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LFPCN-DI-BTA-2025-002/01
Product Change Notification for Littelfuse: Addition of inhouse backend manufacturing site for Discrete IGBTs

To whom it may concern,

Littelfuse would like to notify you of a change in the backend manufacturing of the discrete IGBTs parts listed in appendix C to Littelfuse's inhouse assembly unit SBU-Lipa.

DESCRIPTION OF CHANGE:

1. Change in assembly house: Addition of SBU-Lipa as an alternate supplier for listed parts in appendix C.
2. Change in device marking: Details under **APPENDIX A**.
3. Change in inner box and tube label: Details under **APPENDIX A**.
4. Reliability data summary: Details under **APPENDIX B**

Affected part number list can be found under **APPENDIX C**.

Form, fit, function changes: Littelfuse does not anticipate any change in form/fit/function of the affected part number/s.

Further changes, if any, shall be conveyed in a timely manner.

- Please acknowledge receipt of this PCN. In your acknowledgement, you can grant approval or request additional information.
- Littelfuse will assume the change is acceptable if no acknowledgement is received within 45 days from the date of this PCN. Lack of any additional response within 45 days of PCN issuance further constitutes acceptance of change.

Your prompt reply will help Littelfuse to assure a smooth and well executed transition.

Your attention and response to this matter is greatly appreciated.

If you have any additional questions or concerns, please contact me or your Regional Sales Manager.

Best Regards,

Product Marketing Manager
Discrete IGBTs
Littelfuse Europe GmbH

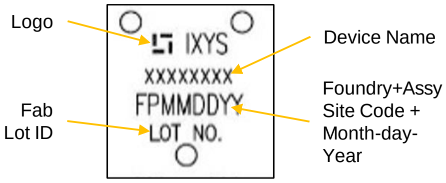
APPENDIX A: Comparison and Change Description

1. Comparison: Device Marking

a. Packages: TO-247 variants and TO-264

Item	Existing OSAT	SBU-Lipa	Change (Y/N)	Risk	Remarks
Logo	IXYS	IXYS A Littelfuse Technology	Y	Low	Change to Littelfuse Logo
Part name	Device Name	Device Name	N	NR	No change
Date Code	FPMMDDYY	YYWW+M	Y	Low	Lipa uses Lipa format + site location code
Lot #	Fab lot ID	Lipa Lot #	Y	Low	Lipa uses Lipa format. Wafer lot number is traceable thru Lipa MES system using the lot number
Assembly Line Code	P	M	Y	Low	Site location code

Existing OSAT Marking Format

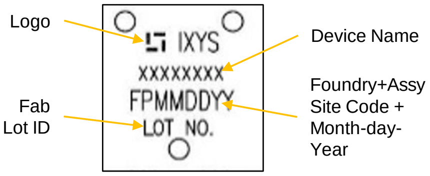


Lipa Marking Format

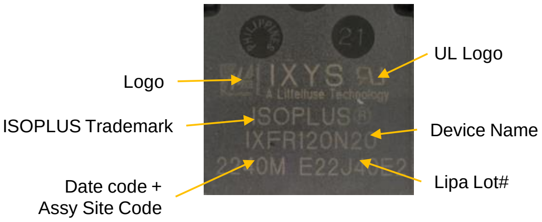
b. Packages: ISO Package variants

Item	Existing OSAT	SBU-Lipa	Change (Y/N)	Risk	Remarks
Logo	IXYS	IXYS A Littelfuse Technology	Y	Low	Change to Littelfuse Logo
UL Logo	No UL Logo	With UL Logo	Y	Low	Need to inform UL for qualification
Isoplus Trademark	None	ISOPLUS®	Y	Low	Need to inform UL for qualification
Part name	Device Name	Device Name	N	NR	No change
Date Code	FPMMDDYY	YYWW+M	Y	Low	Lipa uses Lipa format + site location code
Lot #	Fab lot ID	Lipa Lot #	Y	Low	Lipa uses Lipa format . Wafer lot number is traceable thru Lipa MES system using the lot number
Assembly Line Code	P	M	Y	Low	Site location code

Existing OSAT Marking Format



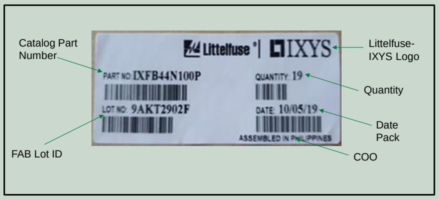
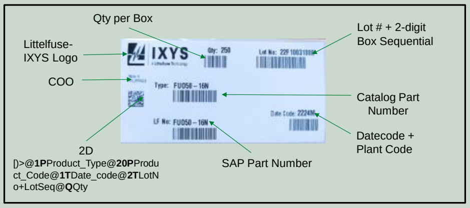
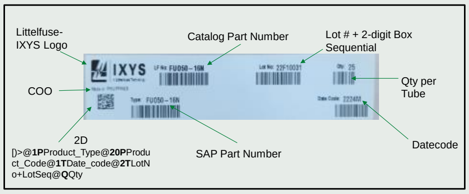
Lipa Marking Format



2. Comparison: Inner Box and Tube

Item	Existing OSAT	SBU-Lipa	Change (Y/N)	Risk	Remarks
ROHS Label	 2nd Level Interconnect 1. Category: e1 2. Max. safe temperature: 260°C RoHS COMPLIANT	 2nd Level Interconnect 1. Category: e3 2. Max. Safe temperature: 260°C RoHS COMPLIANT	Y	Low	Both have printed RoHs compliance label
Logo	IXYS A Littelfuse Technology	IXYS A Littelfuse Technology	N	No Risk	No Change
Qty per Box	Yes	Yes	N	No Risk	No change
Part Number	Yes	Yes	N	No Risk	No change
Lot No	Fab Lot ID	Lipa Lot ID format	Y	LOW	SBU-Lipa uses global format
COO	Yes	Yes	N	No Risk	No change
Code Type	Barcode	Barcode + 2D Code	Y	LOW	Additional scanning code to access information
Date Code	No	Yes	Y	No Risk	SBU-Lipa uses global format + Assy Site Code

Label Comparison:

Change Description	Existing OSAT	SBU-Lipa
Inner Box Label	 Littelfuse® | IXYS PART NO: IXFB44N100P QUANTITY: 19 LOT NO: 9AKT2902F DATE: 10/05/19 ASSEMBLED IN PHILIPPINES	 Qty: 250 Lot No: 22F10031008 Type: FU050 – 16N Date Code: 2224M LF No: FU050 – 16N [)>@**1P**Product_Type@**20P**Product_Code@**1T**Date_code@**2T**LotNo+LotSeq@**Q**Qty
Tube Label	 Littelfuse® | IXYS PART NO: IXFB44N100P QUANTITY: 19 LOT NO: 9AKT2902F DATE: 10/05/19 ASSEMBLED IN PHILIPPINES	 LF No: FU050 – 16N Lot No: 22F10031 Qty: 25 Type: FU050 – 16N Date Code: 2224M [)>@**1P**Product_Type@**20P**Product_Code@**1T**Date_code@**2T**LotNo+LotSeq@**Q**Qty

There are no changes in the tape & reel, tube specifications/dimensions.

APPENDIX B: Reliability Data Summary

TO-264 and package variants qual summary

TEST	CONDITION	ENDPOINT	DEVICE	PACKAGE	RESULT
HTRB	MIL-STD-750-1 M1038 Method A	1000 hours	IXBL64N250	ISO PLUS TO-264	0/90
			IXEL40N400	ISO PLUS TO-264	0/90
			IXBK55N300	TO-264	0/60
HTGB	JESD22 A108; 150°C	1000 hours	IXBL64N250	ISO PLUS TO-264	0/90
			IXEL40N400	ISO PLUS TO-264	0/90
			IXBK55N300	TO-264	0/60
Temperature Cycle	JESD22-A104 (-55ºC to 150ºC)	1000 cycles	IXBL64N250	ISO PLUS TO-264	0/90
			IXEL40N400	ISO PLUS TO-264	0/90
			IXBK55N300	TO-264	0/60
HAST	JESD22-A110 (130° C, 85% RH)	96 hours	IXBL64N250	ISO PLUS TO-264	0/90
			IXEL40N400	ISO PLUS TO-264	0/90
			IXBK55N300	TO-264	0/60
UHAST/AC	JESD22-A118A; 130C 85% RH	96 hours	IXBL64N250	ISO PLUS TO-264	0/90
			IXEL40N400	ISO PLUS TO-264	0/90
			IXBK55N300	TO-264	0/60
IOL	MIL-STD-750-1 Method 1037; ΔT= 100C	15,000 cycles	IXBL64N250	ISO PLUS TO-264	0/72
			IXEL40N400	ISO PLUS TO-264	0/72
			IXBK55N300	TO-264	0/48

TEST	CONDITION	ENDPOINT	DEVICE	PACKAGE	RESULT
HTRB	MIL-STD-750-1 M1038 Method A	1000 hours	IXBH10N300HV	TO-247HV	0/90
			IXYX25N250CV1HV	PLUS TO-247 HV	0/90
			IXFH80N65X2	TO-247	0/30
			IXTH12N100L	TO-247	0/90
			IXGH72N80A3	TO247	0/30
			IXTX90N25L2	Plus 247	0/60
			IXFX230N20T	Plus 247	0/90
			IXFR120N20	ISOplus247	0/60
HTGB	JESD22 A108; 150°C	1000 hours	IXBH10N300HV	TO-247HV	0/90
			IXYX25N250CV1HV	PLUS TO-247 HV	0/90
			IXFH80N65X2	TO-247	0/30
			IXTH12N100L	TO-247	0/90
			IXGH72N80A3	TO247	0/30
			IXTX90N25L2	Plus 247	0/59
			IXFX230N20T	Plus 247	0/89
			IXFR120N20	ISOplus247	0/60
Temperature Cycle	JESD22-A104 (-55ºC to 150ºC)	1000 cycles	IXBH10N300HV	TO-247HV	0/90
			IXYX25N250CV1HV	PLUS TO-247 HV	0/30
			IXFH80N65X2	TO-247	0/30
			IXTH12N100L	TO-247	0/88
			IXGH72N80A3	TO247	0/30
			IXTX90N25L2	Plus 247	0/60
			IXFX230N20T	Plus 247	0/90
			IXFR120N20	ISOplus247	0/60

APPENDIX C: Part Number List

Sl No	Part Number	Package type
1	IXBX25N250	TO-247 PLUS
2	IXBH42N250	TO-247
3	IXBK55N300	TO-264
4	IXBX55N300	TO-247 PLUS
5	IXYL60N450	TO-264 ISOPLUS
6	IXBH1836	TO-247
7	IXBH12N300	TO-247
8	IXBK75N170	TO-264
9	IXBX75N170	TO-247 PLUS
10	IXGH25N250	TO-247
11	IXEL40N400	TO-264 ISOPLUS