



5245 Hellyer Avenue
 San Jose, CA 95138
 U.S.A.
 (408) 414-9200

Control No. PCN-15441

January 26, 2016

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

An improved passivation at XFab, Lubbock, Texas, a wafer foundry for Power Integrations products. The LINKSwitch™-TN family will also be added to XFab Lubbock.

REASON FOR CHANGE

As part of a continuous improvement, Power Integrations has been working to further increase the margin of HALT (highly accelerated life testing) beyond the minimum requirement of 1,000 hr. This improvement was achieved with a slight modification of the passivation process. HALT testing is done under 85°C/85% R.H., 560V dynamic condition.

PRODUCTS AFFECTED

LINKSwitch™-II, LINKSwitch™-HP, LINKSwitch™-TN, LINKSwitch™-XT, TINYSwitch™-II, TOPSwitch™-GX and TOPSwitch™-HX products affected by the change are listed in the table below.

Product Family	Part Numbers
LINKSwitch™-II	LNK632DG, LNK632DGAU, LNK632DG0104, SC1139D0, SC1139DG, SC1139DGAU
LINKSwitch™-HP	LNK6663E, LNK6664E, LNK6665E, LNK6666E, LNK6667E, LNK6668E, LNK6669E, LNK6763E, LNK6764E, LNK6765E, LNK6766E, LNK6767E, LNK6768E, LNK6769E, LNK6773E, LNK6774E, LNK6775E, LNK6776E, LNK6777E, LNK6778E, LNK6779E, SC1166E, SC1189E
	LNK6663K, LNK6664K, LNK6664K1, LNK6665K, LNK6665K1, LNK6666K, LNK6667K, LNK6668K, LNK6669K, LNK6763K, LNK6764K, LNK6765K, LNK6766K, LNK6767K, LNK6768K, LNK6769K, LNK6773K, LNK6774K, LNK6775K, LNK6776K, LNK6777K, LNK6778K, LNK6779K
	LNK6663V, LNK6664V, LNK6665V, LNK6666V, LNK6667V, LNK6668V, LNK6669V, LNK6763V, LNK6764V, LNK6765V, LNK6766V, LNK6767V, LNK6768V, LNK6769V, LNK6773V, LNK6774V, LNK6775V, LNK6776V, LNK6777V, LNK6778V, LNK6779V
LINKSwitch™-TN	LNK302DG, LNK302DGAU, LNK302DG0004, LNK302DG0105, LNK302DG0166, LNK302DN, LNK302DNAU, LNK302DN0005, LNK304DG, LNK304DGAU, LNK304DG0004, LNK304DG0105, LNK304DG0166, LNK304DN, LNK304DNAU, LNK304DN0054, LNK304DN0152, LNK304DN0166, LNK305DG, LNK305DGAU, LNK305DG0004, LNK305DG0105, LNK305DN, LNK305DNAU,

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	LNK305DN0004, LNK305DN0166, LNK306DG, LNK306DGAU, LNK306DG0105, LNK306DN, LNK306DNAU, LNK306DN0152, SC1117DG, SC1145DG
	LNK302GN, LNK302GNAU, LNK302GN0004, LNK302GN0166, LNK304GN, LNK304GNAU, LNK304GN0004, LNK304GN0087, LNK304GN0166, LNK305GN, LNK305GNAU, LNK305GN0004, LNK305GN0105, LNK305GN0166, LNK306GN, LNK306GNAU, LNK306GN0004, LNK306GN0152
	LNK302PG, LNK302PN, LNK302PNAU, LNK302PN0004, LNK302PN0105PN, LNK302PN0166, LNK304PG, LNK304PN, LNK304PNAU, LNK304PN0004, LNK304PN0105, LNK304PN0152, LNK304PN0166, LNK305PN, LNK305PNAU, LNK305PN0004, LNK305PN0105, LNK306PN, LNK306PNAU, LNK306PN0166
LINKSwitch™-XT	LNK362DG, LNK362DGAU, LNK362DN, LNK362DNAU, LNK363DG, LNK363DG0166, LNK363DN, LNK363DNAU, LNK364DG, LNK364DN, LNK364DNAU, LNK364DN0105, SC1108DG
	LNK362GN, LNK363GN, LNK363GN0152, LNK364GN, LNK364GNAU, LNK364GN1015
	LNK362PG, LNK362PN, LNK362PNAU, LNK363PG, LNK363PN, LNK363PNAU, LNK363PN0105, LNK364PG, LNK364PN, LNK364PNAU, LNK364PN0146
TINYSwitch™-II	TNY264GN, TNY264GNAU, TNY266GN, TNY266GNAU, TNY267GN, TNY267GNAU, TNY268GN, TNY268GNAU
	TNY264PG, TNY264PN, TNY264PNAU, TNY266PG, TNY266PN, TNY266PN0190, TNY266PNAU, TNY267PG, TNY267PN, TNY267PNAU, TNY268PG, TNY268PN, TNY268PNAU
TOPSwitch™-GX	TOP243FN, TOP244FN, TOP245FN, TOP246FN, TOP247FN, TOP248FN
	TOP243GN, TOP244GN, TOP245GN, TOP246GN
	TOP243PN, TOP243PNAU, TOP244PN, TOP244PNAU, TOP245PN, TOP245PNAU, TOP246PN, TOP246PNAU
	TOP243R, TOP244R, TOP245R, TOP246R, TOP247R, TOP248R
	TOP243YN, TOP243YNAU, TOP243YN0057, TOP244YN, TOP244YNAU, TOP245YN, TOP245YNAU, TOP246YN, TOP246YNAU, TOP246YN0057, TOP246YN0190, TOP247YN, TOP247YNAU, TOP248YN, TOP248YNAU
TOPSwitch™-HX	TOP258EG, TOP258EN, TOP258EN0105, TOP258ENAU
	TOP258GN
	TOP258PG, TOP258PN, TOP258PN0004, TOP258PNAU
	TOP258YN, TOP258YN0166, TOP258YNAU

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 26, 2016. This date is subject to change. Products assembled with the wafers from the current fab will continue to be shipped after implementation of the above change.

SAMPLE AVAILABILITY

Samples will be available 10 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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January 26, 2016

Project Title: Qualification of Improved Passivation Process for XFab, Lubbock, Texas Wafer Fab
Summary: Reliability testing was conducted to qualify an improved passivation process for Power Integration products fabricated in the XFab, Lubbock, Texas wafer fabrication facility. A minor passivation change was made to improve HALT performance. All required reliability stress tests were completed on three qualification lots with acceptable results. Yield and temperature characterization were completed with acceptable results for all affected products. Based on these qualification results, the improved passivation process is now approved for production.
Qualification Vehicles: TOP258PG and LNK6669E

Reliability Test Descriptions and Conditions

Test Name	Conditions	Reference Specification
DOPL (Dynamic Operating Life Test)	T _j =125°C, V _{d(peak)} = 560V for TOP258PG, V _{d(peak)} = 580V for LNK6669E	EIA/JESD22-A108D
HTRB (High Temp Reverse Bias Test)	T _a =150°C, V _d =560V for TOP258PG, V _d =580V for LNK6669E, V _c /V _{bp} =5.8V	EIA/JESD22-A108D
THBT (Temperature Humidity Bias Test)	85°C, 85% RH, V _d =30V, V _c =5.8V	EIA/JESD22-A101C
TMCL (Temperature Cycle, Air to Air)	-65°C to +150°C (PG package) -40°C to +125°C (E package)	EIA/JESD22-A104D
HALT (Humidity Accelerated Life Test)	T _a =85°C, 85% RH, T _j =115°C, V _{d(peak)} = 560V for TOP258PG or V _{d(peak)} = 560V for LNK6669E, in switching power supply	Internal Standard
HTSL (High Temperature Storage Life)	T _a =175°C, unbiased	EIA/JESD22-A103D

Reliability Test Results

DOPL (Dynamic Operating Life)

Product	Lot No.	Test Duration	No. Failures/Sample Size
TOP258PG	3G280F	1000 hours	0/47
TOP258PG	4D542C	1000 hours	0/47
LNK6669E	4D450C	1000 hours	0/47

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HTRB (High Temperature Reverse Bias)

Product	Lot #	Test Duration	No. Failures/Sample Size
TOP258PG	3G280F	1000 hours	0/47
TOP258PG	4D542C	1000 hours	0/47
LNK6669E	4D450C	1000 hours	0/47

THBT (Temperature Humidity Bias)

Product	Lot #	Test Duration	No. Failures/Sample Size
TOP258PG	3G280F	1000 hours	0/47
TOP258PG	4D542C	1000 hours	0/47
LNK6669E	4D450C	1000 hours	0/47

TMCL (Temperature Cycling)

Product	Lot #	Test Duration	No. Failures/Sample Size
TOP258PG	3G280F	500 cycles	0/47
TOP258PG	4D542C	500 cycles	0/47
LNK6669E	4D450C	850 cycles	0/47

HALT (Humidity Accelerated Life Test)

Product	Lot #	Test Duration	No. Failures/Sample Size
TOP258PG	3G280F	1000 hours	0/20
TOP258PG	4D542C	1000 hours	0/20
LNK6669E	4D450C	1000 hours	0/20

HTSL (High Temperature Storage Life)

Product	Lot #	Test Duration	No. Failures/Sample Size
TOP258PG	3G280F	1000 hours	0/47
TOP258PG	4D542C	1000 hours	0/47
LNK6669E	4D450C	1000 hours	0/47

Conclusion: Based on these qualification results, the improved passivation process is now approved for wafer fabrication of all Power Integrations products at XFab, Lubbock, Texas.

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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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