

Control No. PCN-17201

October 19, 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**

Unisem (M) Berhad, Ipoh, Malaysia is added as an alternative assembly and test site for the eSOP-12B package with same Bill of Material. Unisem (M) Berhad, Ipoh, Malaysia is a 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
LinkSwitch™-HP	LNK6663K, LNK6664K, LNK6664K1, LNK6665K, LNK6665K1, LNK6666K, LNK6667K, LNK6668K, LNK6669K, LNK6763K, LNK6764K, LNK6765K, LNK6766K, LNK6767K, LNK6767K0190, LNK6768K, LNK6769K, LNK6769K0190, LNK6773K, LNK6774K, LNK6775K, LNK6776K, LNK6777K, LNK6778K, LNK6779K, LNK6779K0190
LinkSwitch™-PL	LNK457KG, LNK458KG, LNK460KG
LinkSwitch™-3	LNK6407K, LNK6408K, LNK6417K, LNK6418K, LNK6427K, LNK6428K, LNK6448K, SC1161K0, SC1161K1, SC1161K2, SC1161KZ, SC1162K0, SC1162K1, SC1162K2, SC1162KZ
LYTSwitch™-2	LYT2004K, LYT2005K
TinySwitch™-IV	TNY284KG, TNY285KG, TNY285KG0152, TNY286KG, TNY287KG, TNY287KG0152, TNY288KG, TNY288KG0152, TNY289KG, TNY290KG, TNY290KG0105
TopSwitch™-JX	TOP264KG, TOP265KG, TOP266KG, TOP267KG, TOP268KG, TOP269KG, TOP270KG, TOP271KG

**QUALIFICATION STATUS**

Refer to Appendix 1 for the qualification data.

**EFFECT ON CUSTOMER**

There are no form fit and function differences. 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.

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**EFFECTIVE DATE**

January 19, 2018. 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 in 6 weeks from the date of request. Please send requests for samples to the local Power Integrations sales office.

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Appendix 1  
Reliability Engineering  
Qualification Report

Qualification Project: E160210

**Project Title: Unisem eSOP-12B Package Qualification****Summary:**

Reliability testing was conducted to qualify the eSOP-12B package at Unisem (M) Berhad, Ipoh, Malaysia. The eSOP-12B package is the surface mount version of the eDIP-12B through-hole package and differs only in the lead-form configuration. The eSOP-12B was qualified largely by extension of the eDIP-12B package and that data is included below. In addition, MSL3 + TMCL testing was conducted on one TOP271KG eSOP-12B lot with passing results.

Yield and temperature characterization were completed on representative eSOP-12B products with acceptable results obtained.

Based on these qualification results, the eSOP-12B package is now qualified and approved for assembly at Unisem. This qualification covers all PI products that use the eSOP-12B package.

Qualification Vehicles: TOP270VG, TOP269VG, TOP271KG

**Reliability Test Descriptions and Conditions**

Test Name	Conditions	Reference Specification
DOPL (Dynamic Operating Life Test)	T <sub>j</sub> =125°C, V <sub>d(peak)</sub> = 580V	EIA/JESD22-A108D
HTRB (High Temp Reverse Bias Test)	T <sub>a</sub> =150°C, V <sub>d</sub> =580V, V <sub>c</sub> =5.8V	EIA/JESD22-A108D
THBT (Temperature Humidity Bias Test)	85°C, 85% RH, V <sub>d</sub> =30V, V <sub>c</sub> =5.8V	EIA/JESD22-A101C
TMCL (Temperature Cycle, Air to Air)	-40°C to +125°C	EIA/JESD22-A104D
HTSL (High Temperature Storage Life)	T <sub>a</sub> =175°C, unbiased	EIA/JESD22-A103D
MSL3 (preconditioning)	24 hour 150°C bake + 192 hour 30°C, 60% RH moisture soak + 3 passes 260°C solder reflow	EIA/JESD22-A113F

**DOPL (Dynamic Operating Life)**

Product	Description	Assy Lot	Fab Lot	Test Duration	Failures/Sample Size
TOP270VG	Unisem Qual Lot 1	4N940A	DS270D1 CTC4-0097	1000 hours	0/47
TOP270VG	Unisem Qual Lot 2	4Q271A	DS270D1 CTC4-0100	1000 hours	0/47
TOP269VG	Unisem Qual Lot 3	4H894D	DS269D1 CTF1-0098	1000 hours	0/47

**HTRB (High Temperature Reverse Bias)**

Product	Description	Assy Lot	Fab Lot	Test Duration	Failures/Sample Size
TOP270VG	Unisem Qual Lot 1	4N940A	DS270D1 CTC4-0097	1000 hours	0/47
TOP270VG	Unisem Qual Lot 2	4Q271A	DS270D1 CTC4-0100	1000 hours	0/47
TOP269VG	Unisem Qual Lot 3	4H894D	DS269D1 CTF1-0098	1000 hours	0/46 (Note 1)

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**THBT (Temperature Humidity Bias)**

Product	Description	Assy Lot	Fab Lot	Test Duration	Failures/Sample Size
TOP270VG	Unisem Qual Lot 1	4N940A	DS270D1 CTC4-0097	1000 hours	0/47
TOP270VG	Unisem Qual Lot 2	4Q271A	DS270D1 CTC4-0100	1000 hours	0/47
TOP269VG	Unisem Qual Lot 3	4H894D	DS269D1 CTF1-0098	1000 hours	0/47

**TMCL (Temperature Cycling)**

Product	Description	Assy Lot	Fab Lot	Test Duration	Failures/Sample Size
TOP271KG	Unisem eSOP-12B	6B550G	DS271D1 CTDO-0878	MSL3 + 850 cycles	0/47
TOP270VG	Unisem Qual Lot 1	4N940A	DS270D1 CTC4-0097	850 cycles	0/47
TOP270VG	Unisem Qual Lot 2	4Q271A	DS270D1 CTC4-0100	850 cycles	0/47
TOP269VG	Unisem Qual Lot 3	4H894D	DS269D1 CTF1-0098	850 cycles	0/47

**HTSL (High Temperature Storage Life)**

Product	Description	Assy Lot	Fab Lot	Test Duration	Failures/Sample Size
TOP270VG	Unisem Qual Lot 1	4N940A	DS270D1 CTC4-0097	1000 hours	0/47
TOP270VG	Unisem Qual Lot 2	4Q271A	DS270D1 CTC4-0100	1000 hours	0/47
TOP269VG	Unisem Qual Lot 3	4H894D	DS269D1 CTF1-0098	1000 hours	0/47

Note 1: S/N 26 from qual lot 4H894D failed after 500 hours of HTRB due to an electrical transient event which caused EOS damage in the power-MOSFET of the device. This is unrelated to the package or to the assembly site being qualified and is an invalid failure with respect to this qualification.

**Conclusion:** Based on these qualification results, the eSOP-12B package is now qualified and approved for assembly at Unisem. This qualification covers all PI products that use the eSOP-12B package.

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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**

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Please email this signed form to [pcn@power.com](mailto:pcn@power.com) specifying the PCN# in the subject.

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