** PCN22004

**Title:** TS431xxx Family Series New wafer Source Supplier

**Issue Date:** 2022/3/11

If you have any questions concerning this change, please contact:

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**PCN Type:** New Wafer Source Supplier

**Product Category (Description):**

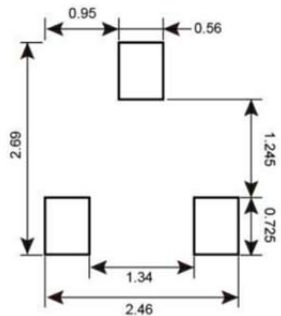
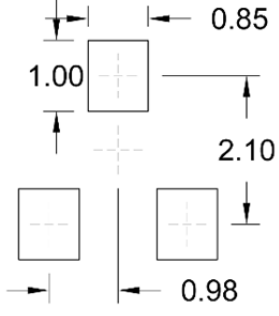
Analog IC devices in SOT-23

**Description of Change:**

**Wafer Comparison:**

Item	From	To	Remarks
Wafer Source	Fab CH	Fab MK	New Fab source
Fab Location	China	Russia	Different
Wafer Size	5	6	Different
Die Size	0.615mm*0.785mm	0.65*0.47mm <sup>2</sup>	Smaller Die
Die Thickness	525um	525um	Same
Top Metal Thickness	1.8um	2.25um	Different
Top Metal Composition	AlSi	AlSi	Same

**Datasheet Change:**

	From	To
Operating temp. range update	0~70°C	-40~85°C
Delta Vref	8mV	3mV
Pad layout		

**1. Electrical Test Result:**

**Part Number: TS431ACX**

Item	Spec USL	Spec LSL	Units	Test Results					Results
				Max.	Avg.	Min.	Stdev	Cpk	
Vref	2.47	2.52	V	2.519	2.497	2.482	0.003	2.569	ACC
Zka	0.5	--	Ω	0.498	0.054	0.001	0.050	2.954	ACC
Ika	0.6	--	mA	0.127	0.021	0.004	0.014	2.569	ACC
Iref	4	--	μA	3.946	0.218	0.002	0.230	5.401	ACC

## 2. Reliability Test Result:

**Test Vehicle: TS431ACX**  
**Package Type: SOT-23**

Stress Test	Abbrev	Test Methods	Test Conditions	Test Req't	Final Readpoint	Requirements		Schedule	
						SS	*# Lots	Rej/S S	Remarks
<b>Environmental and Lifetime Stress Tests</b>									
Pre- and Post-Stress Electrical Test	TEST	Product Datasheet	test at room temp	-	-	All	3	0 Fails	Passed
Preconditioning	PC	JESD22-A113	MSL-3 (3x reflow at 260°C)	test at 25°C	-	385	3	0/1155	Passed
Highly Accelerated Stress Test	HAST	JESD22-A110	130°C/85% RH; Vin=2.5V	test at 25°C	96 hrs	77	3	0/231	Passed
Autoclave	AC	JESD22-A102	121°C/100% RH; 15 psig	test at 25°C	96 hrs	77	3	0/231	Passed
Unbiased HAST	UHAST	JESD22-A118	130°C/85% RH; unbiased	test at 25°C	96 hrs	77	3	0/231	Passed
Temperature Humidity Unbiased	THU	JESD22-A101	85°C/85% RH, unbiased	test at 25°C	1000 hrs	77	3	0/231	Passed
Temperature Cycle	TC	JESD22-A104	-65°C to 150°C	test at 25°C	500 cycs	77	3	0/231	Passed
High Temperature Storage Life	HTSL	JESD22-A103	150°C	test at 25°C	1000 hrs	77	3	0/231	Passed
High Temperature Operating Life	HTOL	JESD22-A108	125°C; Vcc = 1.1*Vcc max	test at 25°C	1000 hrs	77	3	0/231	Passed
<b>Package Assembly Integrity Tests</b>									
Die Shear	DS	MIL 883	per assembly spec	NA	results	5	1	0/5	Passed
Wire Bond Shear	WBS	AEC Q100-001	per assembly spec	NA	results	10	3	0/10	Passed
Wire Bond Pull	WBP	MIL 883	per assembly spec	NA	results	10	3	0/10	Passed
Physical Dimension	PD	JESD22-B100/108	per assembly spec	NA	results	30	1	0/30	Passed
Solderability	SD	JESD22-A111	245°C	NA	results	15	1	0/15	Passed
<b>Electrical Verification Tests</b>									
Electrical Distribution	ED	AEC-Q100-009	per product datasheet	per part temp range	results	30	1	0/30	Passed
ESD - Human Body Model	ESD-HBM	AEC-Q100-002/3	per product spec	test at 25°C	results	3/vol t	1	0/3	Limit ±2kV
ESD - Charge Device Model	ESD-CDM	AEC-Q100-011	per product spec	test at 25°C	results	3/vol t	1	0/3	Limit ±1kV
Latch-Up	LU	JESD78E	Ta = 25°C (Class II)	test at 25°C	results	3	1	0/3	Passed

**Remarks:** Successfully passed standard subcon qualification testing.

**List of Affected Devices:**  
 TS431ACX RFG  
 TS431BCX RFG