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Control No. PCN-18013

January 28, 2018

PRODUCT/PROCESS CHANGE NOTIFICATION

TYPE OF CHANGE: Design Manufacturing Other

This notification is provided in accordance with Power Integrations policy of major change notification. If you have any questions or need further assistance, please contact your regional Power Integrations sales office.

DESCRIPTION OF CHANGE

The assembly process of the affected products in TO-220-3 is being modified to add copper wire bonding as an alternative process. Currently, the affected products are assembled with gold wire bonds only.

There is no change to the data sheet.

REASON FOR CHANGE

Improvement in the manufacturing capacity and flexibility. The copper wire bonding process has been widely adopted by the IC packaging industry for many years and has been in high-volume production of other PI products. This change will provide Power Integrations access to additional bonding equipment at its contract manufacturing assembly facilities.

PRODUCTS AFFECTED

Product Family	Ordering Part Number
TOPSwitch-II	TOP221YN, TOP222YN, TOP222YNAU, TOP222YN-BB, TOP223YN, TOP223YN-BB, TOP223YN-BF, TOP224YN, TOP225YN, TOP226YN, TOP226YN-BF, TOP227YN

QUALIFICATION STATUS

Refer to Appendix 1 for the qualification data.

EFFECT ON CUSTOMER

No adverse impact is expected in manufacturers' applications. The product will be guaranteed to meet the datasheet limits.

EFFECTIVE DATE

April 30, 2018

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The information in this report contains confidential and proprietary information of Power Integrations and its manufacturing partners. By receiving this report, the customer agrees to use this information for the sole purpose of addressing the issues reviewed in this report and to keep the contents confidential. If it becomes necessary for the customer to disclose this information to a third party, a non-disclosure agreement, which provides reasonable and customary protection for the disclosed information, must be executed.

SAMPLE AVAILABILITY

Samples will be available 8 weeks from the date of request. Please send requests for samples within two weeks after receipt of this notification to the local Power Integrations sales office. For manufacturers that request samples, an accommodation will be made in order to allow time of customer's qualification in a case-specific manner.

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Appendix 1
Reliability Engineering
Qualification Report

Qualification Project: E173704

Project Title: TFME 3L TO-220 Cu Wire Qualification
Summary:
<p>Reliability testing was conducted to qualify Cu wire bonding for the 3L TO-220 package assembled at TFME. Three Cu wire qualification lots were subjected to THBT, HTSL and TMCL with passing results obtained in all cases. Bond pull, ball shear and cratering tests were performed by TFME with passing results.</p> <p>Yield and temperature characterization were completed on representative 3L TO-220 package products with acceptable results obtained.</p> <p>Based on these qualification results, the 3L TO-220 package is approved for assembly at TFME using Cu bond wire.</p>
Qualification Vehicles: TOP227YN and TOP226YN

Reliability Test Descriptions and Conditions

Test Name	Conditions	Reference Specification
THBT (Temperature Humidity Bias Test)	85°C, 85% RH, Vd=30V, Vc=5.8V	EIA/JESD22-A101C
TMCL (Temperature Cycle, Air to Air)	-65°C to +150°C	EIA/JESD22-A104D
HTSL (High Temperature Storage Life)	Ta=175°C, unbiased	EIA/JESD22-A103D

THBT (Temperature Humidity Bias)

Product	Description	Assy Lot	Fab Lot	Test Duration	Failures/Sample Size
TOP227YN	Cu Wire Qual Lot 1	6A666G	DS427B CAEW-0053	1000 hours	0/47
TOP227YN	Cu Wire Qual Lot 2	5K940H	DS427B CAEW-0047	1000 hours	0/47
TOP226YN	Cu Wire Qual Lot 3	3Z287D	DS426B CAEX-0007	1000 hours	0/47

TMCL (Temperature Cycling)

Product	Description	Assy Lot	Fab Lot	Test Duration	Failures/Sample Size
TOP227YN	Cu Wire Qual Lot 1	6A666G	DS427B CAEW-0053	1000 cycles	0/47
TOP227YN	Cu Wire Qual Lot 2	5K940H	DS427B CAEW-0047	1000 cycles	0/47
TOP226YN	Cu Wire Qual Lot 3	3Z287D	DS426B CAEX-0007	1000 cycles	0/47

HTSL (High Temperature Storage Life)

Product	Description	Assy Lot	Fab Lot	Test Duration	Failures/Sample Size
TOP227YN	Cu Wire Qual Lot 1	6A666G	DS427B CAEW-0053	1000 hours	0/47
TOP227YN	Cu Wire Qual Lot 2	5K940H	DS427B CAEW-0047	1000 hours	0/47
TOP226YN	Cu Wire Qual Lot 3	3Z287D	DS426B CAEX-0007	1000 hours	0/47

Conclusion: Based on these qualification results, the 3L TO-220 package is approved for assembly at TFME using Cu bond wire. This qualification covers all 3L TO-220 package products assembled at TFME.

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CUSTOMER ACKNOWLEDGEMENT

Power Integrations requests you acknowledge the receipt of the above-mentioned PCN. If no acknowledgment is received within 30 days of this notification, Power Integrations will assume the change is acceptable. Lack of any additional response within 90 days of this notification further constitutes acceptance of the change.

Power Integrations reserves the right to ship either version manufactured after the effective date until the inventory of the earlier version has been depleted.

If you have any questions or need further assistance, please contact your regional Power Integrations sales office. Otherwise, please check the box below, acknowledging the receipt of the PCN.

The indicated Product/Process Change Notification was received by the undersigned authority.

Name/Title: _____

Signature: _____ Date: _____

Email Address/Phone#: _____

Company/Location: _____

CUSTOMER COMMENTS

Please email this signed form to pcn@power.com specifying the PCN# in the subject.

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