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May 13, 2024

LFPCN-DMI-BTA-2024-001/01

Product Change Notification for Littelfuse Discrete MOSFETs & IGBTs

Dear valued customers,

Littelfuse would like to notify you of an addition in the backend manufacturing of the discrete MOSFET & IGBT parts listed under appendix C.

DESCRIPTION OF CHANGE:

1. Addition of in-house assembly line in Lipa as a new supplier and alternative source for TO-247-3L, TO-247HV, PLUS247, PLUS TO-247HV (PLUS247HV), ISO247 and ISOPLUS247 packages. This will further streamline and enhance our supply chain efficiencies.
2. Change in device marking: Details under **APPENDIX A**.
3. Change in inner box and tube labels, and tube dimensions: Details under **APPENDIX A**.

Reliability data summary can be found 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 numbers.

The change will be implemented by 15th August 2024 if there is no further concern and feedback.

New country of origin: Philippines

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

Best Regards,

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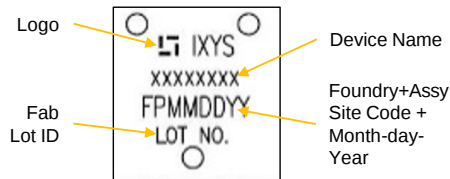
APPENDIX A: Comparison and Change Description

1. Comparison: Device Marking

a. Packages: TO-247-3L, TO-247HV, PLUS247 and PLUS247HV

Item	Existing OSAT	SBU-Lipa	Change (Y/N)	Risk	Remarks
Logo			Y	Low	Change to Littelfuse Logo
Part name	Device Name	Device Name	N	NR	No change
Date Code	FPMDDYY	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



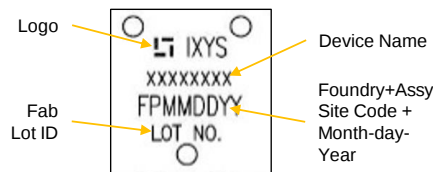
Lipa Marking Format



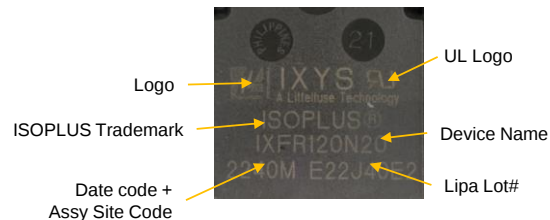
b. Packages: ISO247 and ISOPLUS247

Item	Existing OSAT	SBU-Lipa	Change (Y/N)	Risk	Remarks
Logo			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		Y	Low	Need to inform UL for qualification
Part name	Device Name	Device Name	N	NR	No change
Date Code	FPMDDYY	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

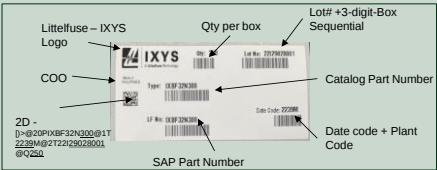
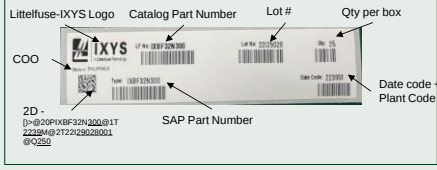
a. Inner Box Labeling

Item	Existing OSAT	SBU-Lipa	Change (Y/N)	Risk	Remarks
RoHS Label			Y	Low	Both have printed RoHS compliance label
Logo			N	No Risk	No Change
Qty per Box	300	300	N	No Risk	No change
Part Number	Device Name	Device Name	N	No Risk	No change
Lot No	Fab Lot ID	Lipa Lot ID format	Y	LOW	Lipa uses Lipa format. Wafer lot number is traceable thru Lipa MES system using the lot number
Country of Origin	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

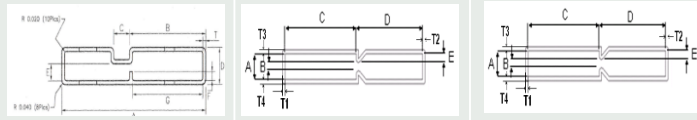
b. Tube Labeling

Item	Existing OSAT	SBU-Lipa	Change (Y/N)	Risk	Remarks
Logo			N	No Risk	No Change
Qty per tube	30	30	N	No Risk	No change
Part Number	Device Name	Device Name	N	No Risk	No change
Lot No	Fab Lot ID	Lipa Lot ID format	Y	LOW	Lipa uses Lipa format. Wafer lot number is traceable thru Lipa MES system using the lot number
Country of Origin	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	N	LOW	SBU-Lipa uses global format + Assy Site Code

c. Label Comparison

Change Description	Existing OSAT	SBU-Lipa
Inner Box Label		
Tube Label		

d. Tube Dimensions

Point of Comparison	Existing OSAT 1	Existing OSAT 2	SBU-LIPA	GAP	RISK
Length, in	20.95 - 21.05	20.95 - 21.05	20.95 - 21.05	No gap	No risk
Width, in	1.79 - 1.81	1.79 - 1.81	1.79 - 1.81	No gap	No risk
Height, in	0.32 - 0.34	0.28 - 0.33	0.28 - 0.33	Yes	Low risk, currently used in Lipa production
Material Thickness, in	0.03	0.03	0.03	No gap	No risk
Tube Opening, in	0.26 x 1.74	0.24 x 1.75	0.24 x 1.75	Yes	Low risk, currently used in Lipa production
Quantity	25	25	25	No gap	No risk
Anti-static	Yes	Yes	Yes	No gap	No risk
Design				Yes	Low risk, currently used in Lipa production

APPENDIX B: Reliability Data Summary

TEST	CONDITION	ENDPOINT	PACKAGE	RESULT
HTRB	MIL-STD-750-1 M1038 Method A	1000 hours	TO-247-3L TO-247HV Plus247 PLUS TO-247 HV ISO247 ISOPLUS247	PASS
HTGB	JESD22 A108; 150°C	1000 hours		
Temperature Cycle	JESD22-A104 (-55°C to 150°C)	1000 cycles		

TEST	CONDITION	ENDPOINT	PACKAGE	RESULT
HAST	JESD22-A110 (130° C, 85% RH)	96 hours	TO-247-3L TO-247HV Plus247 PLUS TO-247 HV ISO247 ISOPLUS247	PASS
UHAST / AC	JESD22-A118A; 130C 85% RH	96 hours		
IOL	MIL-STD-750-1 Method 1037; ΔT= 100C	15,000 cycles		

APPENDIX C:

Part Number List - Discrete MOSFETs

Sl. No.	Part Number	Sl. No.	Part Number	Sl. No.	Part Number
1	IXFH100N25P	155	IXFH80N65X2W	309	IXTH120N20X4
2	IXFH100N30X3	156	IXFH86N30T	310	IXTH120P065T
3	IXFH102N15T	157	IXFH88N30P	311	IXTH12N100L
4	IXFH10N100P	158	IXFH90N20X3	312	IXTH12N150
5	IXFH10N80P	159	IXFH90N65X3	313	IXTH12N65X2
6	IXFH110N10P	160	IXFH94N30P3	314	IXTH12N70X2
7	IXFH110N15T2	161	IXFH94N30T	315	IXTH130N10T
8	IXFH110N25T	162	IXFH96N15P	316	IXTH130N15X4
9	IXFH11N80	163	IXFH96N20P	317	IXTH130N20T
10	IXFH120N15P	164	IXFH98N60X3	318	IXTH140N075L2
11	IXFH120N20P	165	IXFJ20N85X	319	IXTH140P05T
12	IXFH120N25T	166	IXFJ26N50P3	320	IXTH140P10T
13	IXFH120N25X3	167	IXFJ80N25X3	321	IXTH150N15X4

Sl. No.	Part Number	Sl. No.	Part Number	Sl. No.	Part Number
14	IXFH120N30X3	168	IXFR102N30P	322	IXTH15N50L2
15	IXFH12N100	169	IXFR120N20	323	IXTH160N075T
16	IXFH12N100F	170	IXFR120N60X3	324	IXTH160N10T
17	IXFH12N100P	171	IXFR12N100Q	325	IXTH160N15T
18	IXFH12N100Q	172	IXFR130N65X3	326	IXTH16N20D2
19	IXFH12N120P	173	IXFR140N20P	327	IXTH16N50D2
20	IXFH12N50F	174	IXFR140N30P	328	IXTH16P60P
21	IXFH12N65X2	175	IXFR140N60X3	329	IXTH180N10T
22	IXFH12N80P	176	IXFR14N100Q2	330	IXTH182N055T
23	IXFH12N90P	177	IXFR15N100Q3	331	IXTH1N170DHV
24	IXFH12N90Q	178	IXFR16N120P	332	IXTH1N200P3
25	IXFH130N15X3	179	IXFR180N15P	333	IXTH1N200P3HV
26	IXFH140N10P	180	IXFR18N90P	334	IXTH1N250
27	IXFH140N20X3	181	IXFR200N10P	335	IXTH1N300P3HV
28	IXFH14N100Q	182	IXFR20N120P	336	IXTH1N450HV
29	IXFH14N100Q2	183	IXFR20N80P	337	IXTH1R4N250P3
30	IXFH14N60P	184	IXFR21N100Q	338	IXTH200N10T
31	IXFH14N80P	185	IXFR230N20T	339	IXTH20N50D
32	IXFH14N85X	186	IXFR24N100	340	IXTH20N60
33	IXFH150N15P	187	IXFR24N100Q3	341	IXTH20N65X2
34	IXFH150N15X4	188	IXFR24N50Q	342	IXTH20P50P
35	IXFH150N17T2	189	IXFR24N80P	343	IXTH220N20X4
36	IXFH150N20T	190	IXFR24N90P	344	IXTH22N50P
37	IXFH150N25X3	191	IXFR26N100P	345	IXTH240N15X4
38	IXFH150N30X3	192	IXFR26N120P	346	IXTH24N50L
39	IXFH15N100P	193	IXFR30N60P	347	IXTH24N65X2
40	IXFH15N100Q3	194	IXFR32N100P	348	IXTH24P20
41	IXFH15N60	195	IXFR32N100Q3	349	IXTH260N055T2
42	IXFH15N80	196	IXFR32N80P	350	IXTH26N60P
43	IXFH15N80Q	197	IXFR32N80Q3	351	IXTH26P20P
44	IXFH160N15T	198	IXFR36N50P	352	IXTH2N150
45	IXFH160N15T2	199	IXFR36N60P	353	IXTH2N150L
46	IXFH16N120P	200	IXFR38N80Q2	354	IXTH2N170D2
47	IXFH16N50P	201	IXFR40N90P	355	IXTH2N300P3HV
48	IXFH16N50P3	202	IXFR44N50P	356	IXTH2R4N120P
49	IXFH16N60P3	203	IXFR44N50Q	357	IXTH300N04T2
50	IXFH16N80P	204	IXFR44N50Q3	358	IXTH30N25L2
51	IXFH170N10P	205	IXFR44N60	359	IXTH30N50L
52	IXFH170N15X3	206	IXFR44N80P	360	IXTH30N50L2
53	IXFH170N25X3	207	IXFR48N50Q	361	IXTH30N50P

Sl. No.	Part Number	Sl. No.	Part Number	Sl. No.	Part Number
54	IXFH180N20X3	208	IXFR48N60P	362	IXTH30N60L2
55	IXFH18N100Q3	209	IXFR48N60Q3	363	IXTH30N60P
56	IXFH18N60P	210	IXFR4N100Q	364	IXTH32P20T
57	IXFH18N65X2	211	IXFR64N50P	365	IXTH34N65X2
58	IXFH18N65X3	212	IXFR64N50Q3	366	IXTH360N055T2
59	IXFH18N90P	213	IXFR64N60P	367	IXTH36N50P
60	IXFH20N100P	214	IXFR64N60Q3	368	IXTH36P15P
61	IXFH20N50P3	215	IXFR66N50Q2	369	IXTH38N30L2
62	IXFH20N60	216	IXFR80N50P	370	IXTH3N100P
63	IXFH20N60X3	217	IXFR80N50Q3	371	IXTH3N120
64	IXFH20N80P	218	IXFR80N60P3	372	IXTH3N150
65	IXFH20N85X	219	IXFR90N30	373	IXTH3N200P3HV
66	IXFH220N20X3	220	IXFX100N65X2	374	IXTH40N30
67	IXFH22N50P	221	IXFX110N65X3	375	IXTH40N50L2
68	IXFH22N60P	222	IXFX120N25P	376	IXTH440N055T2
69	IXFH22N60P3	223	IXFX120N30P3	377	IXTH44N25L2
70	IXFH22N65X2	224	IXFX120N30T	378	IXTH44P15T
71	IXFH22N65X2W	225	IXFX120N60X3	379	IXTH450P2
72	IXFH230N075T2	226	IXFX120N65X2	380	IXTH48N60X2A
73	IXFH230N10T	227	IXFX130N65X3	381	IXTH48N65X2
74	IXFH23N80Q	228	IXFX140N25T	382	IXTH48P20P
75	IXFH240N15X3	229	IXFX140N30P	383	IXTH4N100L
76	IXFH24N50	230	IXFX140N60X3	384	IXTH4N150
77	IXFH24N80P	231	IXFX150N30P3	385	IXTH4N300P3HV
78	IXFH24N90P	232	IXFX160N30T	386	IXTH500N04T2
79	IXFH26N100X	233	IXFX170N20P	387	IXTH50N30L2
80	IXFH26N50	234	IXFX170N20T	388	IXTH50P10
81	IXFH26N50P	235	IXFX180N10	389	IXTH52P10P
82	IXFH26N50P3	236	IXFX180N15P	390	IXTH58N25L2
83	IXFH26N60P	237	IXFX180N25T	391	IXTH60N20L2
84	IXFH26N65X2	238	IXFX200N10P	392	IXTH60N20X4
85	IXFH26N65X3	239	IXFX20N120P	393	IXTH62N65X2
86	IXFH28N60P3	240	IXFX210N30X3	394	IXTH64N10L2
87	IXFH28N60X3	241	IXFX220N17T2	395	IXTH68P20T
88	IXFH30N50P	242	IXFX230N20T	396	IXTH6N100D2
89	IXFH30N50Q3	243	IXFX240N15T2	397	IXTH6N120
90	IXFH30N60P	244	IXFX240N25X3	398	IXTH6N150
91	IXFH30N85X	245	IXFX24N100	399	IXTH6N50D2
92	IXFH320N10T2	246	IXFX24N100F	400	IXTH75N10
93	IXFH32N100X	247	IXFX24N100Q3	401	IXTH75N10L2

Sl. No.	Part Number	Sl. No.	Part Number	Sl. No.	Part Number
94	IXFH340N075T2	248	IXFX250N10P	402	IXTH76N25T
95	IXFH34N50P3	249	IXFX26N100P	403	IXTH76P10T
96	IXFH34N60X2A	250	IXFX26N120P	404	IXTH7P50
97	IXFH34N65X2	251	IXFX26N90	405	IXTH80N075L2
98	IXFH34N65X2W	252	IXFX27N80Q	406	IXTH80N20L
99	IXFH34N65X3	253	IXFX300N20X3	407	IXTH80N65X2
100	IXFH36N50P	254	IXFX30N100Q2	408	IXTH86N20T
101	IXFH36N60P	255	IXFX320N17T2	409	IXTH86N25T
102	IXFH36N60X3	256	IXFX32N100P	410	IXTH88N30P
103	IXFH400N075T2	257	IXFX32N100Q3	411	IXTH8P50
104	IXFH40N30	258	IXFX32N80P	412	IXTH90N20X3
105	IXFH40N50Q	259	IXFX32N80Q3	413	IXTH90P10P
106	IXFH40N55X2	260	IXFX32N90P	414	IXTH94N20X4
107	IXFH40N85X	261	IXFX34N80	415	IXTH96N20P
108	IXFH42N20	262	IXFX360N10T	416	IXTH96N25T
109	IXFH42N60P3	263	IXFX360N15T2	417	IXTH96P085T
110	IXFH42N65X2A	264	IXFX38N80Q2	418	IXTJ4N150
111	IXFH44N50P	265	IXFX400N15X3	419	IXTJ6N150
112	IXFH44N50Q3	266	IXFX40N90P	420	IXTR102N65X2
113	IXFH46N30T	267	IXFX420N10T	421	IXTR120P20T
114	IXFH46N60X2A	268	IXFX44N60	422	IXTR140P10T
115	IXFH46N65X2	269	IXFX44N80P	423	IXTR16P60P
116	IXFH46N65X2W	270	IXFX44N80Q3	424	IXTR170P10P
117	IXFH46N65X3	271	IXFX48N50Q	425	IXTR200N10P
118	IXFH48N60X3	272	IXFX48N60P	426	IXTR20P50P
119	IXFH4N100Q	273	IXFX48N60Q3	427	IXTR210P10T
120	IXFH50N20	274	IXFX520N075T2	428	IXTR32P60P
121	IXFH50N30Q3	275	IXFX52N100X	429	IXTR36P15P
122	IXFH50N50P3	276	IXFX55N50F	430	IXTR40P50P
123	IXFH50N60P3	277	IXFX64N50P	431	IXTR48P20P
124	IXFH50N85X	278	IXFX64N50Q3	432	IXTR68P20T
125	IXFH52N30P	279	IXFX64N60P	433	IXTR90P20P
126	IXFH52N30Q	280	IXFX64N60P3	434	IXTX102N65X2
127	IXFH52N50P2	281	IXFX64N60Q3	435	IXTX110N20L2
128	IXFH54N65X3	282	IXFX66N85X	436	IXTX120N65X2
129	IXFH56N30X3	283	IXFX78N50P3	437	IXTX120P20T
130	IXFH58N20	284	IXFX80N50P	438	IXTX170P10P
131	IXFH5N100P	285	IXFX80N50Q3	439	IXTX17N120L
132	IXFH60N50P3	286	IXFX80N60P3	440	IXTX1R4N450HV
133	IXFH60N60X2A	287	IXFX90N20Q	441	IXTX200N10L2

Sl. No.	Part Number	Sl. No.	Part Number	Sl. No.	Part Number
134	IXFH60N60X3	288	IXFX94N50P2	442	IXTX20N150
135	IXFH60N65X2	289	IXFX98N50P3	443	IXTX210P10T
136	IXFH60N65X2W	290	IXKH20N60C5	444	IXTX22N100L
137	IXFH69N30P	291	IXKH35N60C5	445	IXTX240N075L2
138	IXFH6N100	292	IXKH47N60C	446	IXTX24N100
139	IXFH6N100F	293	IXKH70N60C5	447	IXTX32P60P
140	IXFH6N120	294	IXKR25N80C	448	IXTX3N250L
141	IXFH6N120P	295	IXKR40N60C	449	IXTX400N15X4
142	IXFH70N20Q3	296	IXKR47N60C5	450	IXTX40P50P
143	IXFH70N30Q3	297	IXTH02N250	451	IXTX46N50L
144	IXFH70N65X3	298	IXTH02N450HV	452	IXTX4N300P3HV
145	IXFH72N30X3	299	IXTH04N300P3HV	453	IXTX550N055T2
146	IXFH74N20P	300	IXTH05N250P3HV	454	IXTX5N250
147	IXFH75N10	301	IXTH102N15T	455	IXTX600N04T2
148	IXFH76N07-11	302	IXTH10N100D	456	IXTX60N50L2
149	IXFH76N15T2	303	IXTH10N100D2	457	IXTX6N200P3HV
150	IXFH78N60X3	304	IXTH10P50P	458	IXTX80N30L2
151	IXFH7N100P	305	IXTH10P60	459	IXTX8N150L
152	IXFH80N25X3	306	IXTH110N10L2	460	IXTX90N25L2
153	IXFH80N60X2A	307	IXTH110N25T	461	IXTX90P20P
154	IXFH80N65X2	308	IXTH11P50		

Part Number List - Discrete IGBTs

Sl. No.	Part Number	Sl. No.	Part Number	Sl. No.	Part Number
1	IXGR48N60C3D1	67	IXXH100N60B3	134	IXGH6N170
2	IXYR100N120C3	68	IXBH40N160	135	IXBH1882
3	IXYJ20N120C3D1	69	IXYH80N90C3	136	IXGH1881
4	IXXR110N65B4H1	70	IXXH50N60B3D1	137	IXGH24N120C3H1
5	IXGR72N60B3H1	71	IXBH16N170	138	IXGH28N120B
6	IXGR6N170A	72	IXGH16N170	139	IXGH28N60B3D1
7	IXXR100N60B3H1	73	IXGH48N60C3D1	140	IXGH30N120B3
8	IXGR24N120C3D1	74	IXXH140N65C4	141	IXGH30N120C3H1
9	IXGR55N120A3H1	75	IXXH30N60C3D1	142	IXGH40N120A2
10	IXYR50N120C3D1	76	IXBH32N300	143	IXGH45N120
11	IXXX110N65B4H1	77	IXXH75N60B3D1	144	IXGH50N120C3
12	IXYX120N120B3	78	IXYH24N170C	145	IXGH50N90B2
13	IXYX40N450HV	79	IXXH80N65B4H1	146	IXXH100N60C3
14	IXGX120N60A3	80	IXYH30N120C4	147	IXXH110N65B4
15	IXXX300N60B3	81	IXYH40N120A4	148	IXXH30N60C3

16	IXYX110N120B4	82	IXYH30N120C3D1	149	IXXH40N65B4H1
17	IXYX140N90C3	83	IXXH80N65B4	150	IXXH50N60C3
18	IXYX120N120C3	84	IXYH30N120C3	151	IXXH60N65C4
19	IXYX100N120B3	85	IXYH82N120C3	152	IXXH75N60B3
20	IXXX160N65B4	86	IXYH20N120C3	153	IXXH75N60C3
21	IXGX50N120C3H1	87	IXBH42N170A	154	IXYH100N65A3
22	IXBX75N170A	88	IXGH32N120A3	155	IXYH10N170C
23	IXGX100N170	89	IXXH110N65C4	156	IXYH120N65B3
24	IXXX200N65B4	90	IXGH2N250	157	IXYH120N65C3
25	IXYX100N120C3	91	IXGH60N60C3D1	158	IXYH20N120C4
26	IXYX110N120C4	92	IXGH40N120C3	159	IXYH20N65B3
27	IXYX140N120A4	93	IXGH40N120C3D1	160	IXYH20N65C3
28	IXYX40N250CHV	94	IXBH6N170	161	IXYH24N90C3
29	IXGX320N60B3	95	IXYH85N120A4	162	IXYH24N90C3D1
30	IXYX110N120A4	96	IXGH36N60B3	163	IXYH30N120A4
31	IXBX64N250	97	IXXH60N65B4H1	164	IXYH30N120B4
32	IXGX120N120A3	98	IXYH16N170CV1	165	IXYH30N65C3
33	IXGX55N120A3H1	99	IXGH16N170A	166	IXYH40N120B3
34	IXGX75N250	100	IXGH32N170A	167	IXYH40N120B4
35	IXGX82N120A3	101	IXBH24N170	168	IXYH40N120C3
36	IXXX100N60B3H1	102	IXCH36N250	169	IXYH40N120C4
37	IXXX100N60C3H1	103	IXYH55N120A4	170	IXYH40N65C3
38	IXXX140N65B4H1	104	IXGH10N170	171	IXYH40N90C3
39	IXXX160N65C4	105	IXYH120N65A5	172	IXYH50N65C3
40	IXXX200N60B3	106	IXYH16N170C	173	IXYH55N120B4
41	IXXX200N60C3	107	IXYH30N170C	174	IXYH75N65C3
42	IXXX300N60C3	108	IXYH40N65C3H1	175	IXYH75N65C3H1
43	IXYX200N65B3	109	IXXH150N60C3	176	IXYH1982
44	IXYX25N250CV1	110	IXYH40N120C3D1	177	IXYH8N250CHV
45	IXYX300N65A3	111	IXYH40N120B4H1	178	IXBX50N360HV
46	IXGH1961	112	IXXH30N65B4	179	IXHH40N150HV
47	IXGH72N60A3	113	IXYH55N120B4H1	180	IXHX40N150V1HV
48	IXYH90N65A5	114	IXYH40N90C3D1	181	IXYH25N250CHV
49	IXGH6N170A	115	IXYH50N65C3H1	182	IXYH12N250CV1HV
50	IXGH24N170A	116	IXGH30N120B3D1	183	IXYH16N250CV1HV
51	IXBH42N170	117	IXGH24N120C3	184	IXYH8N250CV1HV
52	IXBH9N160G	118	IXYH55N120C4	185	IXBH22N300HV
53	IXXH50N60C3D1	119	IXGH20N120A3	186	IXBH32N300HV
54	IXGH25N160	120	IXXH60N65B4	187	IXBH42N300HV
55	IXXH75N60C3D1	121	IXBH20N300	188	IXBX28N300HV
56	IXBH10N170	122	IXGH12N120A3	189	IXYH12N250CHV
57	IXGH10N170A	123	IXGH24N170	190	IXYX50N170C

58	IXYH10N170CV1	124	IXYH24N170CV1	191	IXYX50N170C
59	IXBH5N160G	125	IXYH30N65C3H1	192	IXA17IF1200HJ
60	IXYH50N120C3D1	126	IXGH40N120B2D1	193	IXA37IF1200HJ
61	IXGH48N60A3D1	127	IXXH30N60B3	194	IXA27IF1200HJ
62	IXGH48N60B3D1	128	IXXH50N60B3	195	IXA55IF1200HJ
63	IXXH30N60B3D1	129	IXYH100N65C3	196	ITF48IF1200HR
64	IXGH30N60C3D1	130	IXYH60N90C3	197	IXA33IF1200HB
65	IXYH20N120C3D1	131	IXYH85N120C4	198	IXA45IF1200HB
66	IXYH50N120C3	132	IXXH140N65B4	199	IXA12IF1200HB
		133	IXXH40N65B4	200	IXA20IF1200HB