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PRODUCT/PROCESS CHANGE NOTIFICATION
Generic Copy

03-OCT-2000

SUBJECT: ON Semiconductor Update Notification 10277

TITLE: ADDENDUM TO PCN10187-PSI QUAL FOR TO-264, TO-247 AND TO-218

EFFECTIVE DATE: 02-Dec-2000

AFFECTED CHANGE CATEGORY(S):

ON SEMICONDUCTOR ASSEMBLY SITE

AFFECTED PRODUCT DIVISION(S):

MOS POWER PRODUCTS DIV
BIPOLAR DISCRETES PRODUCTS DIV

ADDITIONAL RELIABILITY DATA: None

SAMPLES: No

(SEE ADDITIONAL INFO SECTION)

FOR ANY QUESTIONS CONCERNING THIS NOTIFICATION:
Contact Sales Office (LINDA HAYES, RV8090@onsemi.com)

DISCLAIMER:

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:

Reason for addendum: Provide updates to PCN 10187, originally released June 13, 2000. The reliability results of specific devices shown on page 4 of the original PCN are updated, as well as the addition of 30 more devices that are included in the transfer. Note that TO-218 2-leaded Ultrafast Rectifiers were part of the scope of the originalPCN, but now are excluded due to lack of equipment capacity at PSi (Pacific Semiconductors Industries).

ON Semiconductor is pleased to announce that it has qualified PSi as a qualified manufacturer and tester of the large size plastic packages known as the TO-264, the TO-247, and the TO-218 (a.k.a. SOT93). We currently manufacture the TO-264 in Team Pacific and the TO-247 and TO-218 at ST Microelectronics.

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PSi has been a manufacturer to ON Semiconductor, formerly as a division of Motorola, for more that 20 years, manufacturing the TO-220, D Pak and DD Pak. PSi is a member of the Semiconductor Assembly Council and received the Philippines 1999 Quality Award for Outstanding Quality. The mentioned packages will be manufactured using the same high quality materials on equipment capable of meeting the high quality standards of ON Semiconductor. Devices from PSi can be identified with the Location Identifier CQ preceding the date code. Qualification of the various technologies and packages is in process and in the following cases completed. Qualification includes the AEC Q101 requirements on all MOSFET devices. ON Semiconductor continues to make substantial investments in both new technologies and improved manufacturing capabilities to provide the highest quality and most reliable products in the industry. We believe that these actions will provide the capability to provide a continuous supply of quality devices to you through the future.

Devices included on PCN10187, which expired on September 22, 2000:

MTY100N10E
MTY55N20E
MTY30N50E
MTY20N50E
MTY25N60E
MJL21193
MJL21194
MJL21195
MJL21196
MJL1302A
MJL3281A
MJL16218
MTW32N25E
MTW24N40E
MTW20N50E
MTW7N80E
MTW6N100E
MTW10N100E
MTW16N40E
MTW14N50E
MTW8N60E
STW1019
MTW20N20E
MTW32N20E
MJW21191
MJW21192
TE02549
MBR4045PT
MBR6045PT
MBR3045PT
SBR5571-002
MUR3020PT
MUR3040PT
MUR3060PT
MUR3040PT
MUR3080
MUR6040
TIP2955
TIP3055
TIP33A
TIP33C
TIP36A
TIP36C
BD249C
TIP35A
TIP35C

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MJE4343
MJE4353
BDV65B
TIP140
TIP141
TIP142
MJH10012
MJH6284
MJH6287
MJH11018
MJH11020
MJH11022
MJH11017
MJH11019
MJH11021
BU323AP
TE02390

Additional Devices for this update:

MUR3020WT
MUR3060WT
MBR4015LWT
MBR4045WT
MBR6045WT
MBR7030WT
MTW45N10E
MTW35N15E
MTW8N50E
MJL21196
MBR3045WT
MUR16006A
BDV64B
TIP145
TIP146
TIP147
MTW35N15E
BUV48
MJW18020
BU323Z
SJE2448
MJW16010A
MJW16010
MJW16206
MJW16018
MJW16212
BUS48AP
BUV48A
TE02486
TE02454
TE02570

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QUALIFICATION PLAN:

TEST	CONDITIONS	EXCEPTIONS
H3TRB	Ta=85 deg. C, RH= 85%, 1000 hrs.	
ESD	HBM	
HTRB	Ta=150 deg.C, 1000 hrs.	
IOL	Ta=25 deg.C, delta Tj =>100 deg.C, 5 minutes on/off, 5000 cycles	
Temp Cycle	Air to Air, -65 to 150 deg.C 1000 cycles	
Autoclave	Ta=121 deg. C, RH= 100%, PSIg= 15, 96 hrs.	
HTGB	Ta=150 deg.C, 1000 hrs.	for MOSFET only.

*MOSFET devices were qualifed per AEC-Q-101 guidelines.

QUALIFICATION VEHICLE JUSTIFICATION:

FAMILY	QUAL DEVICE	REASON CHOSEN
TO-264 Bipolar Power	MJL21193	Largest die size, complex PNP device
TO-247 Bipolar Power	MJW21191	Large die size, High Voltage
TO-218 Bipolar Power	MJH16006A	Large die size, High Voltage
TO-264 MOSFET	MTY25N60E	Large die size
TO-247 MOSFET	MTW10N100E	Highest voltage
TO-247 MOSFET	MTW35N15E	Standard equivalent for Automotive
TO-247 Rectifier	MBR7030WT	Largest die, Schottky

RELIABILITY DATA SUMMARY:

DEVICE:MJL21193

TEST DESCRIPTION	Lot 1	Lot 2	Lot 3	Control
H3TRB 1000 hrs.	0/80	0/80	0/80	0/80
ESD	pass	pass	pass	pass
HTRB 1000 hrs.	0/80	0/80	0/80	0/80
IOL 5000 cycles	0/80	0/80	0/80	0/80
Temp Cycle 1000 cycles	0/80	0/80	0/80	0/80
Autoclave 96 hrs.	0/80	0/80	0/80	0/80

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DEVICE:MTW35N15E

TEST DESCRIPTION	Lot 1	Lot 2	Lot 3	Control
H3TRB				
1000 hrs.	0/80	0/80	0/80	0/80
ESD	pass	pass	pass	pass
HTRB				
1000 hrs.	0/80	0/80	0/80	0/80
IOL				
5000 cycles	0/80	0/80	0/80	0/80
Temp Cycle				
1000 cycles	0/80	0/80	0/80	0/80
Autoclave				
96 hrs.	0/80	0/80	0/80	0/80
HTGB				
1000 hrs	0/80	0/80	0/80	0/80

DEVICE:MTW10N100E

TEST DESCRIPTION	Lot 1	Lot 2	Lot 3	Control
H3TRB				
1000 hrs.	0/80	0/80	0/80	0/80
ESD	pass	pass	pass	pass
HTRB				
1000 hrs.	0/80	0/80	0/80	0/80
IOL				
5000 cycles	0/80	0/80	0/80	0/80
Temp Cycle				
1000 cycles	0/80	0/80	0/80	0/80
Autoclave				
96 hrs.	0/80	0/80	0/80	0/80
HTGB				
1000 hrs	0/80	0/80	0/80	0/80

MTY25N60E

TEST DESCRIPTION	Lot 1	Lot 2	Lot 3	Control
H3TRB				
1000 hrs.	0/80	0/80	0/80	0/80
ESD	pass	pass	pass	pass
HTRB				
1000 hrs.	0/80	0/80	0/80	0/80
IOL				
5000 cycles	0/80	0/80	0/80	0/80
Temp Cycle				
1000 cycles	0/80	0/80	0/80	0/80
Autoclave				
96 hrs.	0/80	0/80	0/80	0/80
HTGB				
1000 hrs.	0/80	0/80	0/80	0/80

MUR7030WT

TEST DESCRIPTION	Lot 1	Lot 2	Lot 3	Control
H3TRB				
1000 hrs.	0/80	0/80	0/80	0/80
ESD	pass	pass	pass	pass
HTRB				
1000 hrs.	0/80	0/80	0/80	0/80
IOL				
5000 cycles	0/80	0/80	0/80	0/80
Temp Cycle				
1000 cycles	0/80	0/80	0/80	0/80
Autoclave				
96 hrs.	0/80	0/80	0/80	0/80

Remaining Qualifications in process and expected completion dates:

TO-247	Bipolar	MJW21191	Dec. 19, 2000
TO-218	Bipolar	MJH16006A	Oct. 14, 2000

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CHANGED PART IDENTIFICATION:

Devices from PSi can be identified with the assembly location CQ preceding the date code. Devices from Team Pacific will have the location code CX preceding the date code and ST Microelectronics devices have assembly code location DE.

The packages from PSi are all within the industry standard JEDEC outline.
In the case of the TO-247 the body of the package is identical, but the
lead length is .220" longer and the lead thickness is .003" thicker at
PSi than the current factory. The dimensions for the other two packages
are identical. The shipping tubes for the TO-247 are also slightly different dimensionally, They have a thinner but longer profile (.306"x1.81") than the current suppliers tubes (.470"x1.55). The tubes
for the other packages are similarly dimensioned.

ADDITIONAL INFORMATION:

For more information, you can contact the following -

TECHNOLOGY	NAME	EMAIL	PHONE
Rectifier	Kevin Kellar	kevin.kellar@onsemi.coom	602-244-4983
Bipolar	Jose Ramirez	jose.l.ramirez@onsemi.com	602-244-4819
MOSFET	Catherine Chandioux	c.chandioux@onsemi.com	33-5611-999-21

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AFFECTED DEVICE LIST:

PART

BDV64B
BU323Z
BUS48AP
BUV48
BUV48A
MBR3045WT
MBR4015LWT
MBR4045WT
MBR6045WT
MBR7030WT
MJL21196
MJW16010
MJW16010A
MJW16012
MJW16018
MJW16206
MJW16212
MJW18020
MTW35N15E
MTW45N10E
MTW8N50E
MUR3020WT
MUR3060WT
TE02570
TIP145
TIP146
TIP147