210716854 Si863x, Si864x IDD1 Max Spec Changes

PCN Issue Date: Jul 16, 2021 **Effective Date:** Oct 21, 2021

PCN Type: Datasheet

Description of Change

Si864x datasheet: OPN's Si8640xT & Si8645xT:
The IDD1 spec max limit changed from 5.0 mA to 6.0 mA based on production data. The spec change affects operation at data rates of (1)10 Mbps and (2)100 Mbps at all three specified supply voltages (VDD1) of (1) 5.0 V (2) 3.3 V and (3) 2.5 V.

Si864x datasheet: OPN's Si8641xA/B/C/D:
The IDD1 spec max limit changed from 7.8 mA to 7.4 mA based on production data. The spec change affects operation at DC only for all three specified supply voltages (VDD1) of (1) 5.0 V (2) 3.3 V and (3) 2.5 V.

Si863x & Si864x datasheet:
The following updates were made to correct typos or for clarification purposes:
- A row was added to the Truth Table 3.1 to define the condition when both VDD's are powered up but input is left not connected
- Corrected typos in section 2.2 "Eye Diagram" – units for oscilloscope x-axis were added
- Specified that 2 µA (for Si86xxxA/B/C/D) or 10 µA (for Si86xxxT) pull-ups/downs are integrated to enable the default high/low functions in Note 9, Truth Table 3.1.
- A separate row was added to the VIOTM spec in Table 4.8 for all Si86xxxT devices, value = 8000 V
- Corrected drawing for IS2 package land pattern and dimensions (Si864x only)

Si863x datasheet: OPN's Si8630xT & Si8635xT.
The IDD1 spec max limit changed from 3.9 mA to 4.9 mA based on production data. The spec change affects operation at data rates of (1)10 Mbps and (2)100 Mbps at all three specified supply voltages (VDD1) of (1) 5.0 V (2) 3.3 V and (3) 2.5 V.

Reason for Change

The spec changes are based on production data. It is an accurate representation of product performance. Please see attached tables.

Impact on Form, Fit, Function, Quality, Reliability

Si864x datasheet:
OPN's Si8641xA/B/C/D: No impact on form, fit, function, quality, reliability since the IDD1 specification was tightened at DC operation.
OPN's Si8640xT & Si8645xT: The IDD1 spec change accounts for 1 mA worst case increase, when operated at 10 Mbps or greater. There is no other impact on form, fit, function, quality or reliability.
Si863x datasheet:
OPN's Si8630xT & Si8635xT: The IDD1 spec change accounts for 1 mA worst case increase, when operated at 10 Mbps or greater. There is no other impact on form, fit, function, quality or reliability.

Product Identification

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Existing Part #
Si8630BT-IS
Si8630ET-IS
Si8635BT-IS
Si8635ET-IS
Si8640BT-IS
Si8640ET-IS
Si8645BT-IS
Si8645ET-IS
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Si8641BA-B-IU
Si8641BA-C-IU
Si8641BB-B-IU
Si8641EB-B-IU
Si8641BB-B-IS1
Si8641BB-B-IS
Si8641BC-B-IS1
Si8641BD-B-IS2
Si8641BD-B-IS
Si8641EC-B-IS1
Si8641ED-B-IS2
Si8641ED-B-IS
Si8630BT-ISR
Si8630ET-ISR
Si8635BT-ISR
Si8635ET-ISR
Si8640BT-ISR
Si8640ET-ISR
Si8645BT-ISR
Si8645ET-ISR
Si8641BA-B-IUR
Si8641BA-C-IUR
Si8641BB-B-IUR
Si8641EB-B-IUR
Si8641BB-B-IS1R
Si8641BB-B-ISR
Si8641BC-B-IS1R
Si8641BD-B-IS2R
Si8641BD-B-ISR
Si8641EC-B-IS1R
Si8641ED-B-IS2R
Si8641ED-B-ISR
Si8630BT-AS
Si8630ET-AS
Si8635BT-AS
Si8635ET-AS
Si8640BT-AS
Si8640ET-AS
Si8645BT-AS
Si8645ET-AS
Si8641BA-AU
Si8641BB-AU
Si8641EB-AU
Si8641BB-AS1
Si8641BB-AS
Si8641BC-AS1
Si8641BD-AS2
Si8641BD-AS
Si8641EC-AS1
Si8641ED-AS2
Si8641ED-AS
Si8630BT-ASR
Si8630ET-ASR
Si8635BT-ASR
Si8635ET-ASR
Si8640BT-ASR
Si8640ET-ASR
Si8645BT-ASR
Si8645ET-ASR
Si8641BA-AUR
Si8641BB-AUR
Si8641EB-AUR
Si8641BB-AS1R
Si8641BB-ASR
Si8641BC-AS1R
Si8641BD-AS2R
Si8641BD-ASR

Si8641EC-AS1R
Si8641ED-AS2R
Si8641ED-ASR

Last Date of Unchanged Product: Oct 21, 2021

Qualification Samples

Available upon request.

Customer Response

Lack of acknowledgment of the PCN within 30 days constitutes acceptance of the change, Ref. JEDEC-J-STD-046.

To request further data or inquire about this notification, please contact your Silicon Labs sales representative. A list of Silicon Labs sales representatives is available at http://www.silabs.com.

Customers may approve early PCN acceptance by emailing approval, along with PCN # to PCNEarlyAcceptance@silabs.com

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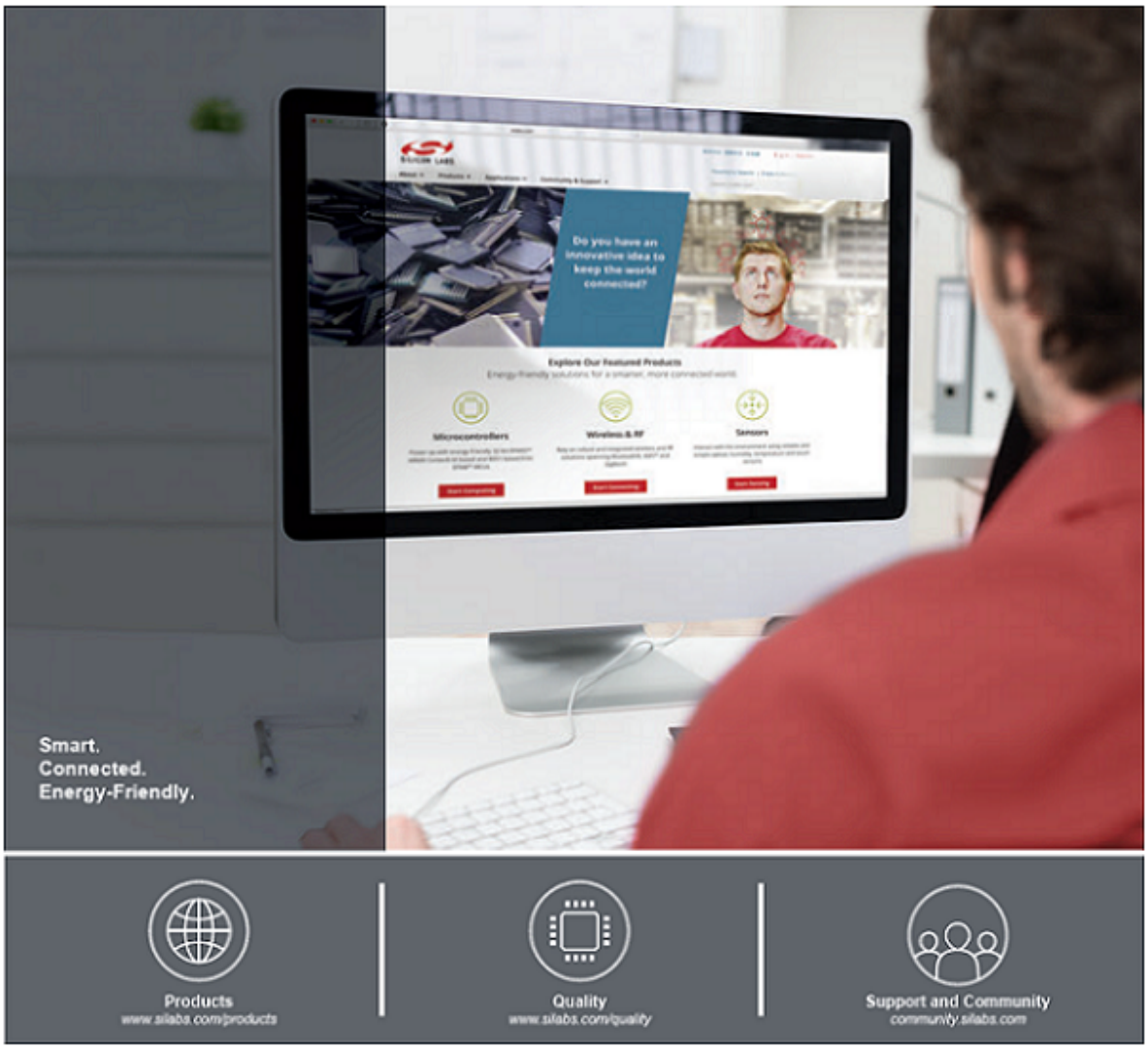
Qualification Data

See appendix showing IDD1 production data.

Si8630xT, Si8635xT	IDD1 Max @ 10 Mbps	IDD1 Max @ 100 Mbps	Units
VDD1 = 2.5 V	3.60	3.66	mA
VDD1 = 3.3 V	3.65	3.69	
VDD1 = 5.0 V	3.75	3.75	
Note: Based on production data from 10 lots			

Si8640xT, Si8645xT	IDD1 Max @ 10 Mbps	IDD1 Max @ 100 Mbps	Units
VDD1 = 2.5 V	4.68	4.74	mA
VDD1 = 3.3 V	4.72	4.81	
VDD1 = 5.0 V	4.82	4.99	
Note: Based on production data from 39 lots			

Si8641xA/B/C/D	IDD1 Max @ DC	Units
VDD1 = 5.0 V	5.76	mA
Note: Based on production data from 591 lots		



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Austin, TX 78701

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