ISOLATION PRODUCT SELECTOR GUIDE




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The Lowest Power Consumption

Based on our patented RF isolation architecture, the Si84xx isolator family is engineered to support the lowest power consumption across data rates ranging from DC to 150 Mbps.

Robust and Reliable Operation

The isolator family excels in even the harshest environments and leads the industry in propagation delay, jitter performance, RF immunity, emissions and ESD.

Multi-Channel and Bi-Directional Communications

The isolator family of digital isolators is designed for a wide range of demanding applications. With a small footprint, up to 5 kV isolation and up to 6 channels, we've got a solution perfect for all of your digital isolation needs.

FALL 2011

Solutions for industrial, communications, comsumer and medical applications

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Isolation Products

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Multi-Channel Unidirectional Digital Isolators (1.0 kVrms)

PART NUMBER	FORWARD CHANNELS	REVERSE CHANNELS	MAXIMUM DATA RATE (MBPS)	ENABLE OUTPUT	ISOLATION RATING	VOLTAGE RANGE (V)	TEMPERATURE RANGE	PACKAGE		
								NB SOIC16	WB SOIC16	QSOP16
Si8440AA-D-IS1	4	0	1	•	1.0 kVrms	2.7 - 5.5	-40 to +125 °C	•		
Si8440BA-D-IS1	4	0	150	•				•		
Si8441AA-D-IS1	3	1	1	•				•		
Si8441BA-D-IS1	3	1	150	•				•		
Si8442AA-D-IS1	2	2	1	•				•		
Si8442BA-D-IS1	2	2	150	•				•		
Si8445BA-D-IS1	4	0	150					•		
Si8450AA-B-IS1	5	0	1	•	1.0 kVrms	2.7 - 5.5	-40 to +125 °C	•		
Si8450BA-B-IS1	5	0	150	•				•		
Si8451AA-B-IS1	4	1	1	•				•		
Si8451BA-B-IS1	4	1	150	•				•		
Si8452AA-B-IS1	3	2	1	•				•		
Si8452BA-B-IS1	3	2	150	•				•		
Si8455BA-B-IS1	5	0	150					•		
Si8460AA-B-IS1	6	0	1	•	1.0 kVrms	2.7 - 5.5	-40 to +125 °C	•		
Si8460BA-B-IS1	6	0	150	•				•		
Si8461AA-B-IS1	5	1	1	•				•		
Si8461BA-B-IS1	5	1	150	•				•		
Si8462AA-B-IS1	4	2	1	•				•		
Si8462BA-B-IS1	4	2	150	•				•		
Si8463AA-B-IS1	3	3	1	•				•		
Si8463BA-B-IS1	3	3	150	•				•		
Si8641BA-B-IU	3	1	150	•	1.0 kVrms	2.7 - 5.5	-40 to +125 °C			•
Si8642BA-B-IU	2	2	150	•						•
Si8645BA-B-IU	4	0	150							•
Si8655BA-B-IS	5	0	150						•	
Si8655BA-B-IU	5	0	150							•
Si8660BA-B-IS1	6	0	150					•		

Multi-Channel Unidirectional Digital Isolators (2.5 kVrms)

PART NUMBER	FORWARD CHANNELS	REVERSE CHANNELS	MAXIMUM DATA RATE (MBPS)	ENABLE OUTPUT	ISOLATION RATING	VOLTAGE RANGE (V)	TEMPERATURE RANGE	PACKAGE(S)		
								NB SOIC8	WB SOIC16	NB SOIC16
Si8410AB-D-IS	1	0	1		2.5 kVrms	2.7 - 5.5	-40 to +125 °C	•		
Si8410BB-D-IS	1	0	150					•		
Si8420AB-D-IS	2	0	1		2.5 kVrms	2.7 - 5.5	-40 to +125 °C	•		
Si8420BB-D-IS	2	0	150					•		
Si8421AB-D-IS	1	1	1					•		
Si8421BB-D-IS	1	1	150					•		
Si8422AB-B-IS	1	1	1		2.5 kVrms	2.7 - 5.5	-40 to +125 °C	•		
Si8422BB-B-IS	1	1	150					•		
Si8423AB-B-IS	2	0	1					•		
Si8423BB-B-IS	2	0	150					•		
Si8430AB-D-IS(1)	3	0	1	•	2.5 kVrms	2.7 - 5.5	-40 to +125 °C		•	•
Si8430BB-D-IS(1)	3	0	150	•					•	•
Si8431AB-D-IS(1)	2	1	1	•					•	•
Si8431BB-D-IS(1)	2	1	150	•					•	•
Si8435BB-D-IS(1)	3	0	150						•	•
Si8440AB-D-IS(1)	4	0	1	•	2.5 kVrms	2.7 - 5.5	-40 to +125 °C		•	•
Si8440BB-D-IS(1)	4	0	150	•					•	•
Si8441AB-D-IS(1)	3	1	1	•					•	•
Si8441BB-D-IS(1)	3	1	150	•					•	•
Si8442AB-D-IS(1)	2	2	1	•					•	•
Si8442BB-D-IS(1)	2	2	150	•					•	•
Si8445BB-D-IS(1)	4	0	150						•	•

Multi-Channel Unidirectional Digital Isolators (2.5 kVrms) cont.

PART NUMBER	FORWARD CHANNELS	REVERSE CHANNELS	MAXIMUM DATA RATE (MBPS)	ENABLE OUTPUT	ISOLATION RATING	VOLTAGE RANGE (V)	TEMPERATURE RANGE	PACKAGE(S)		
								NB SOIC8	WB SOIC16	NB SOIC16
Si8450AB-B-IS1	5	0	1	•	2.5 kVrms	2.7 - 5.5	-40 to +125 °C			•
Si8450BB-B-IS1	5	0	150	•						•
Si8451AB-B-IS1	4	1	1	•						•
Si8451BB-B-IS1	4	1	150	•						•
Si8452AB-B-IS1	3	2	1	•						•
Si8452BB-B-IS1	3	2	150	•						•
Si8455BB-B-IS1	5	0	150							•
Si8460AB-B-IS1	6	0	1	•	2.5 kVrms	2.7 - 5.5	-40 to +125 °C			•
Si8460BB-B-IS1	6	0	150	•						•
Si8461AB-B-IS1	5	1	1	•						•
Si8461BB-B-IS1	5	1	150	•						•
Si8462AB-B-IS1	4	2	1	•						•
Si8462BB-B-IS1	4	2	150	•						•
Si8463AB-B-IS1	3	3	1	•						•
Si8463BB-B-IS1	3	3	150	•						•

Multi-Channel Unidirectional Digital Isolators (3.75 kVrms)

PART NUMBER	FORWARD CHANNELS	REVERSE CHANNELS	MAXIMUM DATA RATE (MBPS)	ENABLE OUTPUT	ISOLATION RATING	VOLTAGE RANGE (V)	TEMPERATURE RANGE	PACKAGE(S)		
								NB SOIC8	WB SOIC16	NB SOIC16
Si8610BC-B-IS	1	0	150	•	3.75 kVrms	2.5 - 5.5	-40 to +125 °C	•		
Si8610EC-B-IS	1	0	150	•				•		
Si8620BC-B-IS	2	0	150	•	3.75 kVrms	2.5 - 5.5	-40 to +125 °C	•		
Si8620EC-B-IS	2	0	150	•				•		
Si8621BC-B-IS	1	1	150	•				•		
Si8621EC-B-IS	1	1	150	•				•		
Si8622BC-B-IS	2	1	150	•				•		
Si8622EC-B-IS	2	1	150	•				•		
Si8630BC-B-IS1	3	0	150	•	3.75 kVrms	2.5 - 5.5	-40 to +125 °C		•	
Si8630EC-B-IS1	3	0	150	•						•
Si8631BC-B-IS1	2	1	150	•						•
Si8631EC-B-IS1	2	1	150	•						•
Si8635BC-B-IS1	3	0	150							•
Si8640BC-B-IS1	4	0	150	•	3.75 kVrms	2.5 - 5.5	-40 to +125 °C			•
Si8640EC-B-IS1	4	0	150	•						•
Si8641BC-B-IS1	3	1	150	•						•
Si8641EC-B-IS1	3	1	150	•						•
Si8642BC-B-IS1	2	2	150	•						•
Si8642EC-B-IS1	2	2	150	•						•
Si8645BC-B-IS1	4	0	150							•
Si8650BC-B-IS1	5	0	150	•	3.75 kVrms	2.5 - 5.5	-40 to +125 °C			•
Si8650EC-B-IS1	5	0	150	•						•
Si8651BC-B-IS1	4	1	150	•						•
Si8651EC-B-IS1	4	1	150	•						•
Si8652BC-B-IS1	3	2	150	•						•
Si8652EC-B-IS1	3	2	150	•						•
Si8660BC-B-IS1	6	0	150		3.75 kVrms	2.5 - 5.5	-40 to +125 °C			•
Si8660EC-B-IS1	6	0	150							•
Si8661BC-B-IS1	5	1	150							•
Si8661EC-B-IS1	5	1	150							•
Si8662BC-B-IS1	4	2	150							•
Si8662EC-B-IS1	4	2	150							•
Si8663BC-B-IS1	3	3	150							•
Si8663EC-B-IS1	3	3	150							•

Multi-Channel Unidirectional Digital Isolators (5 kVrms)

PART NUMBER	FORWARD CHANNELS	REVERSE CHANNELS	MAXIMUM DATA RATE (MBPS)	ENABLE OUTPUT	ISOLATION RATING	VOLTAGE RANGE (V)	TEMPERATURE RANGE	PACKAGE
								WB SOIC16
Si8410AD-A-IS (2)	1	0	1		5 kVrms	2.7 - 5.5	-40 to +125 °C	•
Si8410BD-A-IS (2)	1	0	150					•
Si8420AD-A-IS (2)	2	0	1		5 kVrms	2.7 - 5.5	-40 to +125 °C	•
Si8420BD-A-IS (2)	2	0	150					•
Si8421AD-B-IS (2)	1	1	1					•
Si8421BD-B-IS (2)	1	1	150					•
Si8422AD-B-IS	1	1	1					•
Si8422BD-B-IS	1	1	150					•
Si8423AD-B-IS	2	0	1					•
Si8423BD-B-IS	2	0	150					•
Si8610BD-B-IS	1	0	150	•	5 kVrms	2.7 - 5.5	-40 to +125 °C	•
Si8610ED-B-IS	1	0	150	•				•
Si8620BD-B-IS	2	0	150	•	5 kVrms	2.7 - 5.5	-40 to +125 °C	•
Si8620ED-B-IS	2	0	150	•				•
Si8621BD-B-IS	1	1	150	•				•
Si8621ED-B-IS	1	1	150	•				•
Si8622BD-B-IS	1	1	150	•				•
Si8622ED-B-IS	1	1	150	•				•
Si8630BD-B-IS	3	0	150	•	5 kVrms	2.7 - 5.5	-40 to +125 °C	•
Si8 630ED-B-IS	3	0	150	•				•
Si8631BD-B-IS	2	1	150	•				•
Si8631ED-B-IS	2	1	150	•				•
Si8635BD-B-IS	3	0	150					•
Si8640BD-B-IS	4	0	150	•	5 kVrms	2.7 - 5.5	-40 to +125 °C	•
Si8640ED-B-IS	4	0	150	•				•
Si8641BD-B-IS	3	1	150	•				•
Si8641ED-B-IS	3	1	150	•				•
Si8642BD-B-IS	2	2	150	•				•
Si8642ED-B-IS	2	2	150	•				•
Si8645BD-B-IS	4	0	150					•
Si8650BD-B-IS	5	0	150	•	5 kVrms	2.7 - 5.5	-40 to +125 °C	•
Si8650ED-B-IS	5	0	150	•				•
Si8651BD-B-IS	4	1	150	•				•
Si8651ED-B-IS	4	1	150	•				•
Si8652BD-B-IS	3	2	150	•				•
Si8652ED-B-IS	3	2	150	•				•
Si8655BD-B-IS	5	0	150					•
Si8660BD-B-IS	6	0	150		5 kVrms	2.7 - 5.5	-40 to +125 °C	•
Si8660ED-B-IS	6	0	150					•
Si8661BD-B-IS	5	1	150					•
Si8661ED-B-IS	5	1	150					•
Si8662BD-B-IS	4	2	150					•
Si8662ED-B-IS	4	2	150					•
Si8663BD-B-IS	3	3	150					•
Si8663ED-B-IS	3	3	150					•

Bidirectional Digital Isolators

PART NUMBER	SERIAL DATA	SERIAL CLOCK	UNIDIRECTIONAL CHANNELS	MAX. I²C CLOCK RATE	ISOLATION RATING	PACKAGE(S)		
						NB SOIC8	NB SOIC16	WB SOIC16
Si8400AA-B-IS	•	•	0	1.7 MHz	1.0 kVrms	•		
Si8400AB-B-IS	•	•	0	1.7 MHz	2.5 kVrms	•		
Si8401AA-B-IS	•		Clock	1.7 MHz	1.0 kVrms	•		
Si8401AA-B-IS	•		Clock	1.7 MHz	2.5 kVrms	•		
Si8405AB-B-IS1	•	•	1 forward and 1 reverse	1.7 MHz	1.0 kVrms		•	
Si8405AB-B-IS1	•	•	1 forward and 1 reverse	1.7 MHz	2.5 kVrms		•	
Si8600AC-B-IS	•	•	0	1.7 MHz	3.75 kVrms	•		
Si8600AD-B-IS	•	•	0	1.7 MHz	5 kVrms			•
Si8602AC-B-IS	•		Clock	1.7 MHz	3.75 kVrms	•		
Si8602AD-B-IS	•		Clock	1.7 MHz	5 kVrms			•
Si8605AC-B-IS1	•	•	1 forward and 1 reverse	1.7 MHz	3.75 kVrms		•	
Si8605AD-B-IS	•	•	1 forward and 1 reverse	1.7 MHz	5 kVrms			•
Si8606AC-B-IS1	•	•	2 forward	1.7 MHz	3.75 kVrms		•	
Si8606AD-B-IS	•	•	2 forward	1.7 MHz	5 kVrms			•

Isolated Current Sensors

PART NUMBER	FULL SCALE CURRENT (A)	INITIAL ACCURACY %	TEMP RANGE	OUTPUT MODE	ISOLATION RATING	PIN 7 FUNCTION	PACKAGE(S)	
							QFN12	SOIC20
Si8501	5	± 5%	-40 to 125 °C	Single	1 or 5 kV rms[1]	Integrator Reset Time Programming Input	•	•
Si8502	10	± 5%	-40 to 125 °C	Single	1 or 5 kV rms[1]	Integrator Reset Time Programming Input	•	•
Si8503	20	± 5%	-40 to 125 °C	Single	1 or 5 kV rms[1]	Integrator Reset Time Programming Input	•	•
Si8511	5	± 5%	-40 to 125 °C	Ping-Pong	1 or 5 kV rms[1]	Integrator Reset Time Programming Input	•	•
Si8512	10	± 5%	-40 to 125 °C	Ping-Pong	1 or 5 kV rms[1]	Integrator Reset Time Programming Input	•	•
Si8513	20	± 5%	-40 to 125 °C	Ping-Pong	1 or 5 kV rms[1]	Integrator Reset Time Programming Input	•	•
Si8517	5	± 5%	-40 to 125 °C	Ping-Pong with FAULT output	1 or 5 kV rms[1]	Fault Output	•	•
Si8518	10	± 5%	-40 to 125 °C	Ping-Pong with FAULT output	1 or 5 kV rms[1]	Fault Output	•	•
Si8519	20	± 5%	-40 to 125 °C	Ping-Pong with FAULT output	1 or 5 kV rms[1]	Fault Output	•	•
Si8540	Programmable	± 2%	-40 to 85 °C	Programmable			5 or 8-pin SOIC	

[1]5 kV isolation available in 20-pin SOIC package
*NB = Narrow-Body, WB = Wide Body

Isolated Gate Drivers

PART NUMBER	INPUTS	CONFIGURATION	OVERLAP PROTECTION	PROGRAMMABLE DEAD TIME	PK IOUT	PACKAGE(S)			
						SOIC8	NB SOIC16	WB SOIC16	LGA14
Si8220	Opto (Passive)	Single Driver			2.5 A	•		•	
Si8221	Opto (Passive)	Single Driver			0.5 A	•		•	
Si8230	VIA/ VIB	High-Side/Low-Side	•	•	0.5 A		•	•	
Si8231	PWM	High-Side/Low-Side	•	•	0.5 A		•	•	
Si8232	VIA/ VIB	Dual Channel Driver			0.5 A		•	•	
Si8233	VIA/ VIB	High-Side/Low-Side	•	•	4.0 A		•	•	•
Si8234	PWM	High-Side/Low-Side	•	•	4.0 A		•	•	•
Si8235	VIA/ VIB	Dual Channel Driver			4.0 A		•	•	•
Si8236	VIA/ VIB	Dual Channel Driver with Thermal Pad			4.0 A				•

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ISOdriver Challenge Web Utility

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www.silabs.com/isodriverchallenge

Isolation Products Meet Safety Standard Compliance

Silicon Labs isolation products meet global requirements and standards for safety compliance and mechanical creepage and clearance. Digital isolator, AC current sensor and ISOdriver products support up to 8 mm of creepage and clearance through wide-body SOIC package to pass the industry's most stringent requirements. The devices also adhere to worldwide safety standards through Underwriter Laboratories (UL), CSA and VDE certification with devices specifying up to 5 kV isolation.

TESTING AGENCY	STANDARD	ISOLATION RATING(S) (kVrms)	DIGITAL ISOLATORS (UNI- AND BIDIRECTIONAL)	ISOdrivers	AC CURRENT SENSORS
			Si84xx/S46xx	Si823x	Si850x, Si851x
UL	UL 1577	2.5, 5.0 kVrms	•	•	•
CSA	CSA 5A (60950, 61010, 60601)	2.5, 5.0 kVrms	•	•	•
VDE	IEC 60747-5-2, 60950*	2.5, 5.0 kVrms	•	•	

*Pending

Silicon Labs' products are designed and manufactured to ISO 9001, ISO 14001 and ISO/TS 16949 standards.

ISO 9001
Quality Management System
Design and Manufacture of Integrated Circuits
Certificate Registration No: 951 08 4762

ISO 14001
Environmental Management System
Design and Manufacture of Integrated Circuits
Certificate Registration No: 951 09 4998

ISO/TS 16949
Quality Management System for
Manufacture of Integrated Circuits and Related
Products for Automotive Applications
Certificate Registration No.: 12 111 33114 TMS
IATF Certificate No.: 0080212

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