



## Initial Product/Process Change Notification

Document #: IPCN23663X

Issue Date: 17 Nov 2020

<b>Title of Change:</b>	Qualification of ON Semiconductor ISMF FAB (Malaysia) and transfer of Assembly and Test Site on Small Signal Transistor packages in TO-92 from AUKD (China) to JCET (China).													
<b>Proposed First Ship date:</b>	01 Apr 2021 or earlier if approved by customer													
<b>Contact Information:</b>	Contact your local ON Semiconductor Sales Office or <a href="mailto:Khairil.FK@onsemi.com">Khairil.FK@onsemi.com</a>													
<b>PCN Samples Contact:</b>	Contact your local ON Semiconductor Sales Office or <a href="mailto:PCN.samples@onsemi.com">PCN.samples@onsemi.com</a> . 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.													
<b>Type of Notification:</b>	This is an Initial Product/Process Change Notification (IPCN) sent to customers. An IPCN is an advance notification about an upcoming change and contains general information regarding the change details and devices affected. It also contains the preliminary reliability qualification plan. The completed qualification and characterization data will be included in the Final Product/Process Change Notification (FPCN). This IPCN notification will be followed by a Final Product/Process Change Notification (FPCN) at least 90 days prior to implementation of the change. In case of questions, contact <a href="mailto:PCN.Support@onsemi.com">PCN.Support@onsemi.com</a>													
<b>Marking of Parts/ Traceability of Change:</b>	Customers may receive the parts from JCET once FPCN expired or earlier depending on customer approval. Parts from new assembly and test site can be identified through product marking which follow ON Semiconductor marking format.													
<b>Change Category:</b>	Test Change, Assembly Change, Wafer Fab Change													
<b>Change Sub-Category(s):</b>	Manufacturing Site Transfer													
<b>Sites Affected:</b>														
<b>ON Semiconductor Sites</b>	<b>External Foundry/Subcon Sites</b>													
ON Semiconductor Seremban, Malaysia	AUKD, China													
	JCET, China													
	Phenitex Semiconductor, Japan													
<b>Description and Purpose:</b>														
<p>This IPCN announces the qualification of ON Semiconductor Seremban (Malaysia) as second source and transfer of Assembly and Test Site on Small Signal Transistor packaged in TO-92 from AUKD (China) to JCET (China).</p> <p>This change was resulted from AUKD (China) Assembly and Test site closure. Both new site in ON Semiconductor Seremban and JCET has been an existing qualified manufacturing site for ON Semiconductor which certified with ISO/TS 16949:2009.</p> <p>Products listed in this notification will continue to be Pb-free, Halide free and RoHS compliant. Qualification tests are designed to show that the reliability of the transferred devices will continue to meet or exceed ON Semiconductor standard.</p> <p>Site Change:</p> <table border="1"> <thead> <tr> <th></th> <th>Before Change</th> <th>After Change</th> </tr> </thead> <tbody> <tr> <td>Wafer Fab</td> <td>Phenitex Semiconductor, Japan</td> <td>Phenitex Semiconductor, Japan ON Semiconductor Seremban, Japan</td> </tr> <tr> <td>Assembly Location</td> <td>AUKD, China</td> <td>JCET, China</td> </tr> <tr> <td>Final Test Location</td> <td>AUKD, China</td> <td>JCET, China</td> </tr> </tbody> </table>				Before Change	After Change	Wafer Fab	Phenitex Semiconductor, Japan	Phenitex Semiconductor, Japan ON Semiconductor Seremban, Japan	Assembly Location	AUKD, China	JCET, China	Final Test Location	AUKD, China	JCET, China
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Final Test Location	AUKD, China	JCET, China												



Fab change:

	Before Change	After Change
Front metal type	Al	No change
Back metal type	TiNiAgSn	TiNiAgSn (Phenitex Semiconductor, Japan) Au or TiNiAg (ON Semiconductor Seremban, Japan)

TO92 Piece Part Change :

	Before Change	After Change
LeadFrame	FeAg or CuAg or Bare Cu STAMPED	CuAg STAMPED
Die Attach	Eutectic	Eutectic, Epoxy
Wire	Au wire	No Change
Mold Compound	Changchun EME 2500 D3 or KCC KTM C3030	HHCK EMG-200

TO92 Package Dimension Change :

	Before Change	After Change																								
135AN	No change	No change																								
135AR	No change	No change																								
135AP	<table> <tr> <th>Parameter</th><th>Min</th><th>Max</th></tr> <tr> <td>Lead Length</td><td>13.3mm</td><td>13.7mm</td></tr> </table>	Parameter	Min	Max	Lead Length	13.3mm	13.7mm	<table> <tr> <th>Parameter</th><th>Min</th><th>Max</th></tr> <tr> <td>Lead Length</td><td>13.3mm</td><td>14.2mm</td></tr> </table>	Parameter	Min	Max	Lead Length	13.3mm	14.2mm												
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## Qualification Plan:

QV DEVICE NAME: 2N6520TARMS : 65809, 68580, 71085PACKAGE : TO-92

Test	Specification	Condition	Interval
HTRB	JESD22-A108	Ta= 150°C, 100% max rated V	1000 hrs
HTSL	JESD22-A103	Ta= 150°C	1000 hrs
IOL	MIL-STD-750 (M1037) AEC-Q101	Ta=+25°C, delta Tj=100°C On/off = 2 min	15,000 cyc
TC	JESD22-A104	Ta= -65°C to +150°C	1000 cyc
H3TRB	JESD22-A110	Temp = 85°C, 85% RH, ~ 18.8 psig, bias = 80% of rated V	1000 hrs
uHAST	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	96 hrs
RSH	JESD22- B106	Ta = 265C, 10 sec	
SD	JSTD002	Ta = 245C, 5 sec	

QV DEVICE NAME: KSP42TARMS : 65825, 71117PACKAGE : TO-92

Test	Specification	Condition	Interval
HTRB	JESD22-A108	Ta= 150°C, 100% max rated V	1000 hrs
HTSL	JESD22-A103	Ta= 150°C	1000 hrs
TC	JESD22-A104	Ta= -65°C to +150°C	1000 cyc
H3TRB	JESD22-A110	Temp = 85°C, 85% RH, ~ 18.8 psig, bias = 80% of rated V	1000 hrs

QV DEVICE NAME: KSA1281YTARMS : 65826, 68684PACKAGE : TO-92

Test	Specification	Condition	Interval
HTRB	JESD22-A108	Ta= 150°C, 100% max rated V	1000 hrs
HTSL	JESD22-A103	Ta= 150°C	1000 hrs
IOL	MIL-STD-750 (M1037) AEC-Q101	Ta=+25°C, delta Tj=100°C On/off = 2 min	15,000 cyc
TC	JESD22-A104	Ta= -65°C to +150°C	1000 cyc
HAST	JESD22-A110	130°C, 85% RH, 18.8psig, bias	96 hrs
uHAST	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	96 hrs
RSH	JESD22- B106	Ta = 265C, 10 sec	
SD	JSTD002	Ta = 245C, 5 sec	

QV DEVICE NAME: 2N5401YBU / 2N550TA / MPSA06RARMS : 65976, 71535 / 65810 / 65814PACKAGE : TO-92

Test	Specification	Condition	Interval
HTRB	JESD22-A108	Ta= 150°C, 100% max rated V	1000 hrs
HAST	JESD22-A110	130°C, 85% RH, 18.8psig, bias	96 hrs
H3TRB	JESD22-A110	Temp = 85°C, 85% RH, ~ 18.8 psig, bias = 80% of rated V	1000 hrs

QV DEVICE NAME: BC550CTARMS : 65812, 71130PACKAGE : TO-92

Test	Specification	Condition	Interval
TC	JESD22-A104	Ta= -65°C to +150°C	1000 cyc
H3TRB	JESD22-A110	Temp = 85°C, 85% RH, ~ 18.8 psig, bias = 80% of rated V	1000 hrs
uHAST	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	96 hrs
RSH	JESD22- B106	Ta = 265C, 10 sec	
SD	JSTD002	Ta = 245C, 5 sec	

Estimated date for qualification completion: 1 April 2021

**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
KSC945YBU	2N6520TA, MPSA06RA
BC549CTA	BC550CTA, 2N6520TA, MPSA06RA
BC548BTA	BC550CTA, 2N6520TA, MPSA06RA
BC559BTA	2N5401YBU, 2N5550TA, 2N6520TA
BC548CTA	BC550CTA, 2N6520TA, MPSA06RA
BC556ATA	2N5401YBU, 2N5550TA, 2N6520TA
BC557ATA	2N5401YBU, 2N5550TA, 2N6520TA
BC559CTA	2N5401YBU, 2N5550TA, 2N6520TA
2N5401YBU	2N5401YBU, 2N5550TA, 2N6520TA
2N5401YTA	2N5401YBU, 2N5550TA, 2N6520TA
2N5550TAR	2N6520TA, MPSA06RA, 2N5550TA
2N5550TFR	2N6520TA, MPSA06RA, 2N5550TA
2N5550TA	2N6520TA, MPSA06RA, 2N5550TA
2N5551YTA	2N6520TA, MPSA06RA
2N5551YBU	2N6520TA, MPSA06RA
2N5551TA	2N6520TA, MPSA06RA
2N5551BU	2N6520TA, MPSA06RA
2N5551TFR	2N6520TA, MPSA06RA
2N5551TF	2N6520TA, MPSA06RA
MPSA05RA	2N6520TA, MPSA06RA
MPSA42	KSP42TA
BC547B	BC550CTA, 2N6520TA, MPSA06RA
BC33825TA	2N6520TA, MPSA06RA
KSP92ATA	KSP42TA
2N3906TF	2N5401YBU, 2N5550TA, 2N6520TA, BC550CTA, MPSA06RA
2N3906TAR	2N5401YBU, 2N5550TA, 2N6520TA, BC550CTA, MPSA06RA
2N3904TA	BC550CTA, 2N6520TA, MPSA06RA
2N3904BU	BC550CTA, 2N6520TA, MPSA06RA
2N3904TF	BC550CTA, 2N6520TA, MPSA06RA



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2N3904TFR	BC550CTA, 2N6520TA, MPSA06RA
2N3904TAR	BC550CTA, 2N6520TA, MPSA06RA
MPSA06RA	2N6520TA, MPSA06RA
MPSA06	2N6520TA, MPSA06RA
2N4401BU	2N6520TA, MPSA06RA
2N4401TAR	2N6520TA, MPSA06RA
2N4403TFR	2N5401YBU, 2N5550TA, 2N6520TA
2N4403BU	2N5401YBU, 2N5550TA, 2N6520TA
2N4403TF	2N5401YBU, 2N5550TA, 2N6520TA
2N4403TAR	2N5401YBU, 2N5550TA, 2N6520TA
KSP2907ABU	2N5401YBU, 2N5550TA, 2N6520TA
PN2907ATF	2N5401YBU, 2N5550TA, 2N6520TA
PN2907ATAR	2N5401YBU, 2N5550TA, 2N6520TA
KSP2907ATF	2N5401YBU, 2N5550TA, 2N6520TA
PN2222TA	2N6520TA, MPSA06RA
PN2222TF	2N6520TA, MPSA06RA
PN2907BU	2N5401YBU, 2N5550TA, 2N6520TA
BC32740BU	2N5401YBU, 2N5550TA, 2N6520TA
BC33725TAR	2N6520TA, MPSA06RA
BC33725TFR	2N6520TA, MPSA06RA
BC33725TF	2N6520TA, MPSA06RA
BC33716TA	2N6520TA, MPSA06RA
BC33716BU	2N6520TA, MPSA06RA
BC33716TFR	2N6520TA, MPSA06RA
KSP42BU	KSP42TA
KSP92BU	KSP42TA
KSP42ATA	KSP42TA
KSP43BU	KSP42TA
KSP43TA	KSP42TA
KSP10BU	2N6520TA, MPSA06RA
KSP10TA	2N6520TA, MPSA06RA
BC547CTFR	BC550CTA, 2N6520TA, MPSA06RA
BC547CTA	BC550CTA, 2N6520TA, MPSA06RA
BC547CBU	BC550CTA, 2N6520TA, MPSA06RA



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BC557BTA	2N5401YBU, 2N5550TA, 2N6520TA
BC556BTA	2N5401YBU, 2N5550TA, 2N6520TA
BC556BTF	2N5401YBU, 2N5550TA, 2N6520TA
BC557BTF	2N5401YBU, 2N5550TA, 2N6520TA
BC556BTFR	2N5401YBU, 2N5550TA, 2N6520TA
BC547BTA	BC550CTA, 2N6520TA, MPSA06RA
BC547BTF	BC550CTA, 2N6520TA, MPSA06RA
BC547BBU	BC550CTA, 2N6520TA, MPSA06RA
BC550CBU	BC550CTA, 2N6520TA, MPSA06RA
BC550CTA	BC550CTA, 2N6520TA, MPSA06RA
BC546BTA	BC550CTA, 2N6520TA, MPSA06RA
BC546BTF	BC550CTA, 2N6520TA, MPSA06RA
BC546ABU	BC550CTA, 2N6520TA, MPSA06RA
BC546ATA	BC550CTA, 2N6520TA, MPSA06RA
BC549BTA	BC550CTA, 2N6520TA, MPSA06RA
BC549BTF	BC550CTA, 2N6520TA, MPSA06RA
KSC945CYTA	2N6520TA, MPSA06RA
KSC945YTA	2N6520TA, MPSA06RA
BC546CTA	BC550CTA, 2N6520TA, MPSA06RA
BC547ATA	2N6520TA, MPSA06RA
BC548BU	BC550CTA, 2N6520TA, MPSA06RA
BC556ABU	2N5401YBU, 2N5550TA, 2N6520TA
KSP13TA	2N6520TA, MPSA06RA
KSP13BU	2N6520TA, MPSA06RA
2N3906BU	2N5401YBU, 2N5550TA, 2N6520TA, BC550CTA, MPSA06RA
KSA1281YTA	KSA1281YTA
2N4401TA	2N6520TA, MPSA06RA
2N4401TFR	2N6520TA, MPSA06RA
2N4401TF	2N6520TA, MPSA06RA
2N4403TA	2N5401YBU, 2N5550TA, 2N6520TA
KSP2907ATA	2N5401YBU, 2N5550TA, 2N6520TA
PN2907ATA	2N5401YBU, 2N5550TA, 2N6520TA
PN2907ABU	2N5401YBU, 2N5550TA, 2N6520TA
PN2907ATFR	2N5401YBU, 2N5550TA, 2N6520TA



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KSP2907ACTA	2N5401YBU, 2N5550TA, 2N6520TA
PN2222ATA	2N6520TA, MPSA06RA
KSP2222ATA	2N6520TA, MPSA06RA
PN2222ATFR	2N6520TA, MPSA06RA
KSP2222ABU	2N6520TA, MPSA06RA
PN2222ABU	2N6520TA, MPSA06RA
PN2222ATF	2N6520TA, MPSA06RA
BC32725TA	2N5401YBU, 2N5550TA, 2N6520TA
BC32725BU	2N5401YBU, 2N5550TA, 2N6520TA
BC32740TA	2N5401YBU, 2N5550TA, 2N6520TA
BC33725TA	2N6520TA, MPSA06RA
BC33725BU	2N6520TA, MPSA06RA
BC33740TA	2N6520TA, MPSA06RA
BC33740BU	2N6520TA, MPSA06RA
KSP55TA	2N5401YBU, 2N5550TA, 2N6520TA
BC327BU	2N5401YBU, 2N5550TA, 2N6520TA
KSP42TA	KSP42TA
KSP92TA	KSP42TA
2N6520TA	2N6520TA
2N3906TA	2N5401YBU, 2N5550TA, 2N6520TA, BC550CTA, MPSA06RA
2N3906TFR	2N5401YBU, 2N5550TA, 2N6520TA, BC550CTA, MPSA06RA