

## Toshiba General Purpose CMOS Logic / One-gate Logic IC

The CMOS logic IC / one-gate logic IC with production results for about half a century!  
 New lineup of CMOS Logic products with extended operating temperature range up to  $T_a = 125^\circ\text{C}$

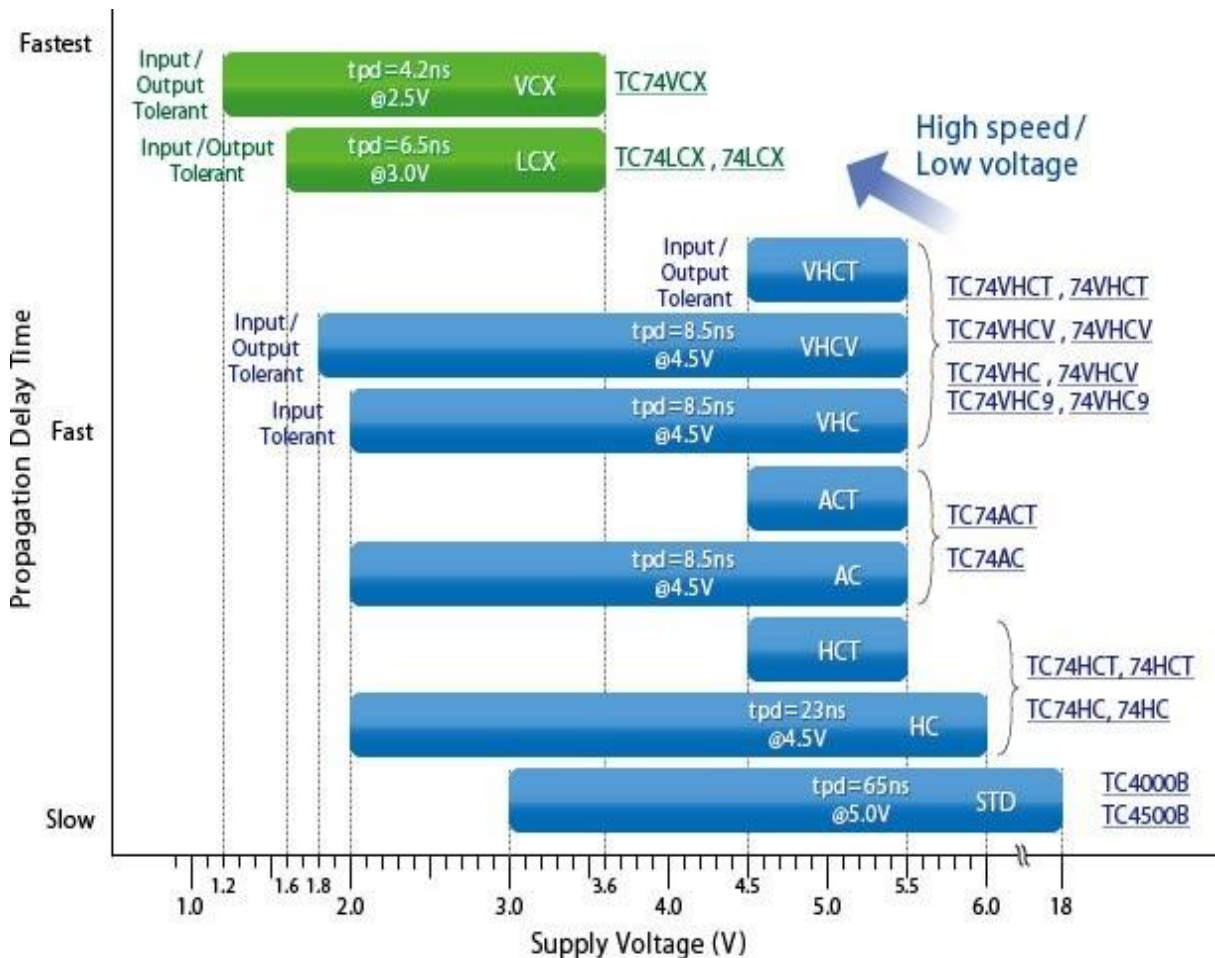
### •Approximately 50 years of CMOS logic and one-gate logic production results

Toshiba's CMOS Logic Products began production in the 1970s, and we are continuing to supply high-quality products through our production bases in Japan and the Philippines, while developing series and packages.

We will continue to supply high-quality, long-term CMOS logic ICs and one-gate logic (LMOS) products so that everyone can use our products with peace of mind.

### •Comprehensive lineup

Almost all of Toshiba's mass-produced lineup can be selected. It is especially recommended for users who are considering the future and those who are already using it but want to proceed with the 2nd source review. We would like to ask you to review the package lineup and cross-references of other companies according to characteristics so that you can select them more easily.



- **Extended of the lineup of CMOS Logic and One-gate Logic products with extended operating temperature range up to  $T_a = 125\text{ }^\circ\text{C}$**

Although some products are already compatible with the operating temperature range  $T_a = -40\text{ }^\circ\text{C}$ , to  $125\text{ }^\circ\text{C}$ , we will expand the products for temperature expansion to meet the customer's temperature expansion requirements.

In addition, Toshiba plans to increase not only general-purpose CMOS logic products but also high-temperature guaranteed One-gate Logic(L-MOS), bus switch, Level-shifter products.

This expands the range of Toshiba's general-purpose CMOS logic products that you can adopt without worrying about temperature conditions when you consider adopting it.

## •Lineup of CMOS Logic products

You can easily select from the list of characteristics.

Type	Series	Product Number	Temperature-expanded products ○: existence —: nonexistence	Operating voltage range (V)	Propagation delay (ns)	Output current (mA)	Input tolerance (V)	Output power-down protection (V)	Package	(Note) Where to buy
Compatibility with 5 V Systems	Standard	<a href="#">TC4000B</a>	—	3 to 18	65 (@5.0V)	±0.51 (@5.0V)	—	—	DIP14,16 SOP14,16 TSSOP14	<a href="#">Buy Online</a>
	High-speed	<a href="#">TC74HC</a>	○	2 to 6	23 (@4.5V)	±4.0 or ±6.0 (@4.5V)	—	—	DIP14,16,20 SOP14,16,20 SOIC14,16,20 TSSOP14,16	<a href="#">Buy Online</a>
		<a href="#">74HC</a>	○							<a href="#">Buy Online</a>
		<a href="#">TC74HCT</a>	—	4.5 to 5.5						<a href="#">Buy Online</a>
		<a href="#">74HCT</a>	○	5.5						<a href="#">Buy Online</a>
	Advanced	<a href="#">TC74AC</a>	○	2 to 5.5	8.5 (@4.5V)	±24 (@4.5V)	—	—	DIP14,16,20 SOP14,16,20 TSSOP14,16,20	<a href="#">Buy Online</a>
		<a href="#">TC74ACT</a>	○	4.5 to 5.5						<a href="#">Buy Online</a>
	Very High-speed	<a href="#">74VHC</a>	○	2 to 5.5	8.5 (@4.5V)	±8.0 (@4.5V)	0 to 5.5	—	DIP14,20 SOP14,16,20 TSSOP14,16,20 US14,16,20	<a href="#">Buy Online</a>
		<a href="#">74VHCT</a>	○	4.5 to 5.5						<a href="#">Buy Online</a>
		<a href="#">74VHCV</a>	○	1.8 to 5.5						±16 (@4.5V)
Compatible with low-voltage systems	Low-voltage	<a href="#">TC74LCX</a>	○	1.65 to 3.6	6.5 (@3.0V)	±24 (@3.0V)	0 to 5.5	0 to 5.5	SOP14,16,20 TSSOP14,16,20 ,48,US14,16,20	<a href="#">Buy Online</a>
		<a href="#">74LCX</a>	○	3.6					<a href="#">Buy Online</a>	
	Very Low-voltage	<a href="#">TC74VCX</a>	○	1.2 to 3.6	4.2 (@2.3V)	±24 (@3.0V)	0 to 3.6	0 to 3.6	TSSOP14,16,20 ,48 US14,16,20	<a href="#">Buy Online</a>




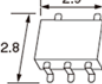
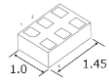
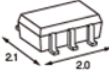
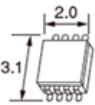
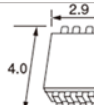
## •Lineup of One-Gate logic products

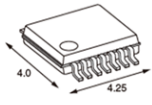
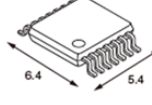
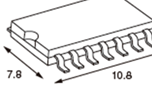
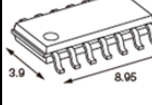
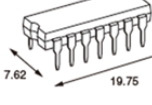
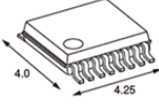
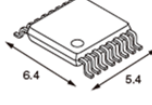
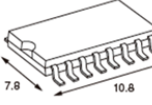
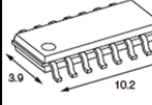
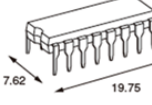
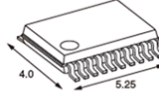
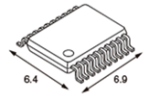
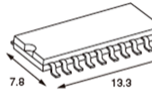
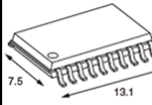
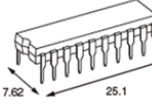
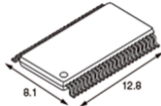
Type	Series	Product Number	Temperature-expanded products ○: existence —: nonexistence	Operating voltage range (V)	Propagation delay (ns)	Output current (mA)	Input tolerance (V)	Output power-down protection (V)	Package	(Note) Where to buy	
Compatibility with 5 V Systems	Very High-speed	<a href="#">TC7SH</a>	○	2 to 5.5	9 (@4.5V)	±8.0 (@4.5V)	0 to 5.5	—	USV,SMV	<a href="#">Buy Online</a>	
		<a href="#">TC7WH</a>	○						SM8,US8	<a href="#">Buy Online</a>	
		<a href="#">TC7SET</a>	○	4.5 to 5.5	12 (@4.5V)				—	USV,SMV	<a href="#">Buy Online</a>
Compatible with low-voltage systems	Low-voltage	<a href="#">TC7SZ</a>	○	1.8 to 5.5	4.5 (@3.0V)	±24 (@3.0V)	0 to 5.5	0 to 5.5	USV,SMV,E SV,fSV	<a href="#">Buy Online</a>	
		<a href="#">TC7PZ</a>	○	5.5					US6,	<a href="#">Buy Online</a>	
		<a href="#">TC7WZ</a>	○	5.5					US8,SM8	<a href="#">Buy Online</a>	
	LVP	<a href="#">7UL1G</a>	○	0.9 to 3.6	2.5 (@3.0V)	±8.0 (@4.5V)	0 to 3.6	0 to 3.6	USV,fSV, XSON6	<a href="#">Buy Online</a>	
		<a href="#">7UL2G</a>	○						US8	<a href="#">Buy Online</a>	
		<a href="#">7UL3G</a>	○	US8					<a href="#">Buy Online</a>		
		<a href="#">7UL1T</a>	○	2.3 to 3.6					3.6 (@3.0V)	USV,fSV, XSON6	<a href="#">Buy Online</a>
		<a href="#">7UL2T</a>	○	3.6					US8	<a href="#">Buy Online</a>	
		<a href="#">7UL3T</a>	○	3.6					US8	<a href="#">Buy Online</a>	
		<a href="#">7UL3T</a>	○	3.6					US8	<a href="#">Buy Online</a>	

(Note): These items are for sale by an online distributor. They includes operating temperature ranges from -40 °C to + 85 °C.

## Package lineup

If you click an image for each package, the image is linked to the corresponding product.

Type	Surface Mount			
Pin Pitch	0.35mm	0.5mm	0.65mm	0.95mm
5pin				
	<a href="#">fSV(SOT-953)</a>	<a href="#">ESV(SOT-553)</a>	<a href="#">USV(SOT-353)</a>	<a href="#">SMV(SOT-25)</a>
6pin				
		<a href="#">XSON6</a>	<a href="#">US6(SOT-363)</a>	
8pin				
		<a href="#">US8(SOT-765)</a>	<a href="#">SM8(SOT-505)</a>	
Code	FS	5pin:FE 6pin:NX 8pin:FK	FU	F

Type	Surface mount type					Through-hole type
Pin pitch	0.5mm	0.5mm	0.65mm	1.27mm	1.27mm	2.54mm
14pin						
	<a href="#">US14</a>		<a href="#">TSSOP14</a>	<a href="#">SOP14</a>	<a href="#">SOIC14</a>	<a href="#">DIP14</a>
16pin						
	<a href="#">US16</a>		<a href="#">TSSOP16</a>	<a href="#">SOP16</a>	<a href="#">SOIC16</a>	<a href="#">DIP16</a>
20pin						
	<a href="#">US20</a>		<a href="#">TSSOP20</a>	<a href="#">SOP20</a>	<a href="#">SOIC20</a>	<a href="#">DIP20</a>
48pin						
		<a href="#">TSSOP48</a>				
Package symbol	FK	FT	FT	F	D	P
Third-party packages symbol	-	DCG, DCG,MTD, DT	PW, MTC,DT	NS, T, SJ, F	D, DW	N, P

## Features of each series and quick cross reference

You can easily select from the characteristic list. To search from other companies' standard logic ICs, refer to the column for other companies' compatible series names.

### Standard Logic

Type	Series	Product Number	Temperature-expanded products ○: existence —: nonexistence	Operating voltage range (V)	Propagation delay (ns)	Output current (mA)	Input tolerance (V)	Output power-down protection (V)	Other companies compatible series name	(Note2) Where to buy		
Compatibility with 5 V Systems	Standard	<a href="#">TC4000B</a>	—	3 to 18	65 (@5.0V)	±0.51 (@5.0V)	-	-	CD4000B, HEF4000, MC14000	<a href="#">Buy Online</a>		
	High-speed	<a href="#">TC74HC</a>	○	2 to 6	23 (@4.5V)	±4.0 or ±6.0 (@4.5V)	-	-	-	SN74HC, MM74HC, MC74HC	<a href="#">Buy Online</a>	
		<a href="#">74HC</a> (Note1)	○								<a href="#">Buy Online</a>	
		<a href="#">TC74HCT</a>	—	4.5 to 5.5							SN74HCT, MM74HCT, MC74HCT	<a href="#">Buy Online</a>
		<a href="#">74HCT</a> (Note1)	○								<a href="#">Buy Online</a>	
	Advanced	<a href="#">TC74AC</a>	○	2 to 5.5	8.5 (@4.5V)	±24 (@4.5V)	-	-	SN74AC, 74AC, MC74AC	<a href="#">Buy Online</a>		
		<a href="#">TC74ACT</a>	○	4.5 to 5.5					SN74ACT, 74ACT, MC74ACT	<a href="#">Buy Online</a>		
	Very High-speed	<a href="#">TC74VHC</a>	—	2 to 5.5	8.5 (@4.5V)	±8.0 (@4.5V)	0 to 5.5	0 to 5.5	-	SN74AHC, 74AHC, MC74VHC	<a href="#">Buy Online</a>	
		<a href="#">74VHC</a>	○									
		<a href="#">TC74VHCT</a>	—	4.5 to 5.5							SN74AHCT, 74AHCT, MC74VHCT	<a href="#">Buy Online</a>
		<a href="#">74VHCT</a>	○							<a href="#">Buy Online</a>		
		<a href="#">TC74VHCV</a>	—	1.8 to 5.5		±16 (@4.5V)					SN74LV-A	<a href="#">Buy Online</a>
		<a href="#">74VHCV</a>	○								<a href="#">Buy Online</a>	
Compatible with low-voltage systems	Low-voltage	<a href="#">TC74LCX</a>	○	1.65 to 3.6	6.5 (@3.0V)	±24 (@3.0V)	0 to 5.5	0 to 5.5	SN74LVC, 74LVC, MC74LCX	<a href="#">Buy Online</a>		
		<a href="#">74LCX</a>	○							<a href="#">Buy Online</a>		
	Very Low-voltage	<a href="#">TC74VCX</a>	○	1.2 to 3.6	4.2 (@2.3V)	±24 (@3.0V)	0 to 3.6	0 to 3.6	SN74ALVC/ALVT, 74ALVC/ALVT	<a href="#">Buy Online</a>		

(Note1): 74HC/HCT is a lineup of TSSOP and SOIC only.

(Note2): These items are for sale by an online distributor. They includes operating temperature ranges from -40 ° C to + 85 ° C.

## Lineup of Bus Switch

Type	Function	Number of circuits	Product number	Operating temperature range (°C)	Vcc(V)	Ron(Ω)	Con(pF)	BW(-3dB)	Package	Where to buy
						(typ.)	(typ.)	(typ.)	Name	
High Speed Differential	SPDT	Dual	<a href="#">TDS4A212MX</a>	-40 to 85	1.6 to 3.6	8.5 (※)	-	26.2GHz	XQFN16	
			<a href="#">TDS4B212MX</a>			7.9(※)		27.5GHz		
	SPDT	Dual	<a href="#">TC7PCI3212MT</a>	-40 to 85	2.7 to 3.6	7.5	1.5	11.5GHz	TQFN20	
			<a href="#">TC7PCI3215MT</a>							
		Single	<a href="#">TC7USB40MU</a>	-40 to 85	2.3 to 4.3	4.5	5	1.5GHz	UQFN10B	
			<a href="#">TC7USB40FT</a>						TSSOP14	
			<a href="#">TC7USB42MU</a>						UQFN10B	
<a href="#">TC7USB42FT</a>	TSSOP14									
Low voltage Standard	SPST	Single	<a href="#">TC7SBL66CFU</a>	-40 to 125	1.65 to 3.6	5.5	7	510MHz	USV	
			<a href="#">TC7SBL384CFU</a>							
		Dual	<a href="#">TC7WBL3305CFK</a>	-40 to 125		6	7		US8	
			<a href="#">TC7WBL3306CFK</a>							
		Quad	<a href="#">TC7MBL3125CFT</a>	-40 to 125		6.5	7.5		TSSOP14	
			<a href="#">TC7MBL3125CFK</a>	-40 to 85					US14	
			<a href="#">TC7MBL3126CFT</a>	-40 to 125					TSSOP14	
			<a href="#">TC7MBL3126CFK</a>	-40 to 85					US14	
		Octal	<a href="#">TC7MBL3245CFT</a>	-40 to 125		6.5	7.5		TSSOP20	
			<a href="#">TC7MBL3245CFK</a>	-40 to 85					US20	
	SPDT	Quad	<a href="#">TC7MBL3257CFT</a>	-40 to 125	8.5	8	TSSOP16			
			<a href="#">TC7MBL3257CFK</a>	-40 to 85			US16			
	SP4T	Dual	<a href="#">TC7MBL3253CFT</a>	-40 to 125	9	13	TSSOP16			
			<a href="#">TC7MBL3253CFK</a>	-40 to 85			US16			
5V Standard	SPST	Single	<a href="#">TC7SB66CFU</a>	-40 to 125	1.65 to 5.5	4	10	480MHz	USV	
			<a href="#">TC7SB67CFU</a>							
		Dual	<a href="#">TC7WB66CFK</a>	-40 to 125		4	10		US8	
	<a href="#">TC7WB67CFK</a>									
	SPDT	Single	<a href="#">TC7SB3157CFU</a>	-40 to 85		4	15		US6	
<a href="#">TC7SB3157DL6X</a>			-40 to 125	XSON6						
Level Shift	SPST	Single	<a href="#">TC7SPB9306TU</a>	-40 to 85	VccA: 1.65 to 5.0 VccB: 2.3 to 5.5	5	14	-	UF6	
			<a href="#">TC7SPB9307TU</a>							
		Dual	<a href="#">TC7WPB9306FK</a>	-40 to 125		5	14		US8	
			<a href="#">TC7WPB9307FK</a>							
		Quad	<a href="#">TC7QPB9306FT</a>	-40 to 125		5	14		TSSOP14	
			<a href="#">TC7QPB9306FK</a>	-40 to 85					US14	
			<a href="#">TC7QPB9307FT</a>	-40 to 125					TSSOP14	
			<a href="#">TC7QPB9307FK</a>	-40 to 85					US14	
		Octal	<a href="#">TC7MPB9307FT</a>	-40 to 125		5	14		TSSOP20	
			<a href="#">TC7MPB9307FK</a>	-40 to 85					US20	
	<a href="#">TC7MPB9326FT</a>		-40 to 125	TSSOP14						
	SPDT	Dual	<a href="#">TC7MPB9326FK</a>	-40 to 85	5	14	US14			
			<a href="#">TC7MPB9327FT</a>	-40 to 125			TSSOP14			
<a href="#">TC7MPB9327FK</a>			-40 to 85	US14						
<a href="#">TC7MPB9327FK</a>			-40 to 85	US14						

※ : Maximum value

Please also refer to the following documents for related explanations.

● To perform a parametric search of Logic ICs :

- CMOS logic ICs [Click](#)
- One-Gate logic ICs [Click](#)
- Bus Switches [Click](#)

● Application notes [Click](#)

● FAQs of Logic ICs [Click](#)

● Stock Check & Purchase [Click](#)

● Cross Reference Search page [Click](#)

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