ON Semiconductor

FINAL PRODUCT/PROCESS CHANGE NOTIFICATION #16630

Generic Copy

Issue Date: 09-May-2011

TITLE: Dual source LM317 and NCV317 in EPI44 and ON50 Process Technology

PROPOSED FIRST SHIP DATE: 09-Aug-2011

AFFECTED CHANGE CATEGORY(S): Wafer Fab Process

FOR ANY QUESTIONS CONCERNING THIS NOTIFICATION:
Contact your local ON Semiconductor Sales Office or <Jaroslav.Supina@onsemi.com>

SAMPLES: Contact your local ON Semiconductor Sales Office

ADDITIONAL RELIABILITY DATA: Available
Contact your local ON Semiconductor Sales Office or <Tomas.Vajter@onsemi.com>

NOTIFICATION TYPE:

Final Product/Process Change Notification (FPCN)

Final change notification sent to customers. FPCNs are issued at least 90 days prior to implementation 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 <quality@onsemi.com>.

DESCRIPTION AND PURPOSE:

This is a Final PCN to notify customers of the qualification of LM317 and NCV317 product families in the ON50 wafer fabrication process technology. ON50 is the latest ON Semiconductor bipolar technology and is located in the existing wafer fab facilities at ON Semiconductor Roznov, Czech Republic. The ON50 process line will become the primary die source of these products in order to increase the potential capacity for these product lines.

Full electrical characterization and bench analyses have been completed to ensure that datasheet electrical specifications are met if not exceeded. The device functionalities are the same as the original EPI44 technology die source. The EPI44 technology will continue to be utilized as a secondary die preference for the affected part numbers listed below based on capacity requirements.

This change also represents an active area change due to the change in technology so it is recommended that customers evaluate product in their specific applications.

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RELIABILITY DATA SUMMARY:

TO220 3leads

Device	LM/NCV317BTG	Wafer Fab Site	ON Semiconductor, CZ4
Package	TO-220 3 LEADS SINGLE GAUGE PB FREE	Assembly Site	ON Semiconductor, SBN
MSL Level	NA	Final Test Site	ON Semiconductor, SBN
Technology	ON50		
Final Lead Finish	Pb free		

#	Test	Name	Test Conditions	End Point Req's	Test Results	(rej/ ss)	(rej/ ss)
					Read Point	Lot A	Lot B
1	Prep	Sample preparation and initial part testing	Various	---	Initial Electrical	done	done
B1	HTOL	High Temp Operating Life Test	TA=125°C	c = 0, 25°C & 150°C	504hrs.	0/80	0/80
					1008hrs.	0/80	0/80
B2	ELFR	Early Life Failure Rate	TA = 125°C	c = 0, 25°C & 150°C	**48hrs.**	0/800	0/800
A2	HAST	High Accelerated Stress Test	TA= +130C, RH = 85%, PSIG= 18.8, bias	c = 0, 25°C & 150°C	**96hrs.**	0/80	0/80
A3	AC	Autoclave	TA = 121 C, RH = 100%,PSIG = 15	c = 0, 25°C	**96hrs.**	0/80	
A4	TC	Temperature Cycles	-65/+150 C	c = 0, 25°C & 150°C	**500cyc**	0/80	
C2	BPS	Bond Pull Strength	Cond C.	Min Cpk 1.33	Results	Cpk>1.33	
E2	ESD	Electro-static Discharge	Human Body Model (HBM)	25°C & 150°C	Results	5kV	
E2	ESD	Electro-static Discharge	Machine Model (MM)	25°C & 150°C	Results	400V	
E3	ESD	Electro-static Discharge	Charge Device Model (CDM)	25°C & 150°C	Results	1500V	
E4	LU	Latch-up	Class II (25°C & 150°C)	25°C & 150°C	Results	LU+>100mA LU->100mA	
E5	ED	Electrical Distribution	-55°C, -40°C, -5°C, 25°C, 125°C, 150°C	NA	Results	Cpk>1.67	Cpk>1.67

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D2PAK 3leads

Device	LM/NCV317BD2TR4G	Wafer Fab Site	ON Semiconductor, CZ4
Package	D2PAK 3 LEADS PB FREE	Assembly Site	ON Semiconductor, SBN
MSL Level	1	Final Test Site	ON Semiconductor, SBN
Technology	ON50		
Final Lead Finish	Pb free		

#	Test	Name	Test Conditions	End Point Req's	Test Results	(rej/ ss)	(rej/ ss)	(rej/ ss)
					Read Point	Lot C	Lot D	Lot E
1	Prep	Sample preparation and initial part testing	Various	---	Initial Electrical	done	done	done
B1	HTOL	High Temp Operating Life Test	TA=125°C	c = 0, 25°C & 150°C	504hrs.		0/80	
					1008hrs.		0/80	
A6	HTSL	High Temp Storage Life	150°C for 1008 hours	c = 0, 25°C & 150°C	504hrs.		0/80	
					1008hrs.		0/80	
A1	PC	MSL1 Preconditioning	3 IR @ 245 deg C	c = 0, 25°C & 150°C		0/250	0/250	0/250
	SAT	Scanning Acoustic Tomography	Compare for Delamination before and after PC	Compare to existing data	**Results**	Done	Done	Done
A2	PC - HAST	Precond. - High Accelerated Stress Test	TA= +130C, RH = 85%, PSIG= 18.8, bias	c = 0, 25°C & 150°C	**96hrs.**	0/80	0/80	0/80
A3	PC - AC	Precond. - Autoclave	TA = 121 C, RH = 100%,PSIG = 15	c = 0, 25°C	**96hrs.**	0/80	0/80	0/80
A4	PC - TC	Precond. - Temperature Cycles	-65/+150 C	c = 0, 25°C & 150°C	**500cyc**	0/80	0/80	0/80
C2	BPS	Bond Pull Strength	Cond C.	Min Cpk 1.33	Results	done	done	done
E5	ED	Electrical Distribution	-55°C, -40°C, -5°C, 25°C, 125°C, 150°C	NA	Results		Cpk>1.67	

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ELECTRICAL CHARACTERISTIC SUMMARY:

No changes in electrical characteristics. All electrical performance meets the current datasheet specifications.

CHANGED PART IDENTIFICATION:

Parts with date code of WW44-2011 or greater may be sourced from either die technology line. Standard manufacturing traceability will apply.

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List of affected General Parts:

PART
LM317BTG
LM317TG
LM317BD2TG
LM317BD2TR4G
LM317D2TG
LM317D2TR4G
LMW317
SCD317BTG