Final Product/Process Change Notification

Document #:FPCN25822X
Issue Date:04 Jun 2024

Title of Change:	Additional Mold Compound Supplier and Leadframe Dimension Change for D2PAK Case Outline 418AJ from onsemi Suzhou, China
Proposed First Ship date:	11 Sep 2024 or earlier if approved by customer
Contact Information:	Contact your local onsemi Sales Office or Sunny.Hou@onsemi.com
PCN Samples Contact:	Contact your local onsemi Sales Office. 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. Samples delivery timing will be subject to request date, sample quantity and special customer packing/label requirements.
Additional Reliability Data:	Contact your local onsemi Sales Office or Jutta.Xu@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. onsemi 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
Marking of Parts/ Traceability of Change:	Keep same marking. Changed material will be identified by lot code.
Change Category:	Assembly Change
Change Sub-Category(s):	Material Change

Sites Affected:

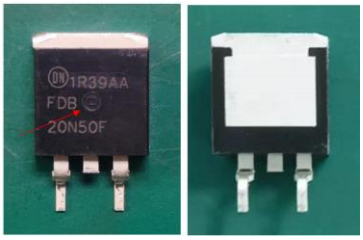
onsemi Sites	**External Foundry/Subcon Sites**
onsemi Suzhou, China	None

Description and Purpose:

This FPCN is to inform customers that onsemi is qualifying new green mold compound GR710F from China local supplier Hysol, as alternative source on selected D2PAK Discrete products in onsemi Suzhou, China. This will help improve supply chain flexibility.
In addition, onsemi is consolidating D2PAK leadframe. Leadframe dimension changes are shown in the table below. The MOD remains CASE 418AJ however there is a change in the location of mold feature.

	Before Change Description	**After Change Description**
Lead Frame	Reference the table showing the before and after dimensions that is below.	Reference the table showing the before and after dimensions that is below.
Mold Compound	KCC KTMC5900GM F01.	Hysol GR710F & KCC KTMC5900GM F01.
Appearance	Mold feature optional locates at centre, appearance detail reference below picture.	Mold feature optional locates at corner, appearance detail reference below picture.

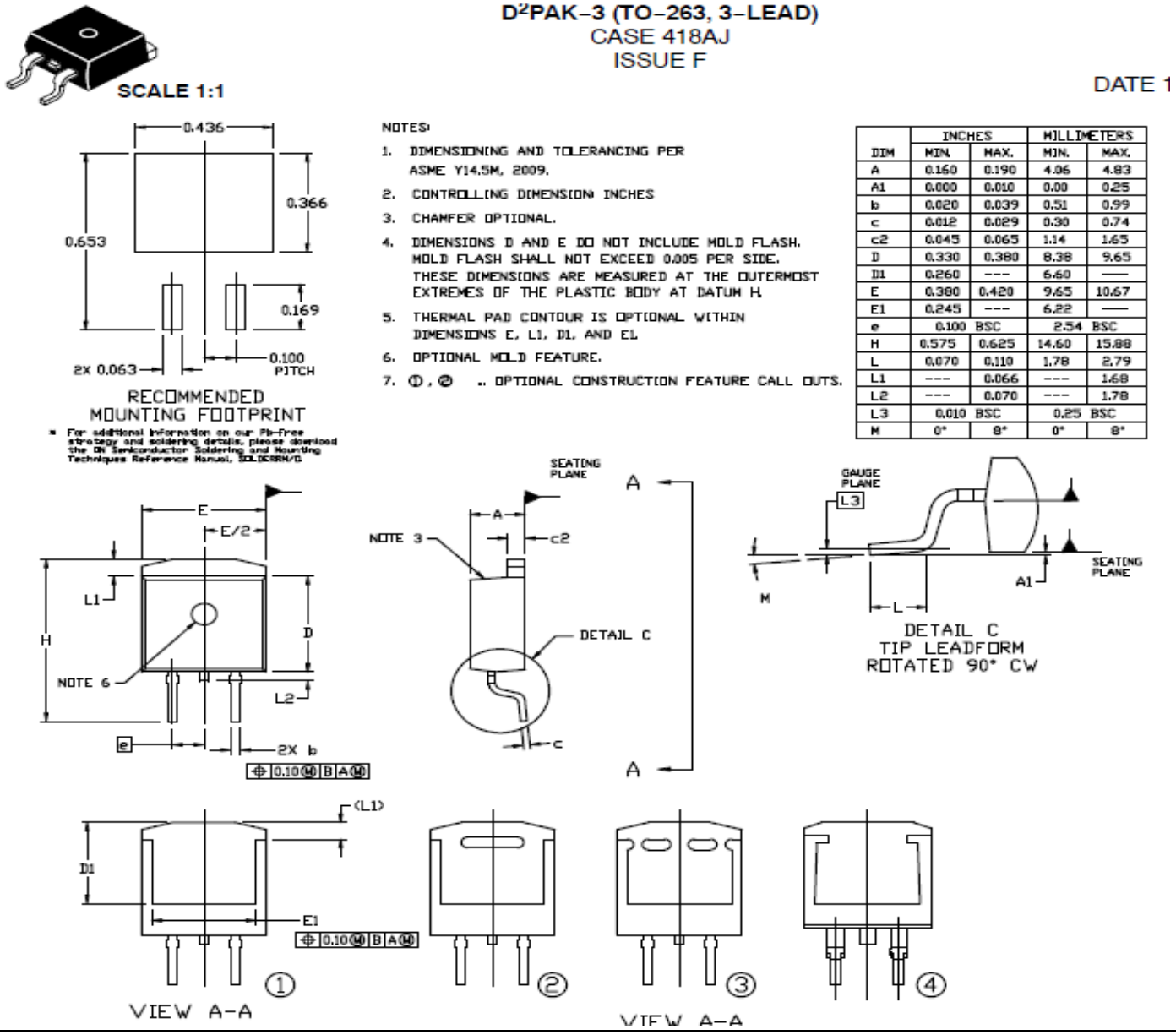
Mold feature optional location & appearance comparison:

	From	**To**
Appearance change	Optional mold feature located in center 	Optional mold feature located in bottom left 

Old vs New Comparison for Leadframe dimension:

DIM	DESCRIPTION	MOD（Same） CASE 418AJ (mm)			Current LF (mm)			Proposed LF (mm)			Remarks
		MIN	NOM	MAX	MIN	NOM	MAX	MIN	NOM	MAX	
b	Lead width	0.51	----	0.99	0.775	0.800	0.825	0.788	0.813	0.838	Both in MOD spec.
c	Lead thickness	0.30	----	0.74	0.480	0.500	0.520	0.371	0.381	0.391	Both in MOD spec.
c2	Heat sink thickness	1.14	----	1.65	1.27	1.30	1.33	1.17	1.27	1.28	Both in MOD spec.
D1	Heat sink length	6.60	----	----	7.850	----	----	8.705	8.730	8.755	Both in MOD spec.
E	Package width	9.65	----	10.67	9.850	9.880	9.910	10.135	10.160	10.185	Both in MOD spec.
E1	Heat sink width	6.22	----	----	7.350	----	----	8.220	----	----	Both in MOD spec.
e	Lead pitch	----	2.54	BSC	2.510	2.540	2.570	2.515	2.540	2.565	Both in MOD spec.

Dimensions not listed in the table above will remain the same.



DIM	INCHES MIN.	INCHES MAX.	MILLIMETERS MIN.	MILLIMETERS MAX.
A	0.160	0.190	4.06	4.83
A1	0.000	0.010	0.00	0.25
b	0.020	0.039	0.51	0.99
c	0.012	0.029	0.30	0.74
c2	0.045	0.065	1.14	1.65
D	0.330	0.380	8.38	9.65
D1	0.260	---	6.60	——
E	0.380	0.420	9.65	10.67
E1	0.245	---	6.22	——
e	0.100 BSC		2.54 BSC	
H	0.575	0.625	14.60	15.88
L	0.070	0.110	1.78	2.79
L1	---	0.066	---	1.68
L2	---	0.070	---	1.78
L3	0.010 BSC		0.25 BSC	
M	0°	8°	0°	8°

Reliability Data Summary:

QV DEVICE NAME: FDB20N50F
PACKAGE: D2PAK
RMS: U95065/U95070

Test	Specification	Condition	Interval	Result
HTRB	JESD22-A108	Tj=150°C, 80% max rated V	1008hrs	0/231
HTGB	JESD22-A108	Tj=150°C, 100% max rated Vgss	1008hrs	0/231
HTSL	JESD22-A103	Ta= 150°C	1008hrs	0/231
Preconditioning	J-STD-020 JESD-A113	MSL 1 @ 245 °C, Pre IOL, TC, uHAST, HAST, H3TRB for surface mount pkgs only		0/813
TC+PC	JESD22-A104	Ta= -55°C to +150°C	1000cycs	0/231
H3TRB+PC	JESD22-A101	85°C, 85% RH, bias	1008hrs	0/231
UHAST+PC	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	96hrs	0/231
IOL+PC	MIL STD750, M 1037	Ta=+25°C, delta Tj=100°C max, Ton=Toff=3.5min	8572cycs	0/120
SD	JSTD002	Ta = 245°C, 5 sec		0/45

Electrical Characteristics 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
FDB047N10	FDB20N50F
FDB20N50F	FDB20N50F

Appendix A: Changed Products

PCN#: FPCN25822X
Issue Date: Jun 04, 2024

DIKG: DIGI-KEY

Product	Customer Part Number	Qualification Vehicle	New Part Number	Replacement Supplier
FDB047N10		FDB20N50F	#NONE	
FDB20N50F		FDB20N50F	#NONE	