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**UPDATE NOTIFICATION**  
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**31-AUG-2001**

**SUBJECT: ON Semiconductor Update Notification #11696**

**TITLE: 2<sup>nd</sup> Update to 10570: Non Active Area Die Shrink for Schottky Rectifiers**

**EFFECTIVE DATE: 01-Feb-2002**

**AFFECTED CHANGE CATEGORY: Die Shrink**

**AFFECTED PRODUCT DIVISION(S): Bipolar Discretes Products Div**

**ADDITIONAL RELIABILITY DATA:** Available

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

**SAMPLES:** Contact Below

Contact your local ON Semiconductor Sales Office or Kevin Keller <RD9130@onsemi.com>

**FOR ANY QUESTIONS CONCERNING THIS NOTIFICATION:**

Contact Sales Office or Mark Wasilewski <RYGF20@onsemi.com>

**DISCLAIMER:**

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

Final Product/Process Change Notification (FPCEN) -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 notice is an addendum to PCN 10570. For all Schottky rectifiers in the SOD123, DPAK, D2PAK, TO-218, TO-247, TO-220 and TO-220 Fulpak, implementation of PCN 10570 has been delayed. The new effective date is 01 February 2002.

ON Semiconductor has qualified the process to reduce the non-active area of die used in Schottky rectifier devices. Only non-active regions have been reduced. Thus, as proven through rigorous testing, the device performance and reliability is not affected. This change will allow ON Semiconductor to meet the increasing demand for our Schottky rectifier product.



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**QUALIFICATION PLAN:**

<b>Test</b>	<b>Conditions</b>	<b>Exceptions</b>
H3TRB	Tj= Max rated Tj, RH= 85%, 1000 hrs.	
ESD	HBM	
HTRB	Tj=Max rated Tj, 1000 hrs.	
IOL	Ta=25 deg. C, delta Tj =>100 deg. C,	
Temp Cyc	Air to Air, -65 to 150 deg. C 1000 cycles	
Autoclave	Ta=121 deg. C, RH= 100%, PSIg= 15, 96 hrs.	
Parametric Verification	Tri Temp	

**Qualification Vehicle Justification**

<b>Family / Package</b>	<b>Qualification Device</b>	<b>Reason Chosen</b>
D2PAK/TO220	MBRB20100CT (DR0943G)	Highest Voltage (100V)
DPAK	MBRD660CT (DR0944G)	Highest Voltage (60V)
TO218 / TO247	MBR3045PT (DR0947G)	Highest Voltage (45V)
SOD123	MBR0540T3 (DR0972G)	Highest Voltage (40V)

**RELIABILITY DATA SUMMARY:**

Reliability Tests and Results:

D2PAK/TO220 MBRB20100CT (DR0943G)

Test Description	Lot 1	Lot 2	Lot 3
H3TRB 1000 hrs.	0/80	0/80	0/80
ESD HBM	*	*	*
HTRB 1000 hrs.	0/80	0/80	0/80
IOL 10000 cycles	0/80	0/80	0/80
Temp Cycle 1000 cycles	0/80	0/80	0/80
Autoclave 96 hrs.	0/80	0/80	0/80

\*-ESD data to become available 2/1/01

Full Reliability report available on 2/1/01.

Remaining Qualifications in process and expected completion dates:

Family / Package	Qualification Device	Expected Completion
DPAK	MBRD660CT (DR0944G)	2/01/02
TO218 / TO247	MBR3045PT (DR0947G)	2/01/02
SOD123	MBR0540T3 (DR0972G)	2/01/02

Full reliability reports and parametric data will be available upon request after the Expected Completion dates listed above.

PHYSICAL DIMENSIONS: There will be no difference in the external physical dimensions.

Reliability Testing Conclusions: All product will meet or exceed ON Semiconductor Quality Standards



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**ELECTRICAL CHARACTERISTIC SUMMARY:**  
D2PAK/TO220 MBRB20100CT (DR0943G)

Ir @ 100V (upper spec limit: 100uA)

	Lot 1	Lot 2	Lot 3	Control
Minimum	0.89	0.84	0.85	1.00
Maximum	25.00	30.00	61.00	58.00
Average	2.41	1.86	2.58	3.28
Std Dev.	3.58	4.01	7.82	9.08
CPK	3.58	3.60	3.57	3.55

Vf @ 10A (upper spec limit: 850mV)

	Lot 1	Lot 2	Lot 3	Control
Minimum	749	752	750	746
Maximum	759	759	759	754
Average	755	755	755	750
Std Dev.	2.11	1.60	1.36	1.75
CPK	15.01	19.79	23.28	19.05

Vf @ 20A (upper spec limit: 950mV)

	Lot 1	Lot 2	Lot 3	Control
Minimum	840	843	845	837
Maximum	850	849	851	841
Average	845	846	848	839
Std Dev.	2.45	1.34	1.20	1.17
CPK	14.29	25.87	28.33	31.62

**ADDITIONAL INFORMATION:**

Sample Availability and Earliest Shipments

Family/Package	Samples Available after	Shipment Starting after
D2PAK/TO220	12/01/01	2/01/02
DPAK	12/01/01	2/01/02
TO218 / TO247	12/01/01	2/01/02
SOD123	12/01/01	2/01/02

**CHANGED PART IDENTIFICATION:**

Changed part ID will be by date code which will be various for each device.

**AFFECTED DEVICE LIST (WITHOUT SPECIALS)**

- PART**
- 1C5822WP
- DEVICE1
- MBR0520LT1
- MBR0520LT3
- MBR0530T1
- MBR0530T3

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MBR0540T1  
MBR0540T3  
MBR10100  
MBR1035  
MBR1045  
MBR1060  
MBR1080  
MBR1090  
MBR130T1  
MBR130T3  
MBR1535CT  
MBR1545CT  
MBR1545CTP  
MBR16100CT  
MBR1635  
MBR1645  
MBR20100CT  
MBR20100CTP  
MBR20200CT  
MBR20200CTP  
MBR2030CTL  
MBR2045CT  
MBR2045CTP  
MBR2060CT  
MBR2080CT  
MBR2090CT  
MBR2515L  
MBR2535CT  
MBR2535CTL  
MBR2545CT  
MBR2545CTP  
MBR3045PT  
MBR3045ST  
MBR3045WT  
MBR4015CTL  
MBR4015LWT  
MBR4045PT  
MBR4045WT  
MBR5025L  
MBR6045PT  
MBR6045WT  
MBR7030WT  
MBR735  
MBR745  
MBRB1045  
MBRB1045T4  
MBRB1545CT  
MBRB1545CTT4  
MBRB20100CT  
MBRB20100CTT4  
MBRB20200CT  
MBRB20200CTT4  
MBRB2060CT  
MBRB2060CTT4  
MBRB2515L  
MBRB2515LT4

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MBRB2535CTL  
MBRB2535CTLT4  
MBRB2545CT  
MBRB2545CTT4  
MBRB3030CT  
MBRB3030CTL  
MBRB3030CTLT4  
MBRB3030CTT4  
MBRB4030  
MBRB4030T4  
MBRC1045WP  
MBRC1060WP  
MBRC1645WP  
MBRC20100CTWP  
MBRC20200CTWP  
MBRC2535CTLWP  
MBRC835L  
MBRC835LWP  
MBRC929  
MBRD1035CTL  
MBRD1035CTLT4  
MBRD320  
MBRD320RL  
MBRD320T4  
MBRD330  
MBRD330RL  
MBRD330T4  
MBRD340  
MBRD340RL  
MBRD340T4  
MBRD350  
MBRD350RL  
MBRD350T4  
MBRD360  
MBRD360RL  
MBRD360T4  
MBRD620CTT4  
MBRD630CTT4  
MBRD640CT  
MBRD640CTT4  
MBRD650CT  
MBRD650CT1  
MBRD650CTT4  
MBRD660CT  
MBRD660CTRL  
MBRD660CTT4  
MBRD835L  
MBRD835LT4  
SBR5571-002  
SBR80520LT1  
SBR80520LT3  
SBR81045  
SBRB1545CT  
SBRB20100CT  
SBRB20100CTT4  
SBRB20200CT



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SBRB20200CTT4  
SBRB2060CT  
SBRB2060CTT4  
SBRB2515L  
SBRB2515LT4  
SBRB2535CTL  
SBRB2535CTLT4  
SBRB2545CT  
SBRB2545CTT4  
SBRB3030CT  
SBRB3030CTL  
SBRB3030CTLT4  
SBRB3030CTT4  
SBRB4030  
SBRB4030T4  
SBRD81035CTLT4  
SBRD8340T4  
SBRD8360T4  
SBRD8835LT4  
TBRAC1645PF  
XBRD3100