ON Semiconductor®

Final Product/Process Change Notification

Document # : FPCN22643X
Issue Date: 12 March 2019

Title of Change:	ON Suzhou's DPAK and IPAK Case Outline Change from Non-JEDEC to JEDEC Standard.
Proposed first ship date:	19 June 2019
Contact information:	Contact your local ON Semiconductor Sales Office or <Jinman.Song@onsemi.com>
Samples:	Contact your local ON Semiconductor Sales Office or <PCN.samples@onsemi.com> Sample requests are to be submitted no later than 30 days from the date of first notification, Initial PCN or Final PCN, for this change.
Additional Reliability Data:	Contact your local ON Semiconductor Sales Office or <Lake.Wang@onsemi.com>
Type of notification:	This is a Final Product/Process Change Notification (FPCN) sent to customers. FPCNs are issued 90 days prior to implementation of the change. ON Semiconductor will consider this change accepted, unless an inquiry is made in writing within 30 days of delivery of this notice. To do so, contact <PCN.Support@onsemi.com>
Change Part Identification:	Customer may receive the DPAK parts with Jedec from month of June 2019 onwards once FPCN expire. Jedec parts can be identified through date code marking.
Change Category:	☐ Wafer Fab Change ☑ Assembly Change ☐ Test Change ☐ Other _____

Change Sub-Category(s):

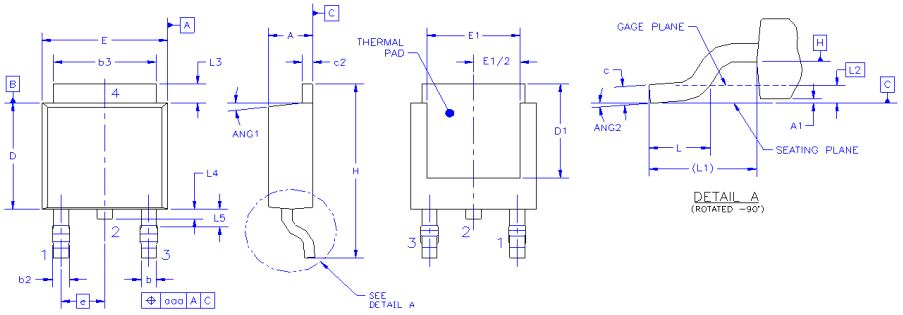
☐ Manufacturing Site Addition
☐ Manufacturing Site Transfer
☐ Manufacturing Process Change
☐ Material Change
☐ Product specific change
☐ Datasheet/Product Doc change
☑ Shipping/Packaging/Marking
☐ Other: _____

Sites Affected:	ON Semiconductor Sites: ON Suzhou, China	External Foundry/Subcon Sites: None

Description and Purpose:

Table 1: Old vs New Comparison for DPAK dimension.

REF		Old Dimension (DPAK NON-JEDEC)			New Dimension (DPAK JEDEC)		
	DESCRIPTION	MIN	NOM	MAX	MIN	NOM	MAX
A	Package thickness	2.20		2.40	2.18	2.29	2.39
A1	Profile height	-0.050		0.20	---		0.127
b	Lead width	0.66	0.76	0.86	0.64	0.77	0.89
b2	Dambar cutting width			0.96	0.76	0.95	1.14
b3	Heat sink width	5.04	5.34	5.64	5.21	5.34	5.46
c	Lead thickness	0.40	0.50	0.60	0.45	0.53	0.61
c2	Heat sink thickness	0.40	0.50	0.60	0.45	0.52	0.58
D	Package length	5.900	6.10	6.30	5.97	6.10	6.22
D1	Back metal length	4.83			5.21		---
E	Package width	6.40	6.60	6.80	6.35	6.54	6.73
E1	Back metal width	5.040	----	5.640	4.32		---
e	Lead pitch	2.08	2.28	2.48	---	2.29	BSC
H	Total package length	9.20	9.50	9.80	9.40	9.91	10.41
L	Foot length	1.40	----	1.70	1.40	1.59	1.78
(L1)	Lead length	2.50	2.70	2.90		2.9ref	
L2	Gage plane	0.490	0.50	0.510	---	0.51	BSE
L3	Heat sink height	0.50		0.90	0.89	1.08	1.27
L4	Center lead cut length	----	----	----	0.64	0.83	1.02
L5	Dambar distance to pkg edge				---	---	---
ANG1	Package draft angle	----	----	----	---	---	---
ANG2	foot landing angle	----	----	----	0.00	---	10.00
aaa	Lead position tolerances	---	---	---	---	---	0.25



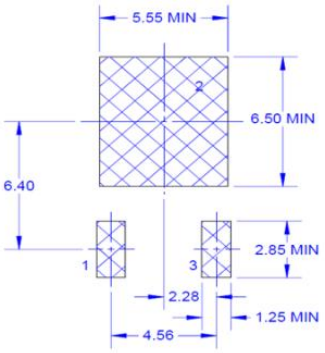
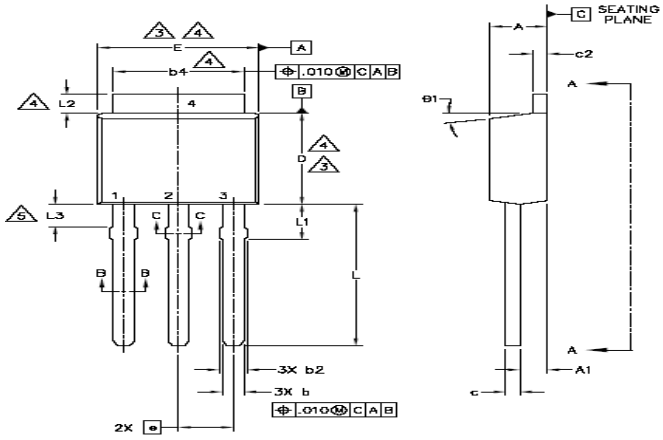
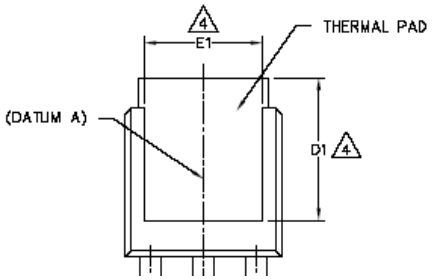


Table 2: Old vs New Comparison for IPAK dimension:

		Old Dimension (IPAK NON-JEDEC)			New Dimension (IPAK JEDEC)		
REF	DESCRIPTION	MIN	NOM	MAX	MIN	NOM	MAX
A	Package thickness	2.10	2.30	2.50	2.28	2.30	2.33
A1	Downset distance	1.02	1.07	1.12	0.97	1.02	1.07
b	Lead mounting width	0.66	0.76	0.86	0.74	0.79	0.84
b2	Lead stand off width	---	---	0.96	0.80	0.90	1.00
b4	Heatsink width	5.14	5.34	5.54	5.31	5.36	5.41
c	Lead thickness	0.40	0.50	0.60	0.51	0.53	0.56
c2	Heatsink thickness	0.40	0.50	0.60	0.51	0.53	0.56
D	Package height	6.00	6.10	6.20	6.08	6.10	6.13
D1	Thermal Pad height	---	4.91	---	5.37	5.42	5.47
E	Package width	6.40	6.60	6.80	6.52	6.54	6.57
E1	Thermal pad width	---	5.04	---	5.04	5.09	5.14
e	Lead pitch		2.300	TYP		2.286	
L	lead length	9.00	9.30	9.60	9.25	9.30	9.35
L1	Lead standoff length	---	1.80	---	---	---	---
L2	Heatsink height	0.50	0.70	0.90	1.05	1.10	1.15





Reliability Data Summary:

Device: FQD2N90TM
Completed the qualification requirement per plan.
The scope was to perform assembly test and confirm comparable results achieved to the existing process:

Test	Name	Test Conditions	Intervals	Results
HTRB	JESD22-A108	Ta = 150°C, 80% rated BV	1008 Hrs	0/77
HTGB	JESD22-A108	Ta = 150°C, 100% rated Vgs	1008 Hrs	0/77
HTSL	JESD22-A103	Ta = 150°C	1008 Hrs	0/77
IOL	MIL-STD-750(M1037) AEC-Q101	Ta=+25°C, delta Tj=125°C On/of = 2 min	5,000 Cyc	0/77
TC	JESD22-A104	Ta=-65C to +150C	500 Cyc	0/77
H3TRB	JESD22-A101	Ta=85°C, 85% RH, 80% rated or 100V max	1008 Hrs	0/77
UHAST	JESD22-A118	+110°C, RH=85% , unbiased	264 Hrs	0/77
RSH	JESD22-A106	270 C Immersion	Electrical	0/30

Electrical Characteristic Summary: Electrical characteristics are not impacted.

List of Affected Parts:

Note: Only the standard (off the shelf) part numbers are listed in the parts list. Any custom parts affected by this PCN are shown in the customer specific PCN addendum in the PCN email notification, or on the **PCN Customized Portal.**

Part Number	Qualification Vehicle
FQD10N20LTM	FQD2N90TM
FQD17N08LTM	FQD2N90TM
FQD9N25TM-F080	FQD2N90TM
FQU10N20CTU	FQD2N90TM
FQU11P06TU	FQD2N90TM
FQU12N20TU	FQD2N90TM
FQU12N20TU-T	FQD2N90TM
FQU13N06LTU	FQD2N90TM
FQU13N10LTU	FQD2N90TM
FQU17P06TU	FQD2N90TM
FQU1N60CTU	FQD2N90TM
FQU1N80TU	FQD2N90TM
FQU20N06LTU	FQD2N90TM
FQU2N60CTU	FQD2N90TM
FQU3N60CTU	FQD2N90TM
FQU5N40TU	FQD2N90TM
FQU5N60CTU	FQD2N90TM
FQU5P20TU	FQD2N90TM
FQU8P10TU	FQD2N90TM
FQU9N25TU	FQD2N90TM