



U74CBT1G125

CMOS IC

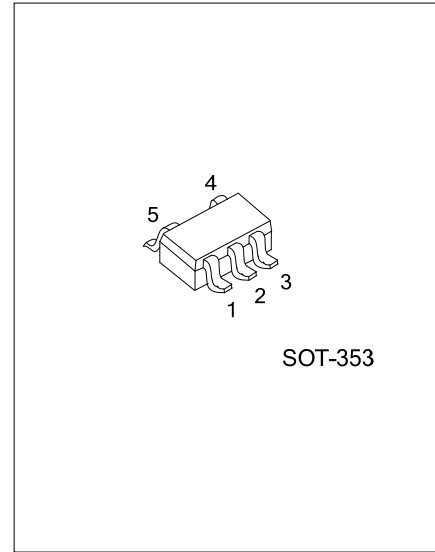
SINGLE FET BUS SWITCH

DESCRIPTION

The **U74CBT1G125** features a single high-speed line switch. The switch is disabled when the output-enable (\overline{OE}) input is high.

FEATURES

- * 5- Ω Switch Connection Between Two Ports
- * Inputs are TTL-Voltage compatible

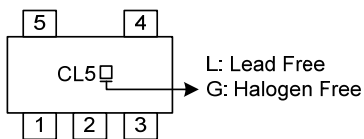


ORDERING INFORMATION

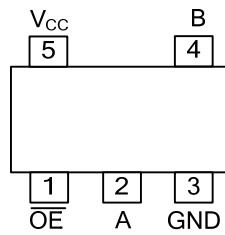
Ordering Number		Package	Packing
Lead Free	Halogen Free		
U74CBT1G125L-AL5-R	U74CBT1G125G-AL5-R	SOT-353	Tape Reel

<p>U74CBT1G125G-AL5-R</p> <p>(1) Packing Type (2) Package Type (3) Green Package</p>	<p>(1) R: Tape Reel (2) AL5: SOT-353 (3) G: Halogen Free and Lead Free, L: Lead Free</p>
--	--

MARKING



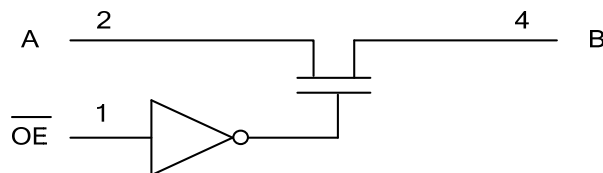
■ PIN CONFIGURATION



■ FUNCTION TABLE (each gate)

INPUT \overline{OE}	OUTPUT
L	A port = B port
H	Disconnect

■ LOGIC DIAGRAM (positive logic)



■ ABSOLUTE MAXIMUM RATING (unless otherwise specified)(Note 1)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V_{CC}	-0.5 ~ 7	V
Input Voltage	V_I	-0.5 ~ 7	V
Continuous channel current		128	mA
Input Clamp Current($V_I < 0$)	I_{IK}	-50	mA
Storage Temperature	T_{STG}	-65 ~ +150	°C

Notes: 1. The input and output voltage ratings may be exceeded if the input and output current ratings are observed.
 2. The package thermal impedance is calculated in accordance with JESD 51.

■ RECOMMENDED OPERATING COMDITIONS

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT
Supply Voltage	V_{CC}	4		5.5	V
High-control input voltage	V_{IH}	2			V
Low-control input voltage	V_{IL}			0.8	V
Operating Temperature	T_A	-40		+85	°C

■ STATIC CHARACTERISTICS

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT	
Digital Input Diode Voltage	V_{IK}	$V_{CC}=4.5V, I_I=-18mA$			-1.2	V	
Input Leakage Current	I_I	$V_{CC}=5.5V, V_I=V_{CC}$ or GND			±1	μA	
V_{CC} or GND Current	I_{CC}	$V_{CC}=5.5V, V_I=5.5V$ or GND, $I_O=0$			1	μA	
Control input	C_I	$V_O=3V$ or 0		3		pF	
I/O Capacitance (OFF)	C_{IO}	$V_O=3V$ or 0, $\overline{OE}=V_{CC}$		4		pF	
Resistor between two ports	R_{ON}	$V_{CC}=4V$, TYP at $V_{CC}=4V$, $V_I=2.4V, I_I=15mA$		14	20	Ω	
		$V_{CC}=4.5V, V_I=0V$	$I_I=64mA$		5	7	Ω
			$I_I=30mA$		5	7	Ω
		$V_{CC}=4.5V, V_I=2.4V, I_I=15mA$		10	15	Ω	

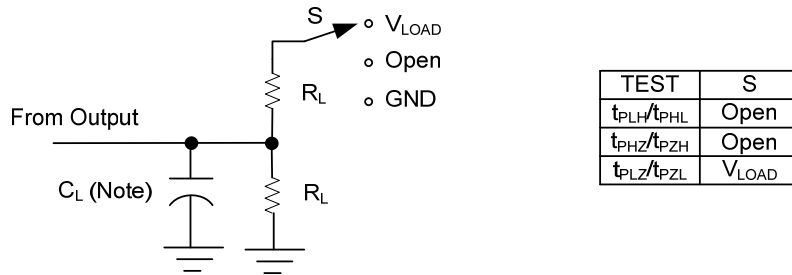
■ DYNAMIC CHARACTERISTICS (Input: $t_R, t_F \leq 2.5ns$; $PRR \leq 10MHz$; $C_L=50pF$)

See Fig. 1 and Fig. 2 for test circuit and waveforms.

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
From input (A or B) to output (B or A) (Note)	t_{pd}	$V_{CC}=4V, C_L=50pF, R_L=500\Omega$			0.35	ns
		$V_{CC}=5V \pm 0.5V, C_L=50pF, R_L=500\Omega$			0.25	ns
From input \overline{OE} to output (A or B)	t_{en}	$V_{CC}=4V, C_L=50pF, R_L=500\Omega$			5.5	ns
		$V_{CC}=5V \pm 0.5V, C_L=50pF, R_L=500\Omega$	1.6		4.9	ns
From input \overline{OE} to output (A or B)	t_{dis}	$V_{CC}=4V, C_L=50pF, R_L=500\Omega$			4.5	ns
		$V_{CC}=5V \pm 0.5V, C_L=50pF, R_L=500\Omega$	1.0		4.2	ns

Notes: 1. t_{pd} : t_{PLH} and t_{PHL} .
 2. t_{en} : t_{PZL} and t_{PZH} .
 3. t_{dis} : t_{PLZ} and t_{PHZ} .

■ TEST CIRCUIT AND WAVEFORMS ($C_L=50\text{pF}$, $R_L=500\Omega$, $V_{LOAD}=7\text{V}$, $V_M=1.5\text{V}$)



Note: C_L includes probe and jig capacitance.

Fig. 1 Load circuitry for switching times.

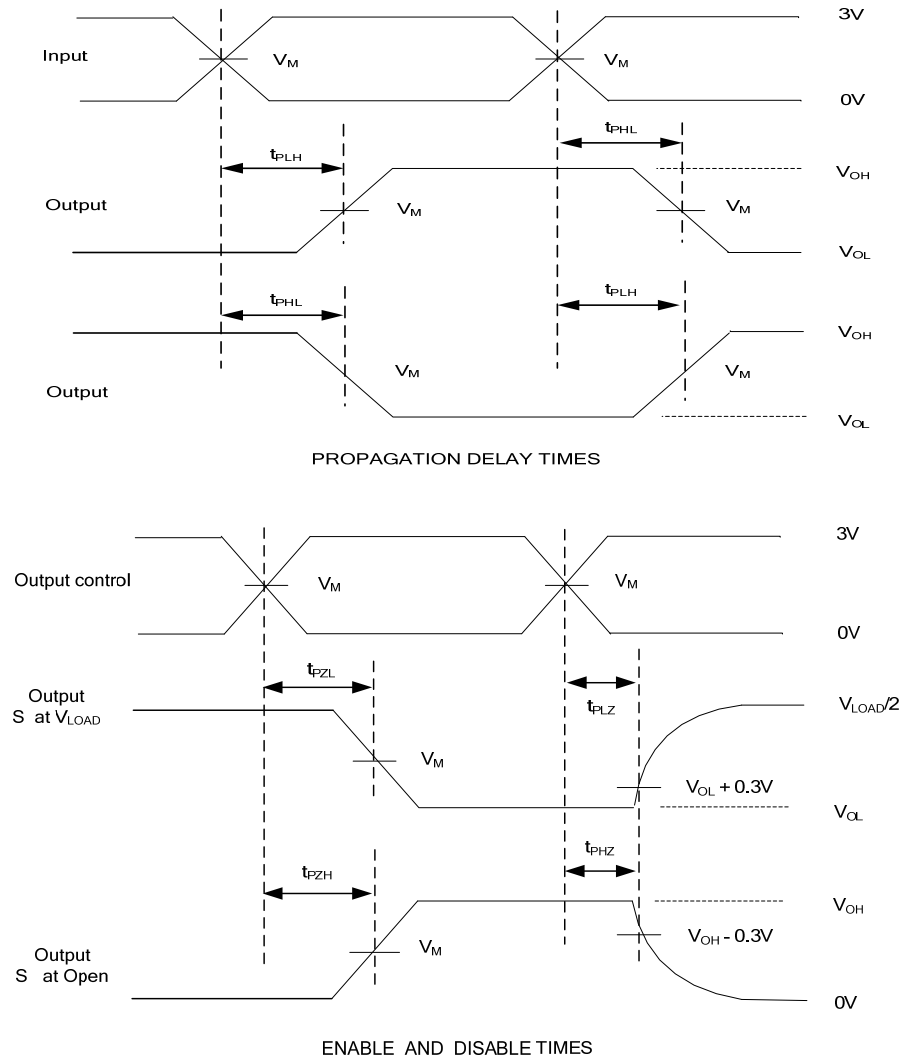


Fig. 2 Propagation delay from input(A) to output(B) and Output transition time.

UTC assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all UTC products described or contained herein. UTC products are not designed for use in life support appliances, devices or systems where malfunction of these products can be reasonably expected to result in personal injury. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. UTC reserves the right to make changes to information published in this document, including without limitation specifications and product descriptions, at any time and without notice. This document supersedes and replaces all information supplied prior to the publication hereof.