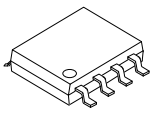
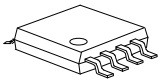
U74CBT3306

CMOS IC

DUAL FET BUS SWITCH



SOP-8



TSSOP-8

■ DESCRIPTION

The **U74CBT3306** dual FET bus switch features independent line switches.

Each switch is disabled when the associated output-enable ($\overline{OE}$) input is high.

■ FEATURES

* 5-Ω Switch Connection Between Two Ports
* TTL-Compatible Input Levels

■ ORDERING INFORMATION

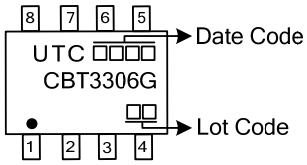
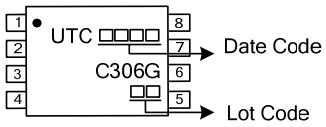
Ordering Number	Package	Packing
U74CBT3306G-S08-R	SOP-8	Tape Reel
U74CBT3306G-P08-R	TSSOP-8	Tape Reel

U74CBT3306G-S08-R

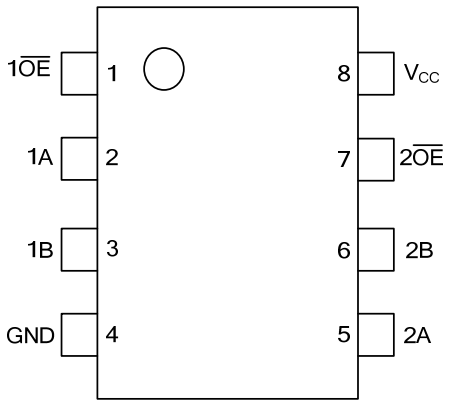
(1) Packing Type
(2) Package Type
(3) Green Package

(1) R: Tape Reel
(2) S08: SOP-8, P08: TSSOP-8
(3) G: Halogen Free and Lead Free

■ MARKING

SOP-8	TSSOP-8
	

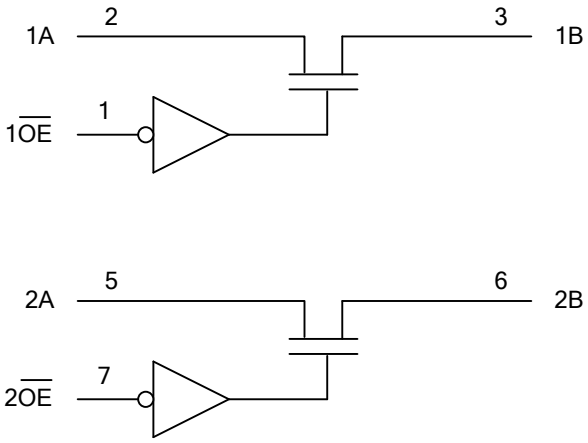
■ PIN CONFIGURATION



■ FUNCTION TABLE

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

■ LOGIC DIAGRAM



■ ABSOLUTE MAXIMUM RATING (T_A=25°C, unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V_{CC}	-0.5 ~ 7	V
Input Voltage range(see Note 1)	V_{IN}	-0.5 ~ 7	V
Input Clamp Current	I_{IK}	-50	mA
Continuous channel current		128	mA
Storage Temperature range	T_{STG}	-65~+150	°C

Notes: 1. The input and output negative-voltage ratings may be exceeded if the input and output clamp-current ratings are observed.
2. The package thermal impedance is calculated in accordance with JESD 51-7.

■ THERMAL DATA

PARAMETER		SYMBOL	RATINGS	UNIT
Junction to Ambient	SOP-8	θ_{JA}	97	°C/W
	TSSOP-8		149	°C/W

■ RECOMMENDED OPERATING CONDITIONS

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

■ ELECTRICAL CHARACTERISTICS (T_A=25°C, unless otherwise specified)

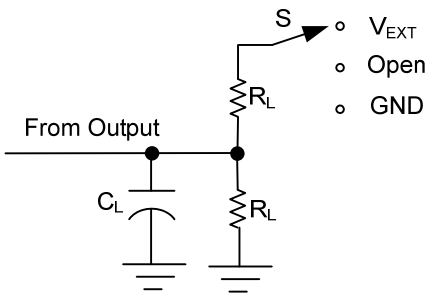
PARAMETER	SYMBOL	TEST CONDITIONS		MIN	TYP	MAX	UNIT
Control Input Clamp Voltage	V_{IK}	V_{CC}=4.5V, I_{IN}=-18mA				-1.2	V
Input Leakage Current	$I_{I(LEAK)}$	V_{CC}=5.5V, V_{IN}=V_{CC} or GND				±1	μA
Quiescent Supply Current	I_{CC}	V_{CC}=5.5V, I_{OUT}=0, V_{IN}=V_{CC} or GND				3	μA
Additional Quiescent Supply Current	ΔI_{CC}	V_{CC}=5.5V, One input at 3.4V, Other inputs at V_{CC} or GND				2.5	mA
Control Input Capacitance	C_{IN}	V_{IN}=3V or 0			3		pF
Input Capacitance	$C_{IO(OFF)}$	V_{OUT}=3V or 0, $\overline{OE}$ =V_{CC}			4		pF
ON-Resistance	R_{ON}	V_{CC}=4V, V_{IN}=2.4V,I_{OUT} =-15mA			14	20	Ω
		V_{CC}=4.5V, V_{IN}=0	I_{OUT}=64mA		5	7	Ω
			I_{OUT}=30mA		5	7	Ω
		V_{CC}=4.5V, V_{IN}=2.4V	I_{OUT}=-15mA		10	15	Ω

■ SWITCHING CHARACTERISTICS (C_L=50pF, R_L=500Ω. see 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			0.35	ns
		V_{CC}=5V±0.5V			0.25	ns
From input $\overline{OE}$ to output (A or B)	t_{en}	V_{CC}=4V			5.6	ns
		V_{CC}=5V±0.5V	1.8		5	ns
From input $\overline{OE}$ to output (A or B)	t_{dis}	V_{CC}=4V			4.6	ns
		V_{CC}=5V±0.5V	1		4.3	ns

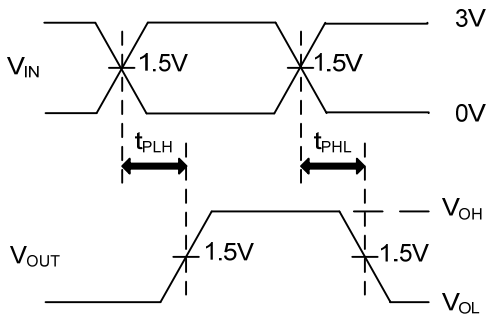
Note: The propagation delay is the calculated RC time constant of the typical ON-state resistance of the switch and the specified load capacitance, when driven by an ideal voltage source (zero output impedance).

■ TEST CIRCUIT AND WAVEFORMS

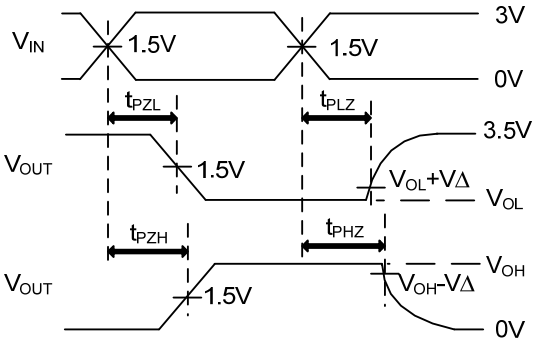


TEST	S
t_{PLH}/t_{PHL}	Open
t_{PHZ}/t_{PZH}	Open
t_{PLZ}/t_{PZL}	V_{EXT}

TEST	V_{CC}	V_I	t_R / t_F	VΔ	V_{EXT}	C_L	R_L
t_{PLH}/t_{PHL}	4V	V_{CC} or GND	≤2.5ns		Open	50pF	500Ω
	5V±0.5V	V_{CC} or GND	≤2.5ns		Open	50pF	500Ω
t_{PLZ}/t_{PZL}	4V	GND	≤2.5ns	0.3V	7V	50pF	500Ω
	5V±0.5V	GND	≤2.5ns	0.3V	7V	50pF	500Ω
t_{PHZ}/t_{PZH}	4V	V_{CC}	≤2.5ns	0.3V	Open	50pF	500Ω
	5V±0.5V	V_{CC}	≤2.5ns	0.3V	Open	50pF	500Ω



PROPAGATION DELAY TIMES



ENABLE AND DISABLE TIMES

Notes: 1. C_L includes probe and jig capacitance.
2. All input pulses are supplied by generators having the following characteristics: PRR≤10MHz, Z_O=50Ω, tr≤2.5ns, tf≤2.5 ns.
3. The outputs are measured one at a time with one transition per measurement.
4. t_{PLZ} and t_{PHZ} are the same as tdis.
5. t_{PZL} and t_{PZH} are the same as ten.
6. t_{PLH} and t_{PHL} are the same as tpd(s).
7. All parameters and waveforms are not applicable to all devices.