ON Semiconductor®

Initial Product/Process Change Notification

Document # : IPCN22586X
Issue Date: 16 January 2019

Title of Change:	Transfer assembly and test of Ultrafast, Planar Schottky and Trench Schottky rectifier products in TO220FP package from ON Semiconductor Vietnam (OSV) to SP Semiconductor & Communication Co., Ltd (SP Semi) with case outline change.
Proposed First Ship date:	1 September 2019
Contact Information:	Contact your local ON Semiconductor Sales Office or <Phuong.Hoang@onsemi.com>
Samples:	*Samples will be available after completion of qualification.* Contact your local ON Semiconductor Sales Office or <PCN.Samples@onsemi.com> 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.
Type of Notification:	This is an Initial Product/Process Change Notification (IPCN) sent to customers. IPCNs are typically issued 30 days prior to the issuance of the Final Change Notice (FPCN). 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 <PCN.Support@onsemi.com>
Change Part Identification:	Products from SP semi will be marked with site code "SP" prior to date code.
Change Category:	☐ Wafer Fab Change ☑ Assembly Change ☑ Test Change ☐ Other _____

Change Sub-Category(s):

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

Sites Affected:	ON Semiconductor Sites: ON Dong Nai Province, Vietnam	External Foundry/Subcon Sites: SP Semiconductor & Communication

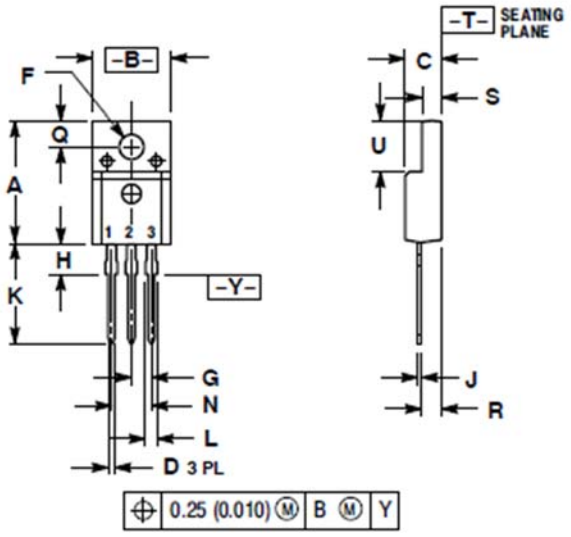
Description and Purpose:

This IPCN announces the plan to transfer assembly and test operations of TO-220FP packaged Mesa Ultrafast, Planar Schottky and Trench Schottky Rectifier products.
The products are currently built at ON Semiconductor Vietnam (OSV). Once completing of qualification and at the expiration of the FPCN, all products listed here will be transferred to SP semi with case outline change.

	Before Change Description	After Change Description
Assembly and Test Site	OSV	SP semi
Case outline	221AH	221D-03
Leadframe	Jih Lin bare copper	Samsung bare copper
Mold Compound	Samsung SG8300HKL	KCC KTMC3097
Site code marking	VN	SP

Comparison between case outline

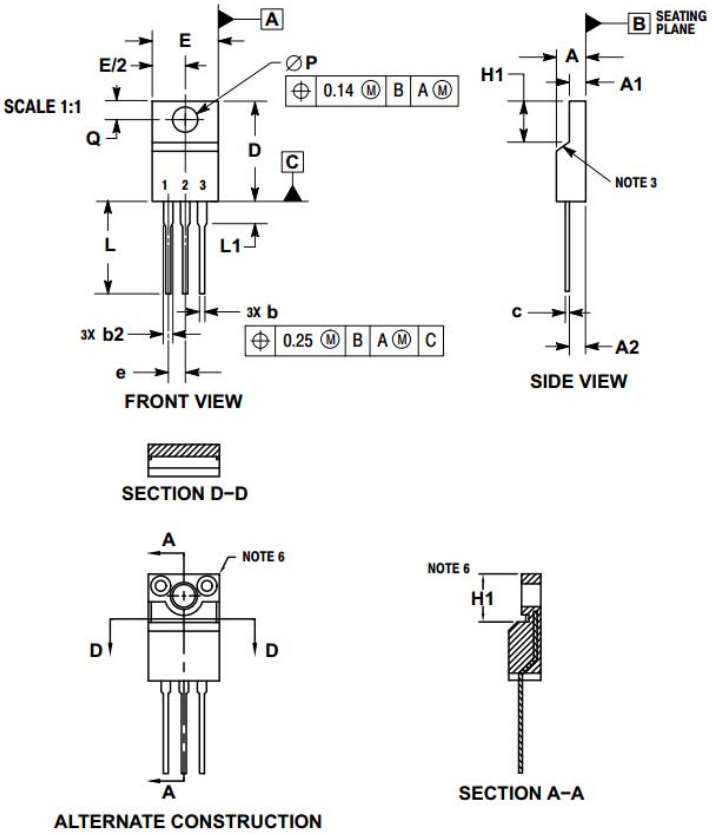
TO−220 FULLPAK
CASE 221D−03(SP Semi)



NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH
3. 221D-01 THRU 221D-02 OBSOLETE, NEW STANDARD 221D-03.

	INCHES		MILLIMETERS	
DIM	MIN	MAX	MIN	MAX
A	0.617	0.635	15.67	16.12
B	0.392	0.419	9.96	10.63
C	0.177	0.193	4.50	4.90
D	0.024	0.039	0.60	1.00
F	0.116	0.129	2.95	3.28
G	0.100 BSC		2.54 BSC	
H	0.118	0.135	3.00	3.43
J	0.018	0.025	0.45	0.63
K	0.503	0.541	12.78	13.73
L	0.048	0.058	1.23	1.47
N	0.200 BSC		5.08 BSC	
Q	0.122	0.138	3.10	3.50
R	0.099	0.117	2.51	2.96
S	0.092	0.113	2.34	2.87
U	0.239	0.271	6.06	6.88

TO−220 FULLPAK
CASE 221AH (OSV)



NOTES:
1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. CONTOUR UNCONTROLLED IN THIS AREA.
4. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH AND GATE PROTRUSIONS. MOLD FLASH AND GATE PROTRUSIONS NOT TO EXCEED 0.13 PER SIDE. THESE DIMENSIONS ARE TO BE MEASURED AT OUTERMOST EXTREME OF THE PLASTIC BODY.
5. DIMENSION b2 DOES NOT INCLUDE DAMBAR PROTRUSION. LEAD WIDTH INCLUDING PROTRUSION SHALL NOT EXCEED 2.00.
6. CONTOURS AND FEATURES OF THE MOLDED PACKAGE BODY MAY VARY WITHIN THE ENVELOP DEFINED BY DIMENSIONS A1 AND H1 FOR MANUFACTURING PURPOSES.

	MILLIMETERS	
DIM	MIN	MAX
A	4.30	4.70
A1	2.50	2.90
A2	2.50	2.90
b	0.54	0.84
b2	1.10	1.40
c	0.49	0.79
D	14.70	15.30
E	9.70	10.30
e	2.54 BSC	
H1	6.60	7.10
L	12.50	14.73
L1	---	2.80
P	3.00	3.40
Q	2.80	3.20

Qualification Plan:

QV DEVICE NAME: MURF1660CTG (Mesa Ultrafast)
PACKAGE: TO220FP

Test	Specification	Condition	Interval
HTRB	JESD22-A108	Ta= 150°C, 80% max rated V	1008 hrs
HTSL	JESD22-A103	Ta= 150°C	1008 hrs
IOL	MIL-STD-750 (M1037) AEC-Q101	Ta= +25°C, delta Tj= 100°C On/off= 3.5 min	8572 cyc
TC	JESD22-A104	Ta= -65°C to +150°C	1000 cyc
H3TRB	JESD22-A101	85°C, 85% RH, bias V = 100V max.	1008 hrs
UHAST	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	96 hrs
RSH	JESD22- B106	Ta= 265°C, 10 sec	
SD	JSTD002	Ta= 245°C, 10 sec	

QV DEVICE NAME: MBRF20200CTG (Planar Schottky)
PACKAGE: TO220FP

Test	Specification	Condition	Interval
HTRB	JESD22-A108	Ta= 90°C, 80% max rated V	1008 hrs
HTSL	JESD22-A103	Ta= 150°C	1008 hrs
IOL	MIL-STD-750 (M1037) AEC-Q101	Ta= +25°C, delta Tj= 100°C On/off= 3.5 min	8572 cyc
TC	JESD22-A104	Ta= -65°C to +150°C	1000 cyc
H3TRB	JESD22-A101	85°C, 85% RH, bias V = 100V max.	1008 hrs
UHAST	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	96 hrs
RSH	JESD22- B106	Ta= 265°C, 10 sec	
SD	JSTD002	Ta= 245°C, 10 sec	

QV DEVICE NAME: NTSJ40120CTG (Trench Schottky)
PACKAGE: TO220FP

Test	Specification	Condition	Interval
HTRB	JESD22-A108	Ta= 85°C, 80% max rated V	1008 hrs
HTSL	JESD22-A103	Ta= 150°C	1008 hrs
IOL	MIL-STD-750 (M1037) AEC-Q101	Ta= +25°C, delta Tj= 100°C On/off= 3.5 min	8572 cyc
TC	JESD22-A104	Ta= -55°C to +150°C	1000 cyc
H3TRB	JESD22-A101	85°C, 85% RH, bias 80% max rated V	1008 hrs
UHAST	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	96 hrs
RSH	JESD22- B106	Ta= 265°C, 10 sec	
SD	JSTD002	Ta= 245°C, 10 sec	

Estimated date for qualification completion: 01 June 2019

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
MURF1620CTG	MURF1660CTG
MURF1660CTG	MURF1660CTG
MURHF860CTG	MURF1660CTG
MBRF10H150CTG	MBRF20200CTG
MBRF10L60CTG	MBRF20200CTG
MBRF20100CTG	MBRF20200CTG
MBRF20200CTG	MBRF20200CTG
MBRF2045CTG	MBRF20200CTG
MBRF2060CTG	MBRF20200CTG
MBRF20H150CTG	MBRF20200CTG
MBRF20L45CTG	MBRF20200CTG
MBRF20L60CTG	MBRF20200CTG
MBRF2545CTG	MBRF20200CTG
MBRF30H100CTG	MBRF20200CTG
MBRF30L45CTG	MBRF20200CTG
MBRF30L60CTG	MBRF20200CTG
MBRF40250TG	MBRF20200CTG
NTSJ20100CTG	NTSJ40120CTG
NTSJ20120CTG	NTSJ40120CTG
NTSJ2080CTG	NTSJ40120CTG
NTSJ30100CTG	NTSJ40120CTG
NTSJ3080CTG	NTSJ40120CTG
NTSJ30U100CTG	NTSJ40120CTG
NTSJ30U80CTG	NTSJ40120CTG
NTSJ40100CTG	NTSJ40120CTG
NTSJ40120CTG	NTSJ40120CTG
NTSJ60100CTG	NTSJ40120CTG
NTSJ20U100CTG	NTSJ40120CTG
NTSJ30120CTG	NTSJ40120CTG

Japanese translation of the notification starts here.

通知の日本語訳はここから始まります。

Note*: The Japanese version is for reference only. In case of any differences between the English and Japanese version, the English version shall control.*

注：日本語版は参照用です。英語版と日本語版の違いがある場合は、英語版が優先されます.

ON Semiconductor®

最終製品 / プロセス変更通知

文書番号# : IPCN22586
発行日 : 16 January 2019

変更件名:	TO220FP パッケージ超高速整流器、プレーナ型ショットキー整流器、トレンチショットキー整流器製品の、ON Semiconductor Vietnam（OSV）から SP Semiconductor＆Communication Co.（SP Semi）への組み立て・テスト拠点移管、およびケース外形の変更
初回出荷予定日:	1 September 2019
連絡先情報:	現地のオン・セミコンダクター営業所または <Phuong.Hoang@onsemi.com> にお問い合わせください。
サンプル:	*サンプルは認定完了後に提供が可能となります。* 現地のオン・セミコンダクター営業所または <PCN.Samples@onsemi.com> にお問い合わせください。 サンプルは、この変更の初回通知、初回 PCN の日付から 30 日以内に要求してください。
通知種別:	これは、お客様宛の初回製品 / プロセス変更通知 (IPCN) です。 IPCN は、通常、最終変更通知 (FPCN) の発行の 30 日前に発行されます。IPCN は、近日中に実施される変更に関する事前通知であり、変更の詳細および影響を受けるデバイスについての一般情報が記載されます。また、暫定的な信頼性認証計画も記載されます。 最終的な認定データおよび特性データは最終製品 / プロセス変更通知 (FPCN) に含まれます。この IPCN は、変更実施から少なくとも 90 日前に発行される最終製品 / プロセス変更通知 (FPCN) に先だって通知されます。ご不明な点がありましたら、<PCN.Support@onsemi.com> にお問い合わせください。
変更部品の識別:	SP semi 製品には、日付コードの前にサイトコード"SP"が捺印されます。
変更カテゴリ:	☐ ウェハファブの変更　☑ アセンブリの変更　☑ 試験の変更　☐ その他 _____

変更サブカテゴリ:

☐ 製造拠点の追加	☑ 材料の変更	☐ データシート/製品資料の変更
☑ 製造拠点の移転	☐ 製品仕様の変更	☑ 出荷/パッケージング/表記
☐ 製造プロセスの変更		☐ その他 : _____

影響を受ける拠点:	オン・セミコンダクター拠点 : ON Dong Nai Province, Vietnam	外部製造工場 / 下請業者拠点 : SP Semiconductor & Communication

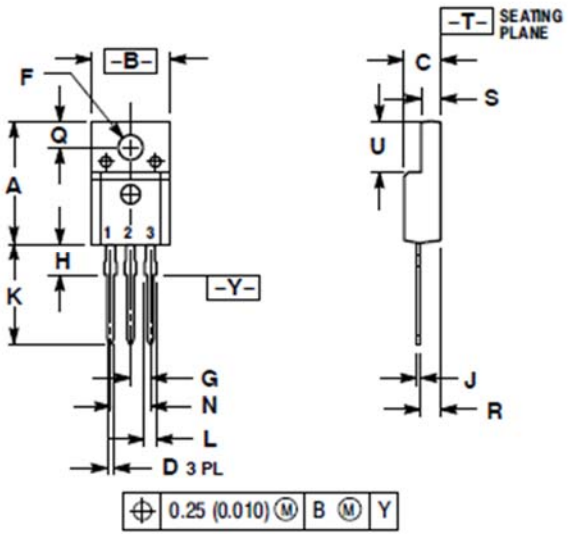
説明および目的:

この IPCN は、TO-220FP パッケージのメサ型超高速整流器、プレーナ型ショットキー整流器およびトレンチショットキー整流器製品の組み立ておよびテスト拠点の移管計画についてお知らせするためのものです。
対象製品は現在 ON Semiconductor Vietnam（OSV）で製造されています。認定が完了し FPCN が実施されると、ここに記載されたすべての製品は SP semi に移管されるとともにケース外形が変更されます。

	変更前の表記	変更後の表記
組み立て拠点	OSV	SP semi
ケース外形	221AH	221D-03
リードフレーム	Jih Lin bare copper	Samsung bare copper
モールド・コンパウンド	Samsung SG8300HKL	KCC KTMC3097
サイトコードマーキング	VN	SP

ケース外形の比較:

TO−220 FULLPAK
CASE 221D−03(SP Semi)



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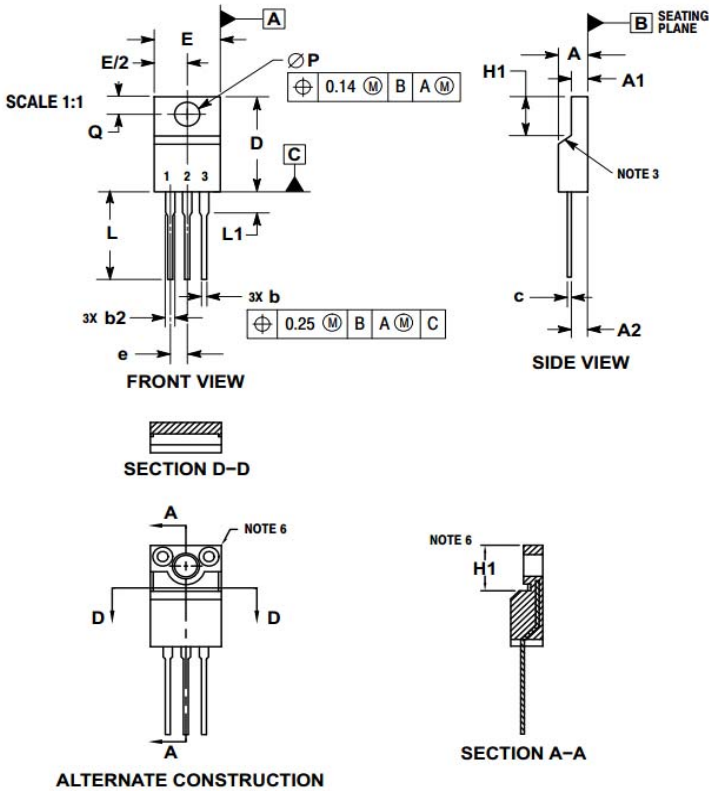
TO−220 FULLPAK
CASE 221AH (OSV)



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b	0.54	0.84
b2	1.10	1.40
c	0.49	0.79
D	14.70	15.30
E	9.70	10.30
e	2.54 BSC	
H1	6.60	7.10
L	12.50	14.73
L1	---	2.80
P	3.00	3.40
Q	2.80	3.20

認定計画:

デバイス名: MURF1660CTG (Mesa Ultrafast)
パッケージ: TO220FP

テスト	仕様	条件	間隔
HTRB	JESD22-A108	Ta= 150°C, 80% max rated V	1008 hrs
HTSL	JESD22-A103	Ta= 150°C	1008 hrs
IOL	MIL-STD-750 (M1037) AEC-Q101	Ta= +25°C, delta Tj= 100°C On/off= 3.5 min	8572 cyc
TC	JESD22-A104	Ta= -65°C to +150°C	1000 cyc
H3TRB	JESD22-A101	85°C, 85% RH, bias V = 100V max.	1008 hrs
UHAST	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	96 hrs
RSH	JESD22- B106	Ta= 265°C, 10 sec	
SD	JSTD002	Ta= 245°C, 10 sec	

デバイス名: MBRF20200CTG (Planar Schottky)
パッケージ: TO220FP

テスト	仕様	条件	間隔
HTRB	JESD22-A108	Ta= 90°C, 80% max rated V	1008 hrs
HTSL	JESD22-A103	Ta= 150°C	1008 hrs
IOL	MIL-STD-750 (M1037) AEC-Q101	Ta= +25°C, delta Tj= 100°C On/off= 3.5 min	8572 cyc
TC	JESD22-A104	Ta= -65°C to +150°C	1000 cyc
H3TRB	JESD22-A101	85°C, 85% RH, bias V = 100V max.	1008 hrs
UHAST	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	96 hrs
RSH	JESD22- B106	Ta= 265°C, 10 sec	
SD	JSTD002	Ta= 245°C, 10 sec	

デバイス名: NTSJ40120CTG (Trench Schottky)
パッケージ: TO220FP

テスト	仕様	条件	間隔
HTRB	JESD22-A108	Ta= 85°C, 80% max rated V	1008 hrs
HTSL	JESD22-A103	Ta= 150°C	1008 hrs
IOL	MIL-STD-750 (M1037) AEC-Q101	Ta= +25°C, delta Tj= 100°C On/off= 3.5 min	8572 cyc
TC	JESD22-A104	Ta= -55°C to +150°C	1000 cyc
H3TRB	JESD22-A101	85°C, 85% RH, bias 80% max rated V	1008 hrs
UHAST	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	96 hrs
RSH	JESD22- B106	Ta= 265°C, 10 sec	
SD	JSTD002	Ta= 245°C, 10 sec	

認定完了予定日 : 1 June 2019

影響を受ける部品の一覧:

注: 部品一覧には標準部品番号 (既製品) のみが記載されています。本 PCN の影響を受けるカスタム部品番号は、PCN メールで提供される顧客個別の付録、または PCN カスタマイズポータルに記載されています。

部品番号	認定試験用ビークル
MURF1620CTG	MURF1660CTG
MURF1660CTG	MURF1660CTG
MURHF860CTG	MURF1660CTG
MBRF10H150CTG	MBRF20200CTG
MBRF10L60CTG	MBRF20200CTG
MBRF20100CTG	MBRF20200CTG
MBRF20200CTG	MBRF20200CTG
MBRF2045CTG	MBRF20200CTG
MBRF2060CTG	MBRF20200CTG
MBRF20H150CTG	MBRF20200CTG
MBRF20L45CTG	MBRF20200CTG
MBRF20L60CTG	MBRF20200CTG
MBRF2545CTG	MBRF20200CTG
MBRF30H100CTG	MBRF20200CTG
MBRF30L45CTG	MBRF20200CTG
MBRF30L60CTG	MBRF20200CTG
MBRF40250TG	MBRF20200CTG
NTSJ20100CTG	NTSJ40120CTG
NTSJ20120CTG	NTSJ40120CTG
NTSJ2080CTG	NTSJ40120CTG
NTSJ30100CTG	NTSJ40120CTG
NTSJ3080CTG	NTSJ40120CTG
NTSJ30U100CTG	NTSJ40120CTG
NTSJ30U80CTG	NTSJ40120CTG
NTSJ40100CTG	NTSJ40120CTG
NTSJ40120CTG	NTSJ40120CTG
NTSJ60100CTG	NTSJ40120CTG
NTSJ20U100CTG	NTSJ40120CTG
NTSJ30120CTG	NTSJ40120CTG

Appendix A: Changed Products

D

Product	Customer Part Number	Qualification Vehicle
MBRF10H150CTG		MBRF20200CTG
MBRF10L60CTG		MBRF20200CTG
MBRF20100CTG		MBRF20200CTG
MBRF20200CTG		MBRF20200CTG
MBRF2045CTG		MBRF20200CTG
MBRF2060CTG		MBRF20200CTG
MBRF20H150CTG		MBRF20200CTG
MBRF20L45CTG		MBRF20200CTG
MBRF20L60CTG		MBRF20200CTG
MBRF2545CTG		MBRF20200CTG
MBRF30H100CTG		MBRF20200CTG
MBRF30L45CTG		MBRF20200CTG
MBRF30L60CTG		MBRF20200CTG
MBRF40250TG		MBRF20200CTG
MURF1620CTG		MURF1660CTG
MURF1660CTG		MURF1660CTG
MURHF860CTG		MURF1660CTG
NTSJ20100CTG		NTSJ40120CTG
NTSJ20120CTG		NTSJ40120CTG
NTSJ2080CTG		NTSJ40120CTG
NTSJ20U100CTG		NTSJ40120CTG
NTSJ30100CTG		NTSJ40120CTG
NTSJ30120CTG		NTSJ40120CTG
NTSJ3080CTG		NTSJ40120CTG
NTSJ30U100CTG		NTSJ40120CTG
NTSJ30U80CTG		NTSJ40120CTG
NTSJ40100CTG		NTSJ40120CTG
NTSJ40120CTG		NTSJ40120CTG