ON Semiconductor

FINAL PRODUCT/PROCESS CHANGE NOTIFICATION #20068

Generic Copy

Issue Date: 12-Sep-2013

TITLE: Qualify OSPI as alternate supplier of SOIC20 & TSSOP16 packages

PROPOSED FIRST SHIP DATE:

SOIC 20L & TSSOP 16L – Dec 12, 2013

AFFECTED CHANGE CATEGORY(S): Assembly Manufacturing Site and BOM

FOR ANY QUESTIONS CONCERNING THIS NOTIFICATION: Contact your local ON Semiconductor Sales Office or Ovidiu Tol <ovidiu.tol@onsemi.com> or Francis Santos <francis.santos@onsemi.com>

SAMPLES: Contact your local ON Semiconductor Sales Office

ADDITIONAL RELIABILITY DATA: Available
Contact your local ON Semiconductor Sales Office or Francis.Lualhati@onsemi.com & Gelo.Ramos@onsemi.com

NOTIFICATION TYPE:

Final Product/Process Change Notification (FPCN)

Final change notification sent to customers. FPCNs are issued at least 90 days prior to implementation of the change.

ON Semiconductor will consider this change approved unless specific conditions of acceptance are provided in writing within 30 days of receipt of this notice. To do so, contact <quality@onsemi.com>.

DESCRIPTION AND PURPOSE:

Qualify OSPI as assembly site for SOIC20, & TSSOP16. OSPI is already a qualified source of SOIC and TSSOP packages and is TS16949 certified.

OSPI will be using its standard Bill of Materials and Process Flow with no expected impact to form, fit, and function.

For wide body SOICs, ON Semiconductor has re-classified the Moisture Sensitivity Level on the affected parts from MSL1-260C to MSL3-260C. The reason for this MSL re-classification is a new lead frame had to be qualified due to the Thailand flooding some time ago.

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RELIABILITY TEST SUMMARY:

SOIC20L:

Test	Name	Test Conditions	End Point Req's	Test Results / Read Point	(rej/ ss) Lot A	(rej/ ss) Lot B	(rej/ ss) Lot C
Prep	Sample preparation and initial part testing	various	---	Initial Electrical	done	done	done
HTSL	High Temp Storage Life	Temp = +150°C for 1008 hours	c = 0, Room, Hot	508 Hrs	0/80	0/80	0/80
				1008 Hrs	0/80	0/80	0/80
PC	MSL3 Preconditioning	3x IR @ 260 deg C	c = 0, Room	Post Electrical	0/240	0/240	0/240
TC-PC	Temp Cycle + Preconditioning	Temp = -65°C to +150°C; for 500 cycles	c = 0, Room, Hot	Post PC Electrical	0/80	0/80	0/80
				500 cyc	0/80	0/80	0/80
				1000 cyc	0/80	0/80	0/80
HAST-PC	Highly Accelerated Stress Test + Preconditioning	Temp = +130°C; RH = 85%, psig ~28 for 96hr	c = 0, Room, Hot	Post PC Electrical	0/80	0/80	0/80
				96 hrs	0/80	0/80	0/80
AC-PC	Autoclave + Preconditioning	Temp = +121°C; RH = 100%, psig ~15 for 96hr	c = 0, Room	Post PC Electrical	0/80	0/80	0/80
				96 hrs	0/80	0/80	0/80
SAT	Scanning Acoustic Tomography	Compare for Delamination before and after PC	Compare to existing data	Results	0/80	0/80	0/80
CDPA	Custom Destructive Physical Analysis	Wire Bond Pull Test following 500 cyc TC + PC	Cpk > 1.33	30 bonds minimum	0/30	0/30	0/30
BPS	Bond Pull Strength	Cpk >1.33	5 parts minimum	30 bonds minimum	0/30	0/30	0/30
BS	Bond Shear	Cpk >1.33	5 parts minimum	30 bonds minimum	0/30	0/30	0/30
SD	Solderability	Solder Temp= 245°C	Visual Inspection	15 units minimum	0/15	0/15	0/15
PD	Physical Dimension Inspection	Cpk > 1.33	Inspection	10 units minimum	0/10	0/10	0/10
CHAR	Characterization	Per AEC-Q003	Room, Hot, Cold	Results	0/30	0/30	0/30
ESD	Electro-static Discharge	Human Body Model, 500V	n/a	Results	0/3	0/3	0/3
		Human Body Model, 1000V	n/a	Results	0/3	0/3	0/3
		Human Body Model, 1500V	n/a	Results	0/3	0/3	0/3
		Human Body Model, 2000V	n/a	Results	0/3	0/3	0/3
		Human Body Model, 2500V	n/a	Results	0/3	0/3	0/3
		Machine Model, 100V	n/a	Results	0/3	0/3	0/3
		Machine Model, 200V	n/a	Results	0/3	0/3	0/3
		Machine Model, 300V	n/a	Results	0/3	0/3	0/3
LU	Latch Up	100 mA at 125°C	n/a	Results	0/6	0/6	0/6

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TSSOP16:

Test	Name	Test Conditions	End Point Req's	Test Results	(rej/ ss)	(rej/ ss)	(rej/ ss)
				Read Point	Lot A	Lot B	Lot C
Prep	Sample preparation and initial part testing	various	---	Initial Electrical	done	done	done
HTSL	High Temp Storage Life	Temp = +150°C for 1008 hours	c = 0, Room	508 Hrs	0/80	0/80	0/80
				1008 Hrs	0/80	0/80	0/80
PC	MSL1 Preconditioning	3x IR @ 260 deg C	c = 0, Room	Post Electrical	0/240	0/240	0/240
TC-PC	Temp Cycle + Preconditioning	Temp = -65°C to +150°C; for 500 cycles	c = 0, Room	Post PC Electrical	0/80	0/80	0/80
				500 cyc	0/80	0/80	0/80
				1000 cyc	0/80	0/80	0/80
HAST-PC	Highly Accelerated Stress Test + Preconditioning	Temp = +130°C; RH = 85%, psig ~28 for 96hr	c = 0, Room	Post PC Electrical	0/80	0/80	0/80
				96 hrs	0/80	0/80	0/80
AC-PC	Autoclave + Preconditioning	Temp = +121°C; RH = 100%, psig ~15 for 96hr	c = 0, Room	Post PC Electrical	0/80	0/80	0/80
				96 hrs	0/80	0/80	0/80
SAT	Scanning Acoustic Tomography	Compare for Delamination before and after PC	Compare to existing data	Results	0/25	0/25	0/25
CDPA	Custom Destructive Physical Analysis	Wire Bond Pull Test following 500 cyc TC + PC	Cpk > 1.33	30 bonds minimum	0/30	0/30	0/30
BPS	Bond Pull Strength	Cpk >1.33	5 parts minimum	30 bonds minimum	0/30	0/30	0/30
BS	Bond Shear	Cpk >1.33	5 parts minimum	30 bonds minimum	0/30	0/30	0/30
SD	Solderability	Solder Temp= 245°C	Visual Inspection	15 units minimum	0/15	0/15	0/15
PD	Physical Dimension Inspection	Cpk > 1.33	Inspection	10 units minimum	0/10	0/10	0/10
CHAR	Characterization	Per AEC-Q003	Room	Results	0/30	0/30	0/30
ESD	Electro-static Discharge	Human Body Model, 500V	n/a	Results	0/3	0/3	0/3
		Human Body Model, 1000V	n/a	Results	0/3	0/3	0/3
		Human Body Model, 1500V	n/a	Results	0/3	0/3	0/3
		Human Body Model, 2000V	n/a	Results	0/3	0/3	0/3
		Human Body Model, 2500V	n/a	Results	0/3	0/3	0/3
		Machine Model, 100V	n/a	Results	0/3	0/3	0/3
		Machine Model, 200V	n/a	Results	0/3	0/3	0/3
		Machine Model, 300V	n/a	Results	0/3	0/3	0/3
LU	Latch Up	100 mA at 125°C	n/a	Results	0/6	0/6	0/6

ELECTRICAL CHARACTERISTIC SUMMARY:

There were no changes in device electrical performance or specifications. Summary data for qualification vehicle/s are available. Please contact your local ON Semiconductor Sales Office or <Francis Santos – Francis.Santos@onsemi.com >

CHANGED PART IDENTIFICATION:

The parts assembled in OSPI will have letter "P' marked on the front at the location that identifies the assembly house.

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List of affected General Parts:

TSSOP 16 Ld

CAT9554AYI-GT2	CAT9554AYI-G	CAT9557YI-G
CAT9534YI-G	CAT9554YI-G	CAT9557YI-GT2
CAT9534YI-GT2	CAT9554YI-GT2	

SOIC 20 Ld

CAT310W-T1	CAT5221WI-25-T1	CAT5241WI-10-T1
CAT5221WI00	CAT5221WI50	CAT5241WI25
CAT5221WI-00-T1	CAT5221WI-50-T1	CAT5241WI-25-T1
CAT5221WI10	CAT5241WI00	CAT5241WI50
CAT5221WI-10-T1	CAT5241WI-00-T1	CAT5241WI-50-T1
CAT5221WI25	CAT5241WI10	

List of affected Customer Specific Parts:

SOIC 20 Ld

CAT5241WI-10T-QJ
CAT5241WI-10-QJ
CAT5241WI-50T-QJ
CAT5241WI-50-QJ
CAT5221WI-00T-QJ
CAT5221WI-00-QJ
CAT5221WI-10-QJ
CAT5221WI-50T-QJ
CAT5221WI-50-QJ