



FINAL PRODUCT/PROCESS CHANGE NOTIFICATION #16547Generic Copy

Issue Date: 01-Dec-2010**TITLE:** Copper Wire replacing Gold Wire in the SOT563, SOT553, SOT223(Soft Solder), SOD323, SC88, SC89, SOT723, SOD923, SOT963, SOT953 and SOT1123 packages.**PROPOSED FIRST SHIP DATE:** 01-Mar-2011**AFFECTED CHANGE CATEGORY(S):** ON Semiconductor Assembly Areas – Wire Bond**FOR ANY QUESTIONS CONCERNING THIS NOTIFICATION:**Contact your local ON Semiconductor Sales Office or Eben Lim <eben.lim@onsemi.com>**SAMPLES:** Contact your local ON Semiconductor Sales Office or Eben Lim <eben.lim@onsemi.com>**ADDITIONAL RELIABILITY DATA:** AvailableContact your local ON Semiconductor Sales Office or Nicky Siu <Nicky.siu@onsemi.com> or C.C Sim <ffxg4t@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 the 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:**

ON Semiconductor is notifying customers of its use of Copper Wire (in place of Gold Wire) for the SOT563, SOT553, SOT223(Soft Solder), SOD323, SC88, SC89, SOT723, SOD923, SOT963, SOT953 and SOT1123 packages. Discrete products built with bipolar transistor, rectifier, zener diode, MOSFET, schottky diode, and switching diode platforms are represented by this Process Change Notice.

Reliability Qualification and full electrical characterization over temperature has been performed.



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RELIABILITY DATA SUMMARY:

Reliability Test Results:

SOT-223 Soft Solder, 1.5 mils copper wire

BCP68T1G

Test:	Conditions:	Interval:	Results
Precondition	MSL1@ 260°C , 3 X IR at 260°C		0/480
HAST+PC	Ta=+130°C, RH=85%, V= 80% rated	96 hrs	0/240
HTSL	Ta=150°C	1008 hrs	0/240
TC+PC	Ta= -65/150°C	1000 cyc	0/240
SAT			0/30
DPA	Per AECQ101, Post TC+PC 1000cycs		0/6
DPA	Per AECQ101, Post HAST-PC 96hrs		0/6
RSH	Ta=260°C, 10 sec dwell		0/90

SOT-223 Soft Solder, 2.0 mils copper wire

NSS60600MZ4T1G

Test:	Conditions:	Interval:	Results
Precondition	MSL1@ 260°C , 3 X IR at 260°C		0/480
HAST+PC	Ta=+130°C, RH=85%, V= 80% rated	96 hrs	0/240
HTSL	Ta=150°C	1008 hrs	0/240
TC+PC	Ta= -65/150°C	1000 cyc	0/240
SAT			0/30
DPA	Per AECQ101, Post TC+PC 1000cycs		0/6
DPA	Per AECQ101, Post HAST-PC 96hrs		0/6
RSH	Ta=260°C, 10 sec dwell		0/90

SOT563/553

NUP5120X6T1G

Test:	Conditions:	Interval:	Results
HTRB	TA=150°C, 80% Rated Voltage	1008 hrs	0/240
Precondition	MSL1@ 260°C, 3 X IR at 260°C		0/960
Autoclave+PC	Ta=121°C RH=100% ~15 psig	96 hrs	0/240
H3TRB+PC	Ta=85°C RH=85% bias=80% rated V or 100V Max	1008 hrs	0/240
IOL+PC	Ta=25°C, Delta TJ = 100°C, Ton/off = 2 min.	15000 cyc	0/240
TC+PC	Ta= -65°C to 150°C, air to air	1000 cyc	0/240
HTSL	Ta=150°C	1008 hrs	0/240
DPA	Per AECQ101, Post TC 1000cycs		0/6
DPA	Per AECQ101, Post H3TRB 1008hrs		0/6
RSH	Ta=260°C, 10 sec dwell		0/90


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NSBC115EDXV6T1G

Test:	Conditions:	Interval:	Results
HTRB	TA=150C, 80% Rated Voltage	1008 hrs	0/240
Precondition	MSL1@ 260°C, 3 X IR at 260°C		0/960
Autoclave+PC	Ta=121°C RH=100% ~15 psig	96 hrs	0/240
H3TRB+PC	Ta=85°C RH=85% bias=80% rated V or 100V Max	1008 hrs	0/240
IOL+PC	Ta=25°C, Delta TJ = 100°C, Ton/off = 2 min.	15000 cyc	0/240
TC+PC	Ta= -65°C to 150°C, air to air	1000 cyc	0/240
HTSL	Ta=150°C	1008 hrs	0/240
DPA	Per AECQ101, Post TC 1000cycs		0/6
DPA	Per AECQ101, Post H3TRB 1008hrs		0/6
RSH	Ta=260°C, 10 sec dwell		0/90

SC88 and SC88A
MSQA6V1W5T2G

Test:	Conditions:	Interval:	Results
Precondition	MSL1@ 260C , 3 X IR at 260 C		0/480
Autoclave+PC	Ta=121C RH=100% ~15 psig	96 hrs	0/240
TC+PC	Ta= -65 C to 150 C, air to air	1000 cyc	0/240
HTSL	Ta=150C	1008 hrs	0/240
DPA	Per AECQ101, Post TC 1000cycs		0/6
RSH	Ta=260C, 10 sec dwell		0/90

SOD323
MM3Z43VT1G

Test:	Conditions:	Interval:	Results
HTRB	TA=150C, 80% Rated Voltage	1008 hrs	0/240
Precondition	MSL1@ 260C , 3 X IR at 260 C/260 C		0/960
Autoclave+PC	Ta=121C RH=100% ~15 psig	96 hrs	0/240
H3TRB+PC	Ta=85C RH=85% bias=80% rated V or 100V Max	1008 hrs	0/240
IOL+PC	Ta=25C, Delta TJ = 100 C, Ton/off = 2 min.	15000 cyc	0/240
TC+PC	Ta= -65 C to 150 C	1000 cyc	0/240
HTSL	Ta=150C	1008 hrs	0/240
DPA	Per AECQ101, after 1000 cyc TC		0/6
DPA	Per AECQ101, after 1008 hrs H3TRB		0/6
RSH	Ta=260C, 10 sec dwell		0/90


FINAL PRODUCT/PROCESS CHANGE NOTIFICATION #16547
SOT723
DTA114EM3T5G

Test:	Conditions:	Interval:	Results
HTRB	TA=150C,80% Rated Voltage	1008 hrs	0/80
Precondition	MSL1@ 260C , 3 X IR at 260 C		0/320
Autoclave+PC	Ta=121C RH=100% ~15 psig	96 hrs	0/80
H3TRB+PC	Ta=85C RH=85% bias=80% rated V or100V Max	1008 hrs	0/80
IOL+PC	Ta=25C, Delta TJ = 100 C, Ton/off = 2 min.	15000 cyc	0/80
TC+PC	Ta= -65 C to 150 C, air to air	1000 cyc	0/80
DPA	Per AECQ101, Post TC 1000cycs		0/2
DPA	Per AECQ101, Post H3TRB 1008hrs		0/2
RSH	Ta=260C, 10 sec dwell		0/30

ESD7L5.0DT5G

Test:	Conditions:	Interval:	Results
HTRB	TA=150C,80% Rated Voltage	1008 hrs	0/320
Precondition	MSL1@ 260C , 3 X IR at 260 C		0/1280
Autoclave+PC	Ta=121C RH=100% ~15 psig	96 hrs	0/320
H3TRB+PC	Ta=85C RH=85% bias=80% rated V or100V Max	1008 hrs	0/320
IOL+PC	Ta=25C, Delta TJ = 100 C, Ton/off = 2 min.	15000 cyc	0/320
TC+PC	Ta= -65 C to 150 C, air to air	1000 cyc	0/320
HTSL	Ta=150C	1008 hrs	0/240
DPA	Per AECQ101, Post TC 1000cycs		0/8
DPA	Per AECQ101, Post H3TRB 1008hrs		0/8
RSH	Ta=260C, 10 sec dwell		0/120

SOD923
NSR0170P2T5G

Test:	Conditions:	Interval:	Results
HTRB	TA=150C,80% Rated Voltage	1008 hrs	0/160
Precondition	MSL1@ 260C , 3 X IR at 260 C		0/640
Autoclave+PC	Ta=121C RH=100% ~15 psig	96 hrs	0/160
H3TRB+PC	Ta=85C RH=85% bias=80% rated V or100V Max	1008 hrs	0/160
IOL+PC	Ta=25C, Delta TJ = 100 C, Ton/off = 2 min.	15000 cyc	0/160
TC+PC	Ta= -65 C to 150 C, air to air	1000 cyc	0/160
HTSL	Ta=150C	1008 hrs	0/160
DPA	Per AECQ101, Post TC 1000cycs		0/4
DPA	Per AECQ101, Post H3TRB 1008hrs		0/4
RSH	Ta=260C, 10 sec dwell		0/60


FINAL PRODUCT/PROCESS CHANGE NOTIFICATION #16547
ESD9X12ST5G

Test:	Conditions:	Interval:	Results
HTRB	TA=150C,80% Rated Voltage	1008 hrs	0/80
Precondition	MSL1@ 260C , 3 X IR at 260 C		0/320
Autoclave+PC	Ta=121C RH=100% ~15 psig	96 hrs	0/80
H3TRB+PC	Ta=85C RH=85%	1008 hrs	0/80
	bias=80% rated V or100V Max		
IOL+PC	Ta=25C, Delta TJ = 100 C, Ton/off = 2 min.	15000 cyc	0/80
TC+PC	Ta= -65 C to 150 C, air to air	1000 cyc	0/80
HTSL	Ta=150C	1008 hrs	0/80
DPA	Per AECQ101, Post TC 1000cycs		0/2
DPA	Per AECQ101, Post H3TRB 1008hrs		0/2
RSH	Ta=260C, 10 sec dwell		0/30

ESD9L5.0ST5G

Test:	Conditions:	Interval:	Results
HTRB	TA=150C,80% Rated Voltage	1008 hrs	0/240
Precondition	MSL1@ 260C , 3 X IR at 260 C		0/960
Autoclave+PC	Ta=121C RH=100% ~15 psig	96 hrs	0/240
H3TRB+PC	Ta=85C RH=85%	1008 hrs	0/240
	bias=80% rated V or100V Max		
IOL+PC	Ta=25C, Delta TJ = 100 C, Ton/off = 2 min.	15000 cyc	0/240
TC+PC	Ta= -65 C to 150 C, air to air	1000 cyc	0/240
HTSL	Ta=150C	1008 hrs	0/240
DPA	Per AECQ101, Post TC 1000cycs		0/6
DPA	Per AECQ101, Post H3TRB 1008hrs		0/6
RSH	Ta=260C, 10 sec dwell		0/90

SOT-953/963
NSBC115TPDP6T5G

Test:	Conditions:	Interval:	Results
HTRB	TA=150C,80% Rated Voltage	1008 hrs	0/240
Precondition	MSL1@ 260C , 3 X IR at 260 C		0/960
Autoclave+PC	Ta=121C RH=100% ~15 psig	96 hrs	0/240
H3TRB+PC	Ta=85C RH=85%	1008 hrs	0/240
	bias=80% rated V or100V Max		
IOL+PC	Ta=25C, Delta TJ = 100 C, Ton/off = 2 min.	15000 cyc	0/240
TC+PC	Ta= -65 C to 150 C, air to air	1000 cyc	0/240
HTSL	Ta=150C	1008 hrs	0/240
DPA	Per AECQ101, Post TC 1000cycs		0/6
DPA	Per AECQ101, Post H3TRB 1008hrs		0/6
RSH	Ta=260C, 10 sec dwell		0/90


FINAL PRODUCT/PROCESS CHANGE NOTIFICATION #16547
NUP412VP5T5G

Test:	Conditions:	Interval:	Results
HTRB	TA=150C,80% Rated Voltage	1008 hrs	0/240
Precondition	MSL1@ 260C , 3 X IR at 260 C		0/960
Autoclave+PC	Ta=121C RH=100% ~15 psig	96 hrs	0/240
H3TRB+PC	Ta=85C RH=85%	1008 hrs	0/240
	bias=80% rated V or100V Max		
IOL+PC	Ta=25C, Delta TJ = 100 C, Ton/off = 2 min.	15000 cyc	0/240
TC+PC	Ta= -65 C to 150 C, air to air	1000 cyc	0/240
HTSL	Ta=150C	1008 hrs	0/240
DPA	Per AECQ101, Post TC 1000cycs		0/6
DPA	Per AECQ101, Post H3TRB 1008hrs		0/6
RSH	Ta=260C, 10 sec dwell		0/90

NTUD3169CZT5G

Test:	Conditions:	Interval:	Results
HTGB	TA=150°C,100% Rated Voltage	1008 hrs	0/240
HTRB	TA=150°C,80% Rated Voltage	1008 hrs	0/240
Precondition	MSL1@ 260°C , 3 X IR at 260°C		0/960
Autoclave+PC	Ta=121°C RH=100% ~15 psig	96 hrs	0/240
IOL+PC	Ta=25°C, Delta TJ = 100°C, Ton/off = 2 min.	15000 cyc	0/240
TC+PC	Ta= -65 C to 150 C, air to air	1000 cyc	0/240
HAST+PC	Ta=130°C, 85% RH	96 hrs	0/240
HTSL	Ta=150°C	1008 hrs	0/240
DPA	Per AECQ101, Post TC 1000cycs		0/6
DPA	Per AECQ101, Post HAST 96hrs		0/6
RSH	Ta=260°C, 10 sec dwell		0/90

SOT-1123
NST846BF3T5G

Test:	Conditions:	Interval:	Results
HTRB	TA=150C,80% Rated Voltage	1008 hrs	0/240
Precondition	MSL1@ 260C , 3 X IR at 260 C		0/960
Autoclave+PC	Ta=121C RH=100% ~15 psig	96 hrs	0/240
H3TRB+PC	Ta=85C RH=85%	1008 hrs	0/240
	bias=80% rated V or100V Max		
IOL+PC	Ta=25C, Delta TJ = 100 C, Ton/off = 2 min.	15000 cyc	0/240
TC+PC	Ta= -65 C to 150 C, air to air	1000 cyc	0/240
HTSL	Ta=150C	1008 hrs	0/240
DPA	Per AECQ101, Post TC 1000cycs		0/6
DPA	Per AECQ101, Post H3TRB 1008hrs		0/6
RSH	Ta=260C, 10 sec dwell		0/90


FINAL PRODUCT/PROCESS CHANGE NOTIFICATION #16547
ESD11L5.0DT5G

Test:	Conditions:	Interval:	Results
HTRB	TA=150C, 80% Rated Voltage	1008 hrs	0/240
Precondition	MSL1@ 260C , 3 X IR at 260 C		0/960
Autoclave+PC	Ta=121C RH=100% ~15 psig	96 hrs	0/240
H3TRB+PC	Ta=85C RH=85%	1008 hrs	0/240
	bias=80% rated V or 100V Max		
IOL+PC	Ta=25C, Delta TJ = 100 C, Ton/off = 2 min.	15000 cyc	0/240
TC+PC	Ta= -65 C to 150 C, air to air	1000 cyc	0/240
HTSL	Ta=150C	1008 hrs	0/240
DPA	Per AECQ101, Post TC 1000cycs		0/6
DPA	Per AECQ101, Post H3TRB 1008hrs		0/6
RSH	Ta=260C, 10 sec dwell		0/90

SC89
NSS20101JT1G

Test:	Conditions:	Interval:	Results
HTRB	TA=150C, 80% Rated Voltage	1008 hrs	0/240
Precondition	MSL1@ 260C , 3 X IR at 260 C		0/960
Autoclave+PC	Ta=121C RH=100% ~15 psig	96 hrs	0/240
H3TRB+PC	Ta=85C RH=85%	1008 hrs	0/240
	bias=80% rated V or 100V Max		
IOL+PC	Ta=25C, Delta TJ = 100 C, Ton/off = 2 min.	15000 cyc	0/240
TC+PC	Ta= -65 C to 150 C, air to air	1000 cyc	0/240
HTSL	Ta=150C	1008 hrs	0/240
DPA	Per AECQ101, Post TC 1000cycs		0/6
DPA	Per AECQ101, Post H3TRB 1008hrs		0/6
RSH	Ta=260C, 10 sec dwell		0/90

**FINAL PRODUCT/PROCESS CHANGE NOTIFICATION #16547****ELECTRICAL CHARACTERISTIC SUMMARY:**

Datasheet specifications and product electrical performance remain unchanged

Characterization of each qual vehicle device has been performed to the following requirements:

- 1) Three temperature characterization on 30 units from 3 lots
- 2) ESD performance (HBM, MM) on 15 units from 1 lot

ELECTRICAL CHARACTERIZATION RESULTS:

Three temperature characterization and ESD performance meet datasheet specification. Detail of Electrical characterization result is available upon request.

CHANGED PART IDENTIFICATION:

Products assembled with the Copper Wire from the ON Semiconductor facility will have a Finished Goods Date Code 1109, date code marking "3", representing Work Week 09, 2011 or newer.



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List of affected General Parts:

(SOD323, SC88, SC89, SOT723, SOD923, SOT963, SOT953 and SOT1123)

DEVICES		
NSBA114EDP6T5G	NTUD3169CZT5G	NTUD3170NZT5G
NSBA114TDP6T5G	NST3946DP6T5G	NSBA115TF3T5G
NSBA114YDP6T5G	NST847BDP6T5G	NSBA123JF3T5G
NSBA115TDP6T5G	NST847BPDP6T5G	NST3906F3T5G
NSBA123JDP6T5G	NST857BDP6T5G	ESD11A5.0DT5G
NSBA123TDP6T5G	NUP412VP5T5G	ESD11A3.3DT5G
NSBA124EDP6T5G	NUP45V6P5T5G	NSBC143ZF3T5G
NSBA143EDP6T5G	NUP46V8P5T5G	NSBA124EF3T5G
NSBA143ZDP6T5G	NST846BF3T5G	NSBA114TF3T5G
NSBA144EDP6T5G	NST856BF3T5G	NSBA143ZF3T5G
NSBA144WDP6T5G	NSBA144EF3T5G	NST848BF3T5G
NSBC114EDP6T5G	NSBA114EF3T5G	NSD914F3T5G
NSBC114EPDP6T5G	NST857BF3T5G	NSD16F3T5G
NSBC114TDP6T5G	NSBC115TF3T5G	BAT54CXV3T1G
NSBC114YDP6T5G	NSBC114YF3T5G	DTA143TXV3T1
NSBC114YPDP6T5G	NSBA114YF3T5G	DTA144EXV3T1
NSBC115TDP6T5G	NSBC114TF3T5G	NSS20101JT1G
NSBC115TPDP6T5G	NSBC123TF3T5G	NZL5V6AXV3T1G
NSBC123JDP6T5G	NSBC143EF3T5G	NZL6V8AXV3T1G
NSBC123JPDP6T5G	NSBC124EF3T5G	NZL7V5AXV3T1G
NSBC123TDP6T5G	NSBA123TF3T5G	NUP4114UCW1T2G
NSBC124EDP6T5G	NSBA144WF3T5G	ESD9L5.0ST5G
NSBC143EDP6T5G	ESD11L5.0DT5G	ESD9R3.3ST5G
NSBC143ZDP6T5G	NSBC144EF3T5G	ESD9M5.0ST5G
NSBC143ZPDP6T5G	NSBC114EF3T5G	ESD9L3.3ST5G
NSBC144EDP6T5G	NST847BF3T5G	ESD9P5.0ST5G
NSBC144EPDP6T5G	NST3904F3T5G	ESD7L5.0DT5G
NSBC144WDP6T5G	NSBC123JF3T5G	ESD7M5.0DT5G
NST3904DP6T5G	NSBC144WF3T5G	MM3Z36VST1G
NST3906DP6T5G	NSBA143EF3T5G	NTUD3171PZT5G



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(SOT563/553)

DEVICES		
BAS16DXV6T1G	NSBC114EDXV6T1G	NST3904DXV6T1G
BAV70DXV6T5G	NSBC114EDXV6T5G	NST3904DXV6T5G
BC847BPDV6T1G	NSBC114EPDXV6T1G	NST3904DXV6T5H
BC847BPDV6T1H	NSBC114EPDXV6T5G	NST3906DXV6T1G
BC847CDV6T1G	NSBC114TDV6T1G	NST3946DXV6T1G
BC847CDV6T1H	NSBC114TDV6T5G	NST3946DXV6T5G
BC858CDV6T1G	NSBC114YDV6T1G	NSTB1002DXV5T1G
EMC2DXV5T1G	NSBC114YDV6T5G	NSTB1005DXV5T1G
EMC3DXV5T1G	NSBC114YPDV6T1G	NSVB123JPDV6T1G
EMC3DXV5T1H	NSBC114YPDV6T5G	NSVB143TPDV6T1G
EMC3DXV5T5G	NSBC115EDXV6T1G	NSVBC114YDV6T1G
EMC4DXV5T1G	NSBC123JPDV6T1G	NUF2042XV6T1
EMC5DXV5T1G	NSBC123JPDV6T5G	NUF2042XV6T1G
EMD4DXV6T1G	NSBC124EDXV6T1G	NUF2230XV6T1
EMD4DXV6T5G	NSBC124EDXV6T5G	NUF2230XV6T1G
EMD5DXV6T5G	NSBC124EPDXV6T1G	NUP2114UPXV5T1G
EMF18XV6T5G	NSBC124EPDXV6T5G	NUP4012PXV6T1G
EMF5XV6T5G	NSBC143TPDV6T1G	NUP4060AXV6T1G
EMG2DXV5T5G	NSBC143ZDV6T1G	NUP4102XV6T1G
EMT1DXV6T1G	NSBC143ZPDV6T1G	NUP4114UPXV6T1G
EMT1DXV6T5G	NSBC144EDXV6T1G	NUP5120X6T1G
EMX1DXV6T1G	NSBC144EDXV6T5G	NUP5120X6T2G
EMX1DXV6T5G	NSBC144EPDXV6T1G	NZQA5V6AXV5T1G
EMX2DXV6T5G	NSBC144EPDXV6T5G	NZQA5V6XV5T1G
EMZ1DXV6T5G	NSDEMP11XV6T1G	NZQA6V2XV5T1G
NSBA114EDXV6T1G	NSDEMP11XV6T5G	NZQA6V8AXV5T1G
NSBA114YDV6T1G	NSR0320XV6T1G	NZQA6V8AXV5T2G
NSBA115EDXV6T1G	NSR0320XV6T5G	NZQA6V8AXV5T3G
NSBA123JDXV6T5G	NSS12100XV6T1G	NZQA6V8XV5T1G
NSBA144EDXV6T5G	NST30010MXV6T1G	SNST3904DXV6T5G


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(SOT223 Soft Solder)

DEVICES		
BCP68T1G	NSS1C201MZ4T3G	PZT751T1
BSP52T1G	NSS40300MZ4T1G	PZT751T1G
BSP52T3G	NSS40300MZ4T3G	SPZT651T1G
MMJT350T1G	NSS40301MZ4T1G	SPZT751T1G
NJT4030PT1G	NSS40301MZ4T3G	SSVPZT751T1G
NJT4030PT3G	NSS60600MZ4T1G	NJV4030PT1G
NJT4031NT1G	NSS60600MZ4T3G	SBCP68T1G
NJT4031NT3G	NSS60601MZ4T1G	SMMJT350T1G
NSB9435T1G	NSS60601MZ4T3G	NSV9435T1G
NSS1C200MZ4T1G	PZT651T1	NSV40301MZ4T1G
NSS1C200MZ4T3G	PZT651T1G	SBSP52T1G
NSS1C201MZ4T1G	NSS1C201MZ4T3G	NSV40300MZ4T1G



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List of affected Customer Specific Parts:

ST9L5.0ST5G
SMBT1581LT3G
SMBT1587T1G
SZT751T1
SZT751T1G