



Control No. PCN-16511

January 16, 2017

PRODUCT/PROCESS CHANGE NOTIFICATION

TYPE OF CHANGE: Design Manufacturing Other

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

DESCRIPTION OF CHANGE

Huatian Technology Company Limited (TSHT), located in Gansu, China; is added as an alternative assembly and test site for the SO-8C package and the LYTSwitch-1 and LYTSwitch-7 SO-8 product family. TSHT is one of the qualified assembly and test sites of Power Integrations products.

REASON FOR CHANGE

Addition of assembly and test site for increased manufacturing capacity and flexibility.

PRODUCTS AFFECTED

Product Family	Part Numbers	Package
*LinkSwitch-II	DAPO21B1, LNK603DG, LNK603DG0004, LNK603DGAU, LNK604DG, LNK605DG, LNK606DG, LNK606DG0004, LNK606DG0166, LNK606DGAU, LNK613DG, LNK614DG, LNK614DGAU, LNK615DG, LNK616DG, LNK616DGAU, LNK623DG, LNK623DG0166, LNK623DGAU, LNK624DG, LNK624DGAU, LNK625DG, LNK625DG0055, LNK625DG0105, LNK625DG0176, LNK625DGAU, LNK626DG, LNK626DG0139, LNK626DG0004, LNK626DGAU, LNK632DG, LNK632DG0004, LNK632DG0054, LNK632DG0104, LNK632DG0166, LNK632DGAU, SC1097D1, SC1097D1AU, SC1097DG, SC1097DGAU, SC1098DG, SC1099DG, SC1103DG, SC1103DGAU, SC1104D1, SC1104DG, SC1104DGAU, SC1106DG, SC1106DG0004, SC1106DGAU, SC1107D1, SC1125DG, SC1125DGAU, SC1126DG, SC1126DGAU, SC1132DG, SC1135DG, SC1137DG, SC1139D0, SC1139DG, SC1139DG0105, SC1139DG0166, SC1139DGAU	SO-8C
LinkSwitch-3	LNK625D1, LNK6404D, LNK6405D, LNK6406D, LNK6407D, LNK6407D0004, LNK6415D, LNK6416D, LNK6417D, LNK6424D, LNK6425D, LNK6426D, LNK6427D, LNK6436D, LNK6446D, SC1142D0, SC1142D00073, SC1142D1, SC1142D10077, SC1142D2, SC1142D3, SC1144D0, SC1144D1, SC1144D2, SC1144D3, SC1161D0, SC1161D1, SC1161D2, SC1161DZ, SC1170D4	SO-8C
LinkSwitch-LP	LNK562DG, LNK562DGAU, LNK562DN, LNK562DNAU, LNK563DG, LNK563DN, LNK564DG, LNK564DGAU, LNK564DG0190, LNK564DN, LNK564DNAU, LNK564DN0167, SC1124DG, SC1146DG	SO-8C
LinkSwitch-PL	LNK454DGDG, LNK456DG, LNK457DG	SO-8C

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PRODUCTS AFFECTED (continued)

Product Family	Part Numbers	Package
LinkSwitch-TN	LNK302DG, LNK302DGAU, LNK302DG0004, LNK302DG0105, LNK302DG0166, LNK302DN, LNK302DNAU, LNK302DN0005, LNK302DN0190, LNK304DG, LNK304DGAU, LNK304DG0004, LNK304DG0105, LNK304DG0166, LNK304DN, LNK304DNAU, LNK304DN0054, LNK304DN0152, LNK304DN0166, LNK305DG, LNK305DGAU, LNK305DG0004, LNK305DG0105, LNK305DN, LNK305DNAU, LNK305DN0004, LNK305DN0166, LNK306DG, LNK306DGAU, LNK306DG0105, LNK306DN, LNK306DNAU, LNK306DN0152, SC1117DG, SC1145DG	SO-8C
LinkSwitch-TN2	LNK3202D, LNK3204D, LNK3205D, LNK3206D	SO-8C
LinkSwitch-XT	LNK362DG, LNK362DGAU, LNK362DN, LNK362DNAU, LNK362DN0004, LNK363DG, LNK363DGAU, LNK363DG0166, LNK363DN, LNK363DNAU, LNK364DG, LNK364DN, LNK364DNAU, LNK364DN0152, SC1108DG	SO-8C
LinkSwitch-XT2	LNK3604D	SO-8C
LinkSwitch-Zero	LNK574DG, LNK576DG, LNK584DG, LNK585DG, LNK586DG, LNK586DGAU, LNK586DG0166, SPS1013P	SO-8C
LYTSwitch-0	LYT0002D, LYT0002D0105, LYT0004D, LYT0004D0105, LYT0005D, LYT0005D0105, LYT0006D, LYT0006D0105, SC1195DG, SC1196DG	SO-8C
LYTSwitch-1	LYT1402D, LYT1403D, LYT1404D, LYT1602D, LYT1603D, LYT1604D, LYT1703D, LYT1703D0204, LYT1704D, LYT1704D0204	SO-8
LYTSwitch-7	LYT7503D, LYT7504D	SO-8
TinySwitch-LT	TNY174DG, TNY175DG, TNY176DG, TNY177DG, TNY178DG	SO-8C
TinySwitch-4	DAP021AG, SC1130DG, TNY278DG, TNY284DG, TNY285DG0152, TNY286DG, TNY286DG0152, TNY287DG, TNY288DG, TNY288DG0152	SO-8C

*Not recommended for new designs.

QUALIFICATION STATUS

Refer to Appendix 1 for the qualification data.

EFFECT ON CUSTOMER

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

EFFECTIVE DATE

April 17, 2017. This date is subject to change. Products assembled at the current assembly site will continue to be shipped after implementation of the above change.

SAMPLE AVAILABILITY

Samples will be available 8 weeks from the date of request.

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Project Title: TSHT SO-8 and SO-8C Packages Assembly Site Qualification

Summary:

Reliability testing was conducted to qualify Huatian Technology Company Limited (TSHT) as an alternative assembly site for the SO-8 and SO-8C packages used for wide variety of Power Integrations' products.

A full suite of reliability stress tests were conducted on multiple SO-8 and SO-8C TSHT-assembled qualification lots from a total of six product families selected as representative of the range of affected Power Integrations' products. All required reliability stress tests were completed with passing results obtained for all qualification lots.

Yield and temperature characterization was completed for each product family with acceptable results obtained.

Based on these qualification results, TSHT is now qualified and approved for assembly of all products using the SO-8 and SO-8C packages.

Qualification Vehicles: CHY103D, CAP012DG, SEN013DG, LNK306DG, LYT1604D, TNY288DG

Reliability Test Descriptions and Conditions

Test Name	Conditions	Reference Specification
DOPL (Dynamic Operating Life Test)	Tj=125°C, Vd(peak)=580V LYT1604D/TNY288DG, 560V for LNK306DG, switching power supply configuration; Vc =6.3V for CHY103D/CAP012DG/ SEN013DG	EIA/JESD22-A108D
HALT (Highly Accelerated Life Test)	DOPL test performed at Ta=85C (Tj=115°C), 85% RH	Internal Standard
HTRB (High Temp Reverse Bias Test)	All Ta=150°C. Vd=580V for LYT1604D/TNY288DG, 560V for LNK306DG, controller biased for power-MOSFET off-state; Vd=520V and Vs=6V for SEN013DG; Vd=560V and Vs=6.2V for CAP012DG	EIA/JESD22-A108D
THBT (Temperature Humidity Bias Test)	85°C, 85% RH, Vd=30V, controller biased for power-MOSFET off-state	EIA/JESD22-A101C
TMCL (Temperature Cycle, Air to Air)	-65°C to +150°C, air to air	EIA/JESD22-A104D
HTSL (High Temperature Storage Life)	Ta=175°C, unbiased	EIA/JESD22-A103D
MSL1 Preconditioning	24-hr 150°C Bake + 168-hr 85°C, 85% RH Moisture Soak + 3 Passes 260C Solder Reflow	EIA/JESD22-A113D

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DOPL (Dynamic Operating Life)

Product	Description	Assy Lot	Fab Lot	Test Duration	Failures/Sample Size
LNK306DG	SO-8C Qual Lot 1	5B789F	DS73C-1448	MSL1 + 1000 hours	0/47
LNK306DG	SO-8C Qual Lot 2	5B789G	DS73C-1452	MSL1 + 1000 hours	0/47
LYT1604D	SO-8C Qual Lot 3	5C198E	DX034B3-0126 1	MSL1 + 1000 hours	0/47
LYT1604D	SO-8C Qual Lot 4	5C198F	DX034B3-0126 1	MSL1 + 1000 hours	0/47
TNY288DG	SO-8C Qual Lot 5	5C085H	DM458D CAYT-0234	MSL1 + 1000 hours	0/47
TNY288DG	SO-8C Qual Lot 6	5C085I	DM458D CAYT-0234	MSL1 + 1000 hours	0/47
CHY103D	SO-8 Qual Lot 1	4V947A	SFMST1-0046B	MSL1 + 1000 hours	0/47
CHY103D	SO-8 Qual Lot 2	4V947B	SFMST1-0046B	MSL1 + 1000 hours	0/47
CHY103D	SO-8 Qual Lot 3	4V999A	SFMST1-0052B	MSL1 + 1000 hours	0/47
CHY103D	SO-8 Qual Lot 4	4V999B	SFMST1-0052B	MSL1 + 1000 hours	0/47

HALT (Highly Accelerated Life Test)

Product	Description	Assy Lot	Fab Lot	Test Duration	Failures/Sample Size
LNK306DG	SO-8C Qual Lot 1	5B789F	DS73C-1448	MSL1 + 1000 hours	0/20
LNK306DG	SO-8C Qual Lot 2	5B789G	DS73C-1452	MSL1 + 1000 hours	0/20
LYT1604D	SO-8C Qual Lot 3	5C198E	DX034B3-0126 1	MSL1 + 1000 hours	0/20
LYT1604D	SO-8C Qual Lot 4	5C198F	DX034B3-0126 1	MSL1 + 1000 hours	0/20

HTRB (High Temperature Reverse Bias)

Product	Description	Assy Lot	Fab Lot	Test Duration	Failures/Sample Size
LNK306DG	SO-8C Qual Lot 1	5B789F	DS73C-1448	MSL1 + 1000 hours	0/47
LNK306DG	SO-8C Qual Lot 2	5B789G	DS73C-1452	MSL1 + 1000 hours	0/47
LYT1604D	SO-8C Qual Lot 3	5C198E	DX034B3-0126 1	MSL1 + 1000 hours	0/47
LYT1604D	SO-8C Qual Lot 4	5C198F	DX034B3-0126 1	MSL1 + 1000 hours	0/47
TNY288DG	SO-8C Qual Lot 5	5C085H	DM458D CAYT-0234	MSL1 + 1000 hours	0/47
TNY288DG	SO-8C Qual Lot 6	5C085I	DM458D CAYT-0234	MSL1 + 1000 hours	0/47
CAP012DG	SO-8 Qual Lot 5	4W538A	CTL9-0206	MSL1 + 1000 hours	0/47
CAP012DG	SO-8 Qual Lot 6	4Y669F	CTL9-B210	MSL1 + 1000 hours	0/47
CAP012DG	SO-8 Qual Lot 7	4Y669G	CTL9-B210	MSL1 + 1000 hours	0/47
SEN013DG	SO-8 Qual Lot 8	4U408X	CACK-0022	MSL1 + 1000 hours	0/47
SEN013DG	SO-8 Qual Lot 9	4U408Y	CACK-0022	MSL1 + 1000 hours	0/47
SEN013DG	SO-8 Qual Lot 10	4U885X	CACK-0023	MSL1 + 1000 hours	0/47
SEN013DG	SO-8 Qual Lot 11	4U885Y	CACK-0023	MSL1 + 1000 hours	0/47

THBT (Temperature Humidity Bias)

Product	Description	Assy Lot	Fab Lot	Test Duration	Failures/Sample Size
LNK306DG	SO-8C Qual Lot 1	5B789F	DS73C-1448	MSL1 + 1000 hours	0/47
LNK306DG	SO-8C Qual Lot 2	5B789G	DS73C-1452	MSL1 + 1000 hours	0/47
LYT1604D	SO-8C Qual Lot 3	5C198E	DX034B3-0126 1	MSL1 + 1000 hours	0/47
LYT1604D	SO-8C Qual Lot 4	5C198F	DX034B3-0126 1	MSL1 + 1000 hours	0/47
TNY288DG	SO-8C Qual Lot 5	5C085H	DM458D CAYT-0234	MSL1 + 1000 hours	0/47
TNY288DG	SO-8C Qual Lot 6	5C085I	DM458D CAYT-0234	MSL1 + 1000 hours	0/47
CAP012DG	SO-8 Qual Lot 6	4Y669F	CTL9-B210	MSL1 + 1000 hours	0/47
CAP012DG	SO-8 Qual Lot 7	4Y669G	CTL9-B210	MSL1 + 1000 hours	0/47
SEN013DG	SO-8 Qual Lot 10	4U885X	CACK-0023	MSL1 + 1000 hours	0/47
SEN013DG	SO-8 Qual Lot 11	4U885Y	CACK-0023	MSL1 + 1000 hours	0/47

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TMCL (Temperature Cycling)

Product	Description	Assy Lot	Fab Lot	Test Duration	Failures/Sample Size
LNK306DG	SO-8C Qual Lot 1	5B789F	DS73C-1448	MSL1 + 1000 cycles	0/47
LNK306DG	SO-8C Qual Lot 2	5B789G	DS73C-1452	MSL1 + 1000 cycles	0/47
LYT1604D	SO-8C Qual Lot 3	5C198E	DX034B3-0126 1	MSL1 + 1000 cycles	0/47
LYT1604D	SO-8C Qual Lot 4	5C198F	DX034B3-0126 1	MSL1 + 1000 cycles	0/47
TNY288DG	SO-8C Qual Lot 5	5C085H	DM458D CAYT-0234	MSL1 + 1000 cycles	0/47
TNY288DG	SO-8C Qual Lot 6	5C085I	DM458D CAYT-0234	MSL1 + 1000 cycles	0/47
LYT1604D	SO-8C Qual Lot 7	4Y901B	DX034B1-0106	MSL1 + 500 cycles	0/47
TNY288DG	SO-8C Qual Lot 8	5C085F	CAYT-0234	MSL1 + 1000 cycles	0/47
LNK306DG	SO-8C Qual Lot 9	5B362E	DS73C-1452	MSL1 + 1000 cycles	0/47
LNK306DG	SO-8C Qual Lot 10	5B362F	DS73C-1452	MSL1 + 1000 cycles	0/47
CHY103D	SO-8 Qual Lot 1	4V947A	SFMST1-0046B	MSL1 + 1000 cycles	0/47
CHY103D	SO-8 Qual Lot 2	4V947B	SFMST1-0046B	MSL1 + 1000 cycles	0/47
CHY103D	SO-8 Qual Lot 3	4V999A	SFMST1-0052B	MSL1 + 1000 cycles	0/47
CHY103D	SO-8 Qual Lot 4	4V999B	SFMST1-0052B	MSL1 + 1000 cycles	0/47
CAP012DG	SO-8 Qual Lot 5	4W538A	CTL9-0206	MSL1 + 1000 cycles	0/47
CAP012DG	SO-8 Qual Lot 6	4Y669F	CTL9-B210	MSL1 + 1000 cycles	0/47
CAP012DG	SO-8 Qual Lot 7	4Y669G	CTL9-B210	MSL1 + 1000 cycles	0/47
SEN013DG	SO-8 Qual Lot 8	4U408X	CACK-0022	MSL1 + 1000 cycles	0/47
SEN013DG	SO-8 Qual Lot 9	4U408Y	CACK-0022	MSL1 + 1000 cycles	0/47
SEN013DG	SO-8 Qual Lot 10	4U885X	CACK-0023	MSL1 + 1000 cycles	0/47
SEN013DG	SO-8 Qual Lot 11	4U885Y	CACK-0023	MSL1 + 1000 cycles	0/47

HTSL (High Temperature Storage Life)

Product	Description	Assy Lot	Fab Lot	Test Duration	Failures/Sample Size
LNK306DG	SO-8C Qual Lot 1	5B789F	DS73C-1448	MSL1 + 1000 hours	0/47
LNK306DG	SO-8C Qual Lot 2	5B789G	DS73C-1452	MSL1 + 1000 hours	0/47
LYT1604D	SO-8C Qual Lot 3	5C198E	DX034B3-0126 1	MSL1 + 1000 hours	0/46 (Note 1)
LYT1604D	SO-8C Qual Lot 4	5C198F	DX034B3-0126 1	MSL1 + 1000 hours	0/47
TNY288DG	SO-8C Qual Lot 5	5C085H	DM458D CAYT-0234	MSL1 + 1000 hours	0/47
TNY288DG	SO-8C Qual Lot 6	5C085I	DM458D CAYT-0234	MSL1 + 1000 hours	0/47
CHY103D	SO-8 Qual Lot 3	4V999A	SFMST1-0052B	MSL1 + 1000 hours	0/47
CHY103D	SO-8 Qual Lot 4	4V999B	SFMST1-0052B	MSL1 + 1000 hours	0/47
CAP012DG	SO-8 Qual Lot 6	4Y669F	CTL9-B210	MSL1 + 1000 hours	0/47
CAP012DG	SO-8 Qual Lot 7	4Y669G	CTL9-B210	MSL1 + 1000 hours	0/47
SEN013DG	SO-8 Qual Lot 10	4U885X	CACK-0023	MSL1 + 1000 hours	0/47
SEN013DG	SO-8 Qual Lot 11	4U885Y	CACK-0023	MSL1 + 1000 hours	0/47

Note 1: S/N 39 from lot 5C198E suffered electrical overstress (EOS) damage after 168 hours of HTSL during ATE testing. No assembly-related defects were observed and it was concluded that this was an ATE-induced EOS failure and invalid with respect to the assembly site qualification. The sample size was reduced accordingly.

Conclusion: Based on these qualification results, TSHT is now qualified and approved for assembly of all products using the SO-8 and SO-8C packages.

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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.

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CUSTOMER COMMENTS

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

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