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**FINAL PRODUCT/PROCESS CHANGE NOTIFICATION**Generic Copy

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**08 Dec 2009****SUBJECT:** ON Semiconductor Final Product/Process Change Notification #16378**TITLE:** Specification Update for SCY99090SNT1G**PROPOSED FIRST SHIP DATE:** 30 Jan 2010**AFFECTED CHANGE CATEGORY(S):** Product Specification**AFFECTED PRODUCT DIVISION(S):** Computing and Consumer Product Group**FOR ANY QUESTIONS CONCERNING THIS NOTIFICATION:**Contact your local ON Semiconductor Sales Office or Todd Manes <[todd.manes@onsemi.com](mailto:todd.manes@onsemi.com)>**SAMPLES:** Contact your local ON Semiconductor Sales Office**ADDITIONAL RELIABILITY DATA:** AvailableContact your local ON Semiconductor Sales Office or Todd Manes <[todd.manes@onsemi.com](mailto:todd.manes@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 your local ON Semiconductor Sales Office.

**DESCRIPTION AND PURPOSE:**

ON Semiconductor is pleased to provide an updated specification for the SCY99090SNT1G device. The specification has been updated to reflect the customer's usage conditions. The newly guaranteed electrical performance is shown in Table 1 below.

Typical performance curves have been updated to reflect the performance at the customer's usage conditions.

The specification updates will be incorporated in production Final Test starting WW04 2010.


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**Table 1: Specification Updates**
**SCY99090**

**ELECTRICAL CHARACTERISTICS** (Typical values are referenced to  $T_A = +25^\circ\text{C}$ , Min and Max values are referenced  $-40^\circ\text{C}$  to  $+85^\circ\text{C}$  ambient temperature, unless otherwise noted, operating conditions  $V_{IN} = 5.0\text{ V}$ ,  $V_{OUT} = 3.314\text{ V}$ , unless otherwise noted.)

Rating	Conditions	Symbol	Min	Typ	Max	Unit
<b>INPUT VOLTAGE</b>						
Input Voltage Range		$V_{IN}$	4.2	–	5.5	V
Quiescent Current	No Switching, No load	$I_Q$	–	28	39	$\mu\text{A}$
Standby Current	EN Low	$I_{STB}$	–	0.3	1.0	$\mu\text{A}$
Under Voltage Lockout	$V_{IN}$ Falling	$V_{UVLO}$	2.2	2.4	2.55	V
Under Voltage Hysteresis		$V_{UVLOH}$	–	100	–	mV
<b>ANALOG AND DIGITAL PIN</b>						
Positive going Input High Voltage Threshold		$V_{IH}$	1.2	–	–	V
Negative going Input High Voltage Threshold		$V_{IL}$	–	–	0.4	V
EN Threshold Hysteresis		$V_{ENH}$	–	100	–	mV
EN High Input Current	EN = 3.6 V	$I_{ENH}$	–	1.5	–	$\mu\text{A}$
<b>OUTPUT</b>						
Feedback Voltage Level		$V_{FB}$	–	0.6	–	V
Maximum Output Voltage		$V_{OUT}$	0.9	–	3.3	V
Output Voltage Accuracy at Room Temperature (Notes 9 and 10)	$V_{IN} = 5.0\text{ V}$ , Load = 0 mA $V_{IN} = 5.0\text{ V}$ , Load = 100 mA ( $V_{OUT} = 3.314\text{ V}$ and 1.8 V)	$\Delta V_{OUT}$	–3 –3	– –	+3 +3	%
Output Voltage Accuracy Over Temperature Range (Notes 9 and 10)	$V_{IN} = 5.0\text{ V}$ , Load = 0 mA $V_{IN} = 5.0\text{ V}$ , Load = 100 mA ( $V_{OUT} = 3.314\text{ V}$ and 1.8 V)	$\Delta V_{OUT}$	–3.5 –3.5	– –	+3.5 +3.5	%
Maximum Output Current		$I_{OUTMAX}$	1	–	–	A
Output Voltage Load Regulation Overttemperature	Load = 100 mA to 1000 mA (PWM Mode) Load = 0 mA to 100 mA (PFM Mode)	$V_{LOADR}$	– –	–0.9 1.1	– –	%
Load Transient Response Rise/Fall Time 1 $\mu\text{s}$	10 mA to 100 mA Load Step (PFM to PWM Mode) 200 mA to 600 mA Load Step (PWM to PWM Mode)	$V_{LOADT}$	– –	40 60	– –	mV
Output Voltage Line Regulation Load = 100 mA	$V_{IN} = 4.2\text{ V}$ to 5.5 V	$V_{LINER}$	–	0.05	–	%
Line Transient Response Load = 100 mA	5.2 V to 4.8 V Line Step (Fall Time = 50 $\mu\text{s}$ )	$V_{LINET}$	–	6.0	–	mV <sub>PP</sub>
Output Voltage Ripple	$I_{OUT} = 0\text{ mA}$ $I_{OUT} = 300\text{ mA}$	$V_{RIPPLE}$	– –	10 4.0	– –	mV <sub>PP</sub>
Switching Frequency		$F_{SW}$	1.2	1.7	2.2	MHz
Duty Cycle		D	–	–	100	%
Soft-Start Time	Time from EN to 90% of Output Voltage	$t_{START}$	–	310	500	$\mu\text{s}$
<b>POWER SWITCHES</b>						
High-Side MOSFET On-Resistance		$R_{ONHS}$	–	400	–	m $\Omega$
Low-Side MOSFET On-Resistance		$R_{ONLS}$	–	300	–	m $\Omega$
High-Side MOSFET Leakage Current		$I_{LEAKHS}$	–	0.05	–	$\mu\text{A}$
Low-Side MOSFET Leakage Current		$I_{LEAKLS}$	–	0.01	–	$\mu\text{A}$
<b>PROTECTION</b>						
DC-DC Short Circuit Protection	Peak Inductor Current	$I_{PK}$	–	1.6	–	A
Thermal Shutdown Threshold		$T_{SD}$	–	180	–	$^\circ\text{C}$
Thermal Shutdown Hysteresis		$T_{SDH}$	–	40	–	$^\circ\text{C}$

9.  $V_{IN}$  voltage should be higher than desired  $V_{OUT}$ .

10. Feedback resistor tolerance 0.1%.



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**RELIABILITY DATA SUMMARY:**

Not applicable as no changes to the product design or manufacturing processes have occurred.

**CHANGED PART IDENTIFICATION:**

Devices marked with date code 1004 or later will be tested and guaranteed per the updated specification.



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**AFFECTED DEVICE LIST**

SCY99090SNT1G