



---

**FINAL NOTICE - PRODUCT / PROCESS CHANGE**  
Generic Copy

---

**27-April-2001**

**SUBJECT: Product/Process Change Notification #10695**

**TITLE: Final Notification of TO-220 Thyristor Assembly Process Conversion**

**EFFECTIVE DATE: 26-Jun-2001**

**AFFECTED CHANGE CATEGORY:** Assembly Process

**AFFECTED PRODUCT DIVISION:** Bipolar Discrete Products Division

**ADDITIONAL RELIABILITY DATA:** Available

Contact your local ON Semiconductor Sales Office

Or Baudelio Aguilar <R10303@onsemi.com>

**SAMPLES:** Contact Below

Contact your local ON Semiconductor Sales Office.

or Mike Wong <FFBVFT@onsemi.com>

**FOR ANY QUESTIONS CONCERNING THIS NOTIFICATION:**

Contact Sales Office or Mike Wong <FFBVFT@onsemi.com>

**DISCLAIMER:**

Initial Product/Process Change Notification (IPCN) - First Notification distributed to customers. Distributed at least 120 days from the effective date of the change. Final Product/Process Change Notification (FPCN) - Final Notification completing the notification process. Distributed at least 60 days from the effective date of the change. ON Semiconductor will consider this change approved unless specific conditions of acceptance are provided in writing within 30 days of receipt of this notice. To do so, contact your local ON Semiconductor Sales Office.

**DESCRIPTION AND PURPOSE:**

Conversion of additional TO-220 Thyristors to a more automated assembly process. This conversion will also include changing the internal clip and lead frame to an updated design. A previous series of thyristors are currently in production under this process (as of May 2000). Concurrently for non-JEDEC registered devices, the data sheet temperature for Peak Non-Repetitive Surge Rating will be standardized to the JEDEC temperature or 25 degrees Celsius for each affected device. The value of functional and parametric ratings, including the value of the Peak Non-Repetitive Surge rating, remains unchanged for each affected device. For a period of time, customers may receive product from both the old and the new assembly process. This process change notification is in addition to previously issued PCN's 10132, 10189, and 10190.

**Product/Process Change Notification #10695****QUALIFICATION PLAN:**

<b>TEST</b>	<b>CONDITIONS</b>
High Temp. Reverse Bias (HTRB)	Vr=640 Volts, Ta=85 deg C , 1000 hrs.
Temperature Cycling (TC)	15 Min dwell, -65 to +150 C, 1000 cycles
Pressure Temp. Humidity(PTH)	Ta=121 C, RH= 100%, PSIg=14.7, 96 hrs.
High Humidity High Temp.	Vr=100 Volts, Ta=85 C, RH= 85%, 1000 hrs.
Reverse Bias (H3TRB)	

**RELIABILITY DATA SUMMARY:**

Interim Reliability Tests, Results:

**2N6509, Largest Die/Highest Voltage, Triac**

<b>Test Desc.</b>	<b>Interval</b>	<b>Control</b>	<b>Test Group 1</b>	<b>Test Group 2</b>	<b>Test Group 3</b>
HTRB	168 hrs	0/80	0/80	0/80	0/79
Temp Cycle	100 cyc	0/80	0/80	0/80	0/80
PTH	96 hrs	0/80	0/80	0/80	0/80
H3TRB	1000 hrs	0^/50	0^/50	0^/50	0^/50
^H3TRB data taken from previous PCN 10132 since qualification wafer type is identical to devices tested in PCN 10132.					

**2N6399, Smallest Die/Highest Voltage, SCR**

<b>Test Desc</b>	<b>Interval</b>	<b>Control</b>	<b>Test Group 1</b>	<b>Test Group 1</b>	<b>Test Group 1</b>
HTRB	168 hrs	0/80	0/80	0/80	0/80
Temp Cycle	100 cyc	0/80	0/80	0/80	0/80
PTH	96 hrs	0/79	0/80	0/80	0/80
H3TRB	1000 hrs	0^/50	0^/50	0^/50	0^/50
^H3TRB data taken from previous PCN 10132 since qualification wafer type is identical to devices tested in PCN 10132.					

**Reliability Testing Conclusions:**

Interim Reliability Test data is consistent with passing ON Semiconductor / AEC-Q101 requirements. A copy of the full Reliability Report available upon request.

**ELECTRICAL CHARACTERISTIC SUMMARY**

Results of parametric testing indicates that there are no significant differences with device performance. A copy of the full Characterization Report available upon request.

**CHANGED PART IDENTIFICATION:**

Customers may receive these products manufactured with the new process beginning with date code 0123.



**Product/Process Change Notification #10695**

**AFFECTED DEVICE LIST:**

**PART**

2N6349  
2N6349A  
2N6394  
2N6395  
2N6397  
2N6397T  
2N6399  
2N6402  
2N6405  
2N6509  
2N6509T  
C122B1  
C122F1  
C122F1T  
MAC15-008  
MAC15-010  
MAC15A10  
MAC210A10  
MAC212A10  
MAC228A10  
MCR218-002  
MCR218-004  
MCR218-006  
MCR218-6T  
MCR310-010  
MCR68-002