



PRODUCT/PROCESS CHANGE NOTIFICATION
Generic Copy

05-SEP-2001

SUBJECT: ON Semiconductor Product/Process Change Notification #11734

TITLE: Final Notification - Qualification of Assembly and Test Site for TO220FP(Case 221D-02) Products

EFFECTIVE DATE: 06-Nov-2001

AFFECTED CHANGE CATEGORY:

**Subcontractor Assembly Site
ON Semiconductor Assembly Site**

AFFECTED PRODUCT DIVISION: Bipolar Discretes Products Div

ADDITIONAL RELIABILITY DATA: Available

Contact your local ON Semiconductor Sales Office or Terry Franks <RDMM60@onsemi.com>

SAMPLES: Contact your local ON Semiconductor Sales Office or Barbara Matteson <RM2230@onsemi.com>

FOR ANY QUESTIONS CONCERNING THIS NOTIFICATION:

Contact Sales Office or Jose Ramirez <RVEG40@onsemi.com>

DISCLAIMER:

Initial Product/Process Change Notification (IPCN) -First Notification distributed to customers. Distributed at least 120 days from the effective date of the change.

Final Product/Process Change Notification (FPCN) -Final Notification completing the notification process. Distributed at least 60 days from the effective date 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 your local ON Semiconductor Sales Office.

DESCRIPTION AND PURPOSE:

This is in reference to IPCN#11678. As part of our Manufacturing Restructuring Program, ON Semiconductor is qualifying PSi Technologies at Manila, Philippines to Assemble and Test our TO220FP (Case 221D-02) Products. PSi is QS9000 certified and current subcontractor for ON Semiconductor on several other plastic packages and one of the largest Assembly and Test sites in the Asia/Pac region. ON Semiconductor continues to make substantial investments in both new technologies and improved manufacturing capabilities to provide you the highest quality and reliability in the Semiconductor industry. We believe these actions will also improve our ability to serve you better in the future.



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QUALIFICATION PLAN:

*Per AEC-Q101 guidelines.

Test*	Conditions	Exceptions
Parametric verification	Per device specification @ 25DegC	
HTRB	1000 hrs Vcb=80% T=150DegC	
Temp Cycle	1K cycles - 65DegC to 150DegC	
Autoclave	96 hrs RH=100% P=15psi Ta=121DegC	
H3TRB	1000 hrs Vcb=80% RH=85%	
IOL	15K cycles Dtj=100DegC	
D.P.A.	Random H3TRB & IOL samples	
Thermal Resistance		Delta VBE
Die Shear	Pre & Post process change comp.	
Wire Bond Strength	Pre & Post process change comp.	
Wire Bond Shear	Method 3	

Qualification Vehicle Justification:

Family	Qualification Device	Reason Chosen
BIP POWER - NPN Rectifiers	MJF18004 MBRF2060CT	Large Die size, highest voltage Largest Die

RELIABILITY DATA SUMMARY:

MJF18008

Test	Interval	Lot # 1	Lot # 2
HTRB	168 hrs	0/77	0/77
H3TRB	168 hrs	0/77	0/77
Autoclave	96 hrs	0/77	0/77
IOL	4286 cyc	0/77	0/77
Temp Cycle	500 cyc	0/77	0/77

ELECTRICAL CHARACTERISTIC SUMMARY:

Group	Test	IEBO	ICEO	ICES	HFE Ic=1A	HFE Ic=4.5A	HFE Ic=10mA	VBE	VCE
								(sat) Ib=0.9A	(sat) Ib=0.9A
	Cond1				Vce=5V	Vce=1V	Vce=5V	Ib=0.9A	Ib=0.9A
	Cond2	Vbe=9V	Vce=450V	Vce=1000V					
	Limit=	<100uA	<100uA	<100uA	14-34	> 6	> 10	<1.25V	<0.7V
Lot#1	Mean	89nA	298nA	595nA	24.2	10.1	22.3	0.919	0.303
	StDev	8nA	192nA	40nA	0.6	0.4	0.6	0.0015	0.017
	Cpk	4163	173.1	828.4	5.7	3.4	6.8	73.6	7.8
Lot#2	Mean	90nA	1391nA	884nA	23.4	9.6	22.1	0.918	0.317
	StDev	5nA	1923nA	412nA	0.7	0.4	0.7	0.0013	0.015
	Cpk	6661	17.1	80.2	5.0	3.0	5.8	85.1	8.5
Lot#3	Mean	93nA	5981nA	1752nA	23.1	9.3	22.0	0.918	0.327
	StDev	5nA	913nA	198nA	0.4	0.19	0.3	0.0012	0.009
	Cpk	6661	34.3	165.4	9.1	5.8	13.3	92.2	13.8
Control	Mean	97nA	261nA	646nA	25.1	9.4	23.5	0.914	0.355
	StDev	38nA	76nA	213nA	1.6	0.5	2.4	0.002	0.014
	CPK	876	438	156	2.3	2.3	1.9	56	8.2



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CHANGED PART IDENTIFICATION:

Customers may receive Bipolar Power Transistors and Rectifier Products starting with date code 0145.

ADDITIONAL INFORMATION:

Contact(s) at ON Semiconductor :

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Country	USA	France

RELATED NOTIFICATIONS:

INITIAL NOTIFICATION - QUALIFICATION OF ALTERNATE ASSEMBLY/TEST SITES FOR POWER PRODUCTS

AFFECTED DEVICE LIST (WITHOUT SPECIALS):

PART

BUL146F
MBRF20100CT
MBRF20200CT
MBRF2060CT
MBRF2545CT
MJF122
MJF127
MJF15030
MJF15031
MJF18004
MJF18008
MJF2955
MJF3055
MJF31C
MJF32C
MJF44H11
MJF45H11
MJF47
MJF6388
MJF6668
MURF1620CT
MURF1660CT
MURHF860CT