

Process Change Notification

This is to inform you that a design and/or process change will be implemented to the affected product(s) and this notification is for your information and concurrence. This change is planned to take effect in 90 calendar days from the date of this notification.

Please work with your local Taiwan Semiconductor Sales Representative to manage your inventory of unchanged product if your evaluation of this change will require more than 90 calendar days.

Please contact your local Taiwan Semiconductor Field Quality Service or Customer Quality Engineer within 45 days of receipt of this notification if you require any additional data or samples.

PCN No: PCN25001 rev0

Title: TS431 Series Change of Die Attach Epoxy, Molding Compound and Datasheet

Issue Date: 2025/1/22

PCN Type:

Die attach material change, Molding Compound Change and Datasheet Revision

Effectivity:

Expected 1st device shipment date: 2025/4/22

Last Order Date: 2025/7/21

Last Delivery Date: 2026/7/16

Product Category (Description):

TS431ACX and TS431BCX

Description of Change:

Taiwan Semiconductor Company supplier (vendor code: 4108) is changing the molding compound and epoxy for TS431xCX products. With this changed, product operating temperature will be changed from -40~+85°C to -40~+125°C enhancing the product capability. The datasheet has also been updated for the new specifications.

1.BOM comparison:

Item	Before	After	Remarks
Epoxy	Supplier A / Ag Epoxy	Supplier B / Ag Epoxy	different supplier and % composition
EMC	Supplier H/ Green Compound	Supplier S / Green Compound	Both green compound but different supplier

2.Product Datasheet Revisions

Item	From	To
Datasheet	1. Operating temperature -40~+85°C 2. Ika(min) max. value 0.6mA	1. operating temperature -40~+125°C 2. Ika(min) max. value 0.1mA

Remark: Detailed information in the comparison report will be provided upon customer request.

Qualification and Reliability Result:

NO.	Test	Specification	Condition	Readpoint	Result (Rej/SS)
1	Preconditioning	JESD22A-113	1.Baking 125°C 24H 2.30°C 60%RH 192H 3.Reflow 260°C 3×	Soak: MSL3:192Hrs IR Reflow:3times	0/240
2	Temperature Cycling	JESD22-A104	-55(-10/+0)°C/15min to 150(+15/-0)°C/15min,	1000cycles	0/80
3	Unbiased Highly Accelerated Stress Test	JESD22-A118	Ta=130°C, 85%RH,	96hrs	0/80
4	Highly Accelerated Stress Test	JESD22-A110	130°C/85% RH; V=80% VR; 42V max	192 Hours	0/80
5	High Temperature Storage Life	JESD22-A103	150°C(+10, -0)	1000Hrs	0/80
6	High Temperature Operating Life	JESD22-A108	125°C; Vcc≥Vcc max,	1000hrs	0/80
7	Early Life Failure Rate	JESD22-A108	125°C; Vcc≥Vcc max,	48hrs	0/100
8	Electrical Distribution	AEC-Q100-009	Test at 25°C, 150°C and -40°C		0/30

NO.	Test	Specification	Condition	Readpoint	Result (Rej/SS)
9	Solderability	J-STD-002 JESD22-B102	260°C		0/15

Conclusion:

1. The change device successfully passed consumer product reliability requirement.
2. Electrical performance is comparable before and after change and can satisfy TSC datasheet specification. Data is available upon customer request.

Identification and Traceability:

Item	Identification
Traceability	Product date code

Effect of Change:

There is no impact in product electrical performance, functionality, quality and reliability. This change will guarantee Taiwan Semiconductor commitment on customer service and satisfaction through continuous improvement.

List of Affected Devices:

Family	Package	Ordering Code
2.495V Programmable Shunt Voltage Reference	SOT-23	TS431ACX RFG
2.495V Programmable Shunt Voltage Reference	SOT-23	TS431BCX RFG