

Introduction of Toshiba Bus Switch products

Lineup of bus switches to meet various low-speed to ultra-high-speed interface

Wide range of support from general-purpose bus

Toshiba's bus switch IC is the most suitable switch for high-speed switching and disconnection of bus lines. In addition to 3V, 5V products with low on-resistance, we are also offering a range of level shift types that can accommodate different power supply systems. We also provide high-quality products centered on production in Japan and Thailand. The bus switch can be selected from a variety of characteristics, so you can choose the most suitable bus switch product for your operating environment.

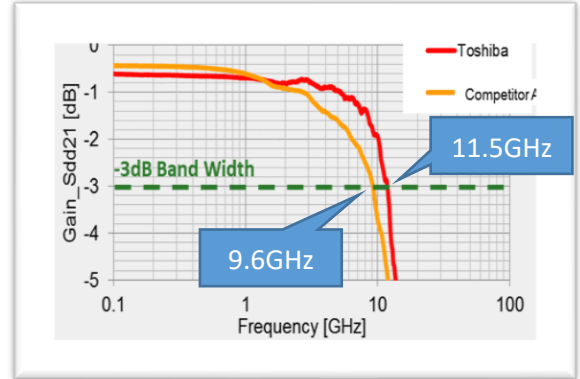
Good frequency characteristics over 10 GHz!

Toshiba's latest high-speed bus switch has a wide Frequency characteristic (-3dB) of 11.5GHz high-quality design is facilitated by low signal attenuation when used in high-speed interfaces.

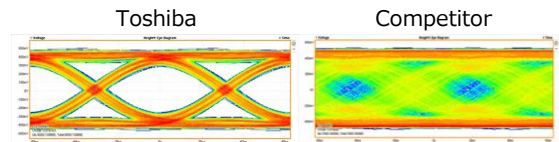
It is possible to transmit signals with high quality!

In addition to its frequency characteristics, Toshiba's bus switch has excellent signal quality. The results of eye-pattern comparisons also show superior signal-quality compared to competitor's same kind products(**). We have also verified the quality of high-speed signals, such as USB 3.1, PCIe® Gen3 and MIPI® M-Phy.

Frequency Characteristics of Toshiba High-Speed Bus Switches (Toshiba TC7PCI3212MT)



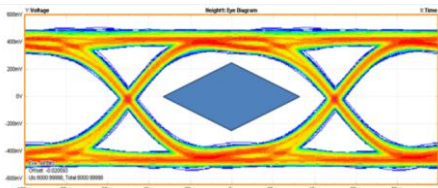
Signal-quality testing comparisons (16 Gbps Eye-pattern)



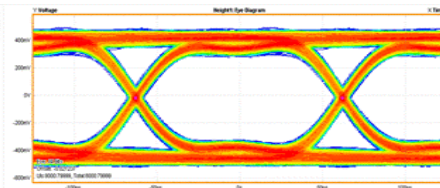
*Compared to same kind products based on our survey as of today.

** Based on our survey as of today.

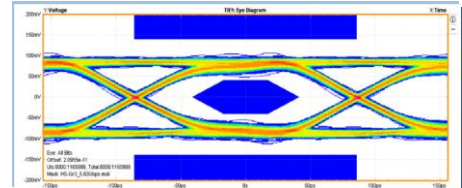
Signal quality test results by Eye- Pattern USB 3.1: 10Gbps



PCIe® Gen3: 8Gbps



MIPI® M-Phy: 5.83Gbps



Switch-type

This line includes a switch (SPST) for disconnecting the bus line, and a multiplexer (SPDT,SP4T) for switching the bus line.

SPST	SPDT	SP4T
Single-Pole Single-Throw	Single-Pole Double-Throw	Single-Pole 4-Throw






Main applications of each series

Series Name	Highspeed bus switch	Standard bus switch	Dual power supply level shift bus switch
		TC7PCI, TC7USB	TC7SB/SBL, WB/WBL, TC7MBL
Main applications	High-speed signaling lines such as USB 2/3 PCIe® Gen3	5V/3.3Vgeneral-purpose signaling lines	Bus lines that require voltage conversion
Signaling rate	500Mbps~10Gbps	Less than 350Mbps	Less than 20Mbps






Features of each series

You can easily select from the list of characteristics.

Series	Switch type	Num of Circuit	Product Name	Control	Vcc(V)	Ron(Ω)	Con(pF)	BW(-3dB)	Package Name	ご購入			
						(typ.)	(typ.)	(typ.)					
High Speed Differential	SPDT	Dual	TC7PCI3212MT	Low Active	2.7 to 3.6	7.5	1.5	11.5GHz	TQFN20	Buy Online			
			TC7PCI3215MT	Low Active						Buy Online			
	Single		TC7USB40MU	Low Active	2.3 to 4.3	4.5	5	1.5GHz	UQFN10B	Buy Online			
			TC7USB40FT	Low Active					TSSOP14	Buy Online			
			TC7USB42MU	Low Active					UQFN10B	Buy Online			
			TC7USB42FT	Low Active					TSSOP14	Buy Online			
	Low voltage Standard	SPST	Single	TC7SBL66CFU	High Active	1.65 to 3.6	6.5	7.5	510MHz	USV	Buy Online		
TC7SBL384CFU				Low Active	Buy Online								
Dual			TC7WBL3305CFK	High Active	6					7	US8	Buy Online	
			TC7WBL3306CFK	Low Active								Buy Online	
Quad			TC7MBL3125CFT	Low Active	6.5					7.5	TSSOP14	Buy Online	
			TC7MBL3125CFK	Low Active								Buy Online	
			TC7MBL3126CFT	High Active								TSSOP14	Buy Online
			TC7MBL3126CFK	High Active								US14	Buy Online
Octal			TC7MBL3245CFT	Low Active	6.5					7.5	TSSOP20	Buy Online	
			TC7MBL3245CFK	Low Active							US20	Buy Online	
SPDT		Quad	TC7MBL3257CFT	Low Active	8.5	8	TSSOP16	Buy Online					
			TC7MBL3257CFK	Low Active			US16	Buy Online					
SP4T		Dual	TC7MBL3253CFT	Low Active	9	13	TSSOP16	Buy Online					
			TC7MBL3253CFK	Low Active			US16	Buy Online					
5V Standard		SPST	Single	TC7SB66CFU	High Active	1.65 to 5.5	4	10	480MHz	USV	Buy Online		
	TC7SB67CFU			Low Active	Buy Online								
	Dual		TC7WB66CFK	High Active	4					10	US8	Buy Online	
			TC7WB67CFK	Low Active								Buy Online	
	SPDT	Single	TC7SB3157CFU	-	4					15	US6	Buy Online	
			TC7SB3157DL6X	-	4					15	XSON6	Buy Online	
Level Shift	SPST	Single	TC7SPB9306TU	High Active	VccA: 1.65 to 5.0 VccB: 2.3 to 5.5	5	14	-	UF6	Buy Online			
			TC7SPB9307TU	Low Active						Buy Online			
		Dual	TC7WPB9306FK	High Active					5	14	US8	Buy Online	
			TC7WPB9307FK	Low Active								Buy Online	
		Quad	TC7QPB9306FT	High Active					5	14	TSSOP14	Buy Online	
			TC7QPB9306FK	High Active								Buy Online	
			TC7QPB9307FT	Low Active								TSSOP14	Buy Online
			TC7QPB9307FK	Low Active								US14	Buy Online
	Octal	TC7MPB9307FT	High Active	5	14	TSSOP20	Buy Online						
		TC7MPB9307FK	High Active			US20	Buy Online						
	SPDT	Dual	TC7MPB9326FT	High Active	5	14	TSSOP14	Buy Online					
			TC7MPB9326FK	High Active			US14	Buy Online					
			TC7MPB9327FT	Low Active			TSSOP14	Buy Online					
TC7MPB9327FK			Low Active	US14			Buy Online						

USV(SOT-353)	XSON6(MP6D)	US6(SOT-363)	UF6(SOT-363F)	US8(SOT-765)
				
W : 2.0 mm L : 2.1 mm H : 0.9 mm	W : 1.45 mm L : 1.0 mm H : 0.48 mm	W : 2.0 mm L : 2.1 mm H : 0.9 mm	W : 2.0 mm L : 2.1 mm H : 0.7 mm	W : 2.0 mm L : 3.1 mm H : 0.7 mm



UQFN10B	TSSOP14	US14	TSSOP16	US16
				
W : 1.4 mm L : 1.8 mm H : 0.48mm	W : 5.4 mm L : 6.4 mm H : 1.0 mm	W : 4.0 mm L : 4.0 mm H : 0.8 mm	W : 5.4 mm L : 6.4 mm H : 1.0 mm	W : 4.0 mm L : 4.0 mm H : 0.8 mm

TSSOP20	US20	TQFN20
		
W : 6.5 mm L : 6.4 mm H : 1.0 mm	W : 5.0 mm L : 4.0 mm H : 0.8 mm	W : 4.5 mm L : 2.5 mm H : 0.55 mm

Related LINK

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