



PRODUCT / PROCESS CHANGE NOTIFICATION
Generic Copy

22-JAN-2001

SUBJECT: Product/Process Change Notification #10570

TITLE: Non Active Area Die Shrink for Schottky Rectifiers

EFFECTIVE DATE: 02-May-2001

AFFECTED CHANGE CATEGORY : Die Shrink

AFFECTED PRODUCT DIVISION: Bipolar Discrete Products Division

ADDITIONAL RELIABILITY DATA: Available
Contact your local ON Semiconductor Sales Office.
or Jack Helzer <RLHL40@onsemi.com>

SAMPLES: Contact Below
Contact your local ON Semiconductor Sales Office.
or Bob Cook <R13943@onsemi.com>

FOR ANY QUESTIONS CONCERNING THIS NOTIFICATION:
Contact Sales Office or Bob Cook <R13943@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:

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 allows ON Semiconductor to meet the increasing demand for our Schottky Rectifier products.



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QUALIFICATION PLAN:

Test	Conditions	Exceptions
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 Tri Temp

Qualification Vehicle Justification

Family / Package	Qualification Device	Reason Chosen
D2PAK/TO220	MBRB20100CT (DR0943G)	Highest Voltage (100V)
DPAK	MBRD660CT (DR0944G)	Highest Voltage (60V)
Powermite	MBRM140T3 (DR0954G)	Highest Voltage (40V)
SMC	MBRS360T3 (DR0965GS)	Highest Voltage (60V)
1A Surmetic(axial)	MBR1100 (DR0966G)	Highest Voltage (100V)
3A Surmetic(axial)	MBR3100 (DR0968G)	Highest Voltage (100V)
SMB/SMA	MBRS1100T3 (DR0966GS)	Highest Voltage (100V)
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)	3/27/01
Powermite	MBRM140T3 (DR0954G)	3/27/01
SMC	MBRS360T3 (DR0965GS)	3/27/01
1A Surmetic (axial)	MBR1100 (DR0966G)	4/10/01
3A Surmetic (axial)	MBR3100 (DR0968G)	4/10/01
SMB/SMA	MBRS1100T3 (DR0966GS)	4/10/01
TO218 / TO247	MBR3045PT (DR0947G)	4/10/01
SOD123	MBR0540T3 (DR0972G)	6/01/01

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



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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.

ELECTRICAL CHARACTERISTIC SUMMARY:

D2PAK/TO220 MBRB20100CT (DR0943G)

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

	<u>Lot 1</u>	<u>Lot 2</u>	<u>Lot 3</u>	<u>Control</u>
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)

	<u>Lot 1</u>	<u>Lot 2</u>	<u>Lot 3</u>	<u>Control</u>
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)

	<u>Lot 1</u>	<u>Lot 2</u>	<u>Lot 3</u>	<u>Control</u>
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

CHANGED PART IDENTIFICATION :

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

ADDITIONAL INFORMATION :

Sample Availability and Earliest Shipments

<u>Family/Package</u>	<u>Samples Available after</u>	<u>Shipment Starting after</u>
D2PAK/TO22	3/12/01	4/21/01
DPAK	3/12/01	4/21/01
Powermite	3/12/01	4/21/01
SMC	3/12/01	4/21/01
1A Surmetic (axial)	3/12/01	4/21/01
3A Surmetic (axial)	3/12/01	4/21/01
SMB/SMA	3/12/01	4/21/01
TO218 / TO247	3/12/01	4/21/01
SOD123	3/12/01	4/21/01



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AFFECTED DEVICE LIST:

PART

1N5817
1N5817RL
1N5818
1N5818RL
1N5819
1N5819RL
1N5820
1N5820RL
1N5821
1N5821RL
1N5822
1N5822RL
DEVICE1
ENGRSAMPABB
MBR0520LT1
MBR0520LT3
MBR0530T1
MBR0530T3
MBR0540T1
MBR0540T3
MBR10100
MBR1035
MBR1045
MBR1060
MBR1080
MBR1090
MBR1100
MBR1100RL
MBR130P
MBR130PRL
MBR130T1
MBR130T3
MBR140PRL
MBR150
MBR150RL
MBR1535CT
MBR1545CT
MBR1545CTP
MBR160
MBR160RL
MBR16100CT
MBR1635
MBR1645
MBR20100CT
MBR20100CTP
MBR20200CT
MBR20200CTP
MBR2030CTL
MBR2045CT
MBR2045CTP
MBR2060CT
MBR2080CT



MBR2090CT
MBR2515L
MBR2535CT
MBR2535CTL
MBR2545CT
MBR2545CTP
MBR3045PT
MBR3045ST
MBR3045WT
MBR3100
MBR3100RL
MBR340
MBR340P
MBR340PRL
MBR340RL
MBR350
MBR350RL
MBR360
MBR360RL
MBR4015CTL
MBR4015LWT
MBR4045PT
MBR4045WT
MBR5025L
MBR6045PT
MBR6045WT
MBR7030WT
MBR735
MBR745
MBRA130LT3
MBRA140T3
MBRB1045
MBRB1045T4
MBRB1545CT
MBRB1545CTT4
MBRB20100CT
MBRB20100CTT4
MBRB20200CT
MBRB20200CTT4
MBRB2060CT
MBRB2060CTT4
MBRB2515L
MBRB2515LT4
MBRB2535CTL
MBRB2535CTLT4
MBRB2545CT
MBRB2545CTT4
MBRB3030CT
MBRB3030CTL
MBRB3030CTLT4
MBRB3030CTT4
MBRB4030
MBRB4030T4
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
MBRF20100CT
MBRF20200CT
MBRF2060CT
MBRF2545CT
MBRM120ET3
MBRM120LT3
MBRM130LT3
MBRM140T3
MBRS1100T3
MBRS120-1T3
MBRS120T3
MBRS130-1T3
MBRS130LT3
MBRS130T3
MBRS140-1T3
MBRS140LT3
MBRS140T3
MBRS1540HT3
MBRS1540T3
MBRS190T3
MBRS2040LT3
MBRS230LT3
MBRS240LT3
MBRS320T3
MBRS330T3
MBRS340T3
MBRS360T3
SBR5571-002
SBR80520LT1
SBR80520LT3
SBR81045
SBRB1545CT
SBRB20100CT
SBRB20100CTT4



SBRB20200CT
SBRB20200CTT4
SBRB2060CT
SBRB2060CTT4
SBRB2515L
SBRB2515LT4
SBRB2535CTL
SBRB2535CTLT4
SBRB2545CT
SBRB2545CTT4
SBRB3030CT
SBRB3030CTL
SBRB3030CTLT4
SBRB3030CTT4
SBRB4030
SBRB4030T4
SBRD81035CTLT4
SBRD8340T4
SBRD8360T4
SBRD8835LT4
SBR5652T3
SBR81100T3
SBR8120T3
SBR8130LT3
SBR8130T3
SBR8140T3
SBR8340T3
XAMPB100
XBRD3100