ON Semiconductor®

Final Product/Process Change Notification

Document # : FPCN22042X
Issue Date: 21 November 2017

Title of Change:	Mold compound changes to Green version for DOSMA, SMB, SMC & lead frame of internal structure changes from triple to bi-layer for TTN30.
Proposed first ship date:	28 February 2018
Contact information:	Contact your local ON Semiconductor Sales Office or <edgar.kim@onsemi.com>
Samples:	Contact your local ON Semiconductor Sales Office
Additional Reliability Data:	Contact your local ON Semiconductor Sales Office or <Ken.fergus@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:	Affected products will be identified with date code.
Change category:	☐ Wafer Fab Change ☒ Assembly Change ☐ Test Change ☐ Other _____

Change Sub-Category(s):

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

Sites Affected:	ON Semiconductor Sites: None	External Foundry/Subcon Sites: Panjit

Description and Purpose:

This Final Notification announces to customers that due to environmental concerns, the standard industry is moving into Green Halogen-Free products.

This change of mold compound is a corporate directive to go for Green, and the change of internal lead frame to bi-layer is to ensure the better thermal performance of TTN30 package products.

Material to be changed	Before Change Description	After Change Description
Lead frame	Triple layer	Bi layer
Mold Compound	ELL2KS400	ELER-8-640

Reliability Data Summary:

QV DEVICE NAME: S1A, SMBK22A, SMCJ14A for changing mold compound to Green.

Test	Specification	Condition	Interval	Results
PC	J-STD-020 JESD-A113	TMCL -55~+150 ,5cycle Bake 125 +5/-0 ℃, 24hours Temperature humidity 85℃/85%RH, 168hours 4. Reflow 3 times	1 cyc	0/693(3lots)
HTRB	JESD22-A108	Ta=100°C, 100% max rated V	168 hrs 500 hrs 1000 hrs	0/231(3lots) 0/231(3lots) 0/231(3lots)
H^3TRB (THBT)	JESD22-A101	TA=85℃+/-2℃ RH=85%+/-5% VR=80%VB (customer spec.) DC Supply	168 hrs 500 hrs 1000 hrs	0/231(3lots) 0/231(3lots) 0/231(3lots)
TC (TMCL)	JESD22-A104	Ta = －55＋0℃/－10℃ 10min Ta = ＋150＋15℃/ - 0℃10min Transfer time ≦1 min. The load Should reach temp. within 15mins	100 cyc 500 cyc 1000 cyc	0/231(3lots) 0/231(3lots) 0/231(3lots)
PTC (PRCL)	JESD22- B105	ΔTj≧100℃ DC supply On time: 2 mins at least , Off time : 2 mins at least	7500 cyc 15000 cyc	0/231(3lots) 0/231(3lots)
HTSL	JESD22-A103C	Ta = 150C	168 hrs 500 hrs 1000 hrs	0/231(3lots) 0/231(3lots) 0/231(3lots)
RSH	JESD22 A-111 (SMD) B-106 (PTH)	Temperature of solder pot=260±5℃Time for dipping in solder=10±1sec Dipping depth=within 1.27mm of the body	1 cyc	0/90(3lots)

QV DEVICE NAME: MB8S. For changing the internal structure of lead frame from triple layer to bi layer.

Test	Specification	Condition	Interval	Results
PC	J-STD-020 JESD-A113	TMCL -55~+150 ,5cycle Bake 125 +5/-0 ℃, 24hours Temperature humidity 85℃/85%RH, 168hours 4. Reflow 3 times	1 cyc	0/693(3lots)
HTRB	JESD22-A108	Ta=100°C, 100% max rated V	168 hrs 500 hrs 1000 hrs	0/231(3lots) 0/231(3lots) 0/231(3lots)
H^3TRB (THBT)	JESD22-A101	TA=85℃+/-2℃ RH=85%+/-5% VR=80%VB (customer spec.) DC Supply	168 hrs 500 hrs 1000 hrs	0/231(3lots) 0/231(3lots) 0/231(3lots)
TC (TMCL)	JESD22-A104	Ta = －55＋0℃/－10℃ 10min Ta = ＋150＋15℃/ - 0℃10min Transfer time ≦1 min. The load Should reach temp. within 15mins	100 cyc 500 cyc 1000 cyc	0/231(3lots) 0/231(3lots) 0/231(3lots)
PTC (PRCL)	JESD22- B105	ΔTj≧100℃ DC supply On time: 2 mins at least , Off time : 2 mins at least	7500 cyc 15000 cyc	0/231(3lots) 0/231(3lots)
HTSL	JESD22-A103C	Ta = 150C	168 hrs 500 hrs 1000 hrs	0/231(3lots) 0/231(3lots) 0/231(3lots)
RSH	JESD22 A-111 (SMD) B-106 (PTH)	Temperature of solder pot=260±5℃Time for dipping in solder=10±1sec Dipping depth=within 1.27mm of the body	1 cyc	0/90(3lots)

Electrical Characteristic Summary:
Electrical characteristic are not impacted.

List of Affected Parts:

Product ID	Qualification Vehicle
DF005S	DF005S
DF01S	
DF02S	
DF04S	
DF06S	
DF08S	
DF10S	
DF005M	DF01M
DF01M	
DF02M	
DF04M	
DF06M	
DF08M	
DF10M	
MB1S	MB8S
MB2S	
MB4S	
MB6S	
MB8S	
S100	S1A
S1A	
S1B	
S1D	
S1G	
S1J	
S1K	
S1M	
SS12	
SS13	
SS14	
SS15	
SS16	
SS18	
SS19	

ES1A	S1A
ES1B	
ES1C	
ES1D	
ES1F	
ES1G	
ES1H	
ES1J	
RS1A	
RS1B	
RS1D	
RS1G	
RS1J	
RS1K	
RS1M	
EGF1A	
EGF1B	
EGF1C	
EGF1D	
GF1A	
GF1B	
GF1D	
GF1G	
GF1J	
GF1K	
GF1M	
RGF1A	
RGF1B	
RGF1D	
RGF1G	
RGF1J	
RGF1K	
RGF1M	
MBRS130	SMBJ22A
MBRS130L	
MBRS140	
S210	
S2A	
S2B	
S2D	

S2G	SMBJ22A
S2J	
S2K	
S2M	
SMBJ100A	
SMBJ100CA	
SMBJ10A	
SMBJ10CA	
SMBJ110A	
SMBJ110CA	
SMBJ11A	
SMBJ11CA	
SMBJ120A	
SMBJ120CA	
SMBJ12A	
SMBJ12CA	
SMBJ130A	
SMBJ130CA	
SMBJ13A	
SMBJ13CA	
SMBJ14A	
SMBJ14CA	
SMBJ150A	
SMBJ150CA	
SMBJ15A	
SMBJ15CA	
SMBJ160A	
SMBJ160CA	
SMBJ16A	
SMBJ16CA	
SMBJ170A	
SMBJ170CA	
SMBJ17A	
SMBJ17CA	
SMBJ18A	
SMBJ18CA	
SMBJ20A	
SMBJ20CA	
SMBJ22A	
SMBJ22CA	
SMBJ24A	

SMBJ24CA	SMBJ22A
SMBJ26A	
SMBJ26CA	
SMBJ28A	
SMBJ28CA	
SMBJ30A	
SMBJ30CA	
SMBJ33A	
SMBJ33CA	
SMBJ36A	
SMBJ36CA	
SMBJ40A	
SMBJ40CA	
SMBJ43A	
SMBJ43CA	
SMBJ45A	
SMBJ45CA	
SMBJ48A	
SMBJ48CA	
SMBJ51A	
SMBJ51CA	
SMBJ54A	
SMBJ54CA	
SMBJ58A	
SMBJ58CA	
SMBJ5V0A	
SMBJ5V0CA	
SMBJ60A	
SMBJ60CA	
SMBJ64A	
SMBJ64CA	
SMBJ6V0A	
SMBJ6V0CA	
SMBJ6V5A	
SMBJ6V5CA	
SMBJ70A	
SMBJ70CA	
SMBJ75A	
SMBJ75CA	
SMBJ78A	
SMBJ78CA	

SMBJ7V0A	SMBJ22A
SMBJ7V0CA	
SMBJ7V5A	
SMBJ7V5CA	
SMBJ85A	
SMBJ85CA	
SMBJ8V0A	
SMBJ8V0CA	
SMBJ8V5A	
SMBJ8V5CA	
SMBJ90A	
SMBJ90CA	
SMBJ9V0A	
SMBJ9V0CA	
SS22	
SS23	
SS24	
SS25	
SS26	
SS28	
SS29	
ES2A	
ES2B	
ES2C	
ES2D	
MBRS320	
MBRS340	
S310	
S3A	
S3B	
S3D	
S3G	
S3J	
S3K	
S3M	
S3N	
SMCJ100A	
SMCJ100CA	
SMCJ10A	
SMCJ10CA	
SMCJ110A	

SMCJ110CA	SMCJ14A
SMCJ11A	
SMCJ11CA	
SMCJ120A	
SMCJ120CA	
SMCJ12A	
SMCJ12CA	
SMCJ130A	
SMCJ130CA	
SMCJ13A	
SMCJ13CA	
SMCJ14A	
SMCJ14CA	
SMCJ150A	
SMCJ150CA	
SMCJ15A	
SMCJ15CA	
SMCJ160A	
SMCJ160CA	
SMCJ16A	
SMCJ16CA	
SMCJ170A	
SMCJ170CA	
SMCJ17A	
SMCJ17CA	
SMCJ18A	
SMCJ18CA	
SMCJ20A	
SMCJ20CA	
SMCJ22A	
SMCJ22CA	
SMCJ24A	
SMCJ24CA	
SMCJ26A	
SMCJ26CA	
SMCJ28A	
SMCJ28CA	
SMCJ30A	
SMCJ30CA	
SMCJ33A	
SMCJ33CA	

SMCJ36A	SMCJ14A
SMCJ36CA	
SMCJ40A	
SMCJ40CA	
SMCJ43A	
SMCJ43CA	
SMCJ45A	
SMCJ45CA	
SMCJ48A	
SMCJ48CA	
SMCJ51A	
SMCJ51CA	
SMCJ54A	
SMCJ54CA	
SMCJ58A	
SMCJ58CA	
SMCJ5V0A	
SMCJ5V0CA	
SMCJ60A	
SMCJ60CA	
SMCJ64A	
SMCJ64CA	
SMCJ6V0A	
SMCJ6V0CA	
SMCJ6V5A	
SMCJ6V5CA	
SMCJ70A	
SMCJ70CA	
SMCJ75A	
SMCJ75CA	
SMCJ78A	
SMCJ78CA	
SMCJ7V0A	
SMCJ7V0CA	
SMCJ7V5A	
SMCJ7V5CA	
SMCJ85A	
SMCJ85CA	
SMCJ8V0A	
SMCJ8V0CA	
SMCJ8V5A	

SMCJ8V5CA	SMCJ14A
SMCJ90A	
SMCJ90CA	
SMCJ9V0A	
SMCJ9V0CA	
SS32	
SS33	
SS34	
SS35	
SS36	
SS38	
SS39	
ES3A	
ES3B	
ES3C	
ES3D	
ES3J	