



U74CBT3306

CMOS IC

DUAL FET BUS SWITCH

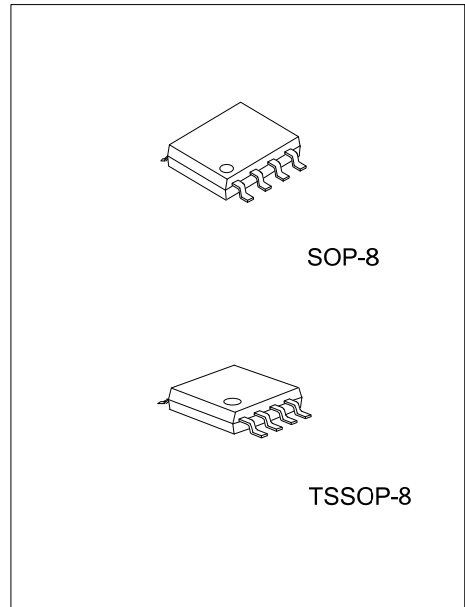
DESCRIPTION

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
Lead Free	Halogen Free		
U74CBT3306L-S08-R	U74CBT3306G-S08-R	SOP-8	Tape Reel
U74CBT3306L-P08-R	U74CBT3306G-P08-R	TSSOP-8	Tape Reel

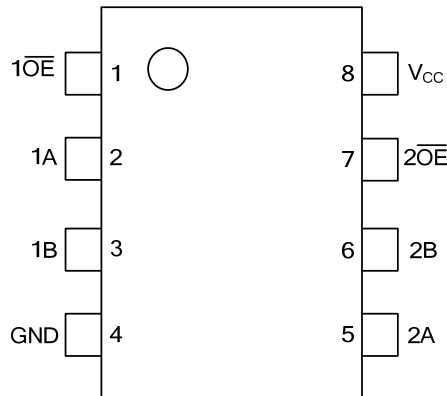
<p>U74CBT3306G-S08-R</p> <p>(1) Packing Type (2) Package Type (3) Green Package</p>	<p>(1) R: Tape Reel (2) S08: SOP-8, P08: TSSOP-8 (3) G: Halogen Free and Lead Free</p>
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MARKING

SOP-8	TSSOP-8
<p>UTC □□□□ → Date Code CBT3306□ L: Lead Free □ G: Halogen Free □□ → Lot Code</p>	<p>UTC □□□□ → Date Code C306□ L: Lead Free □ G: Halogen Free □□ → Lot Code</p>



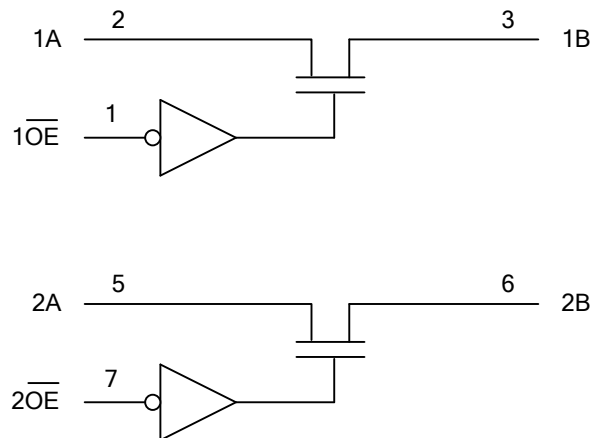
■ PIN CONFIGURATION



■ FUNCTION TABLE

INPUT	FUNCTION
\overline{OE}	
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

Note 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	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)

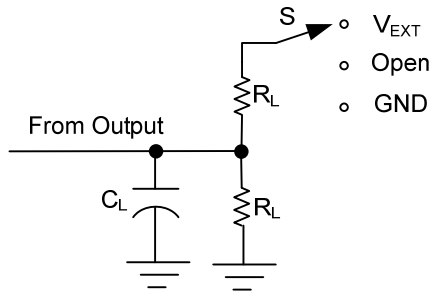
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Control Input Clamp Voltage	V _{IK}	V _{CC} =4.5V, I _{IN} =-18mA			-1.2	V
Input Leakage Current	I _{I(LEAK)}	V _{CC} =5.5V, V _{IN} =V _{CC} or GND			±1	µA
Quiescent Supply Current	I _{CC}	V _{CC} =5.5V, I _{OUT} =0, V _{IN} =V _{CC} or GND			3	µA
Additional 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
		V _{CC} =4.5V, V _{IN} =0, 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

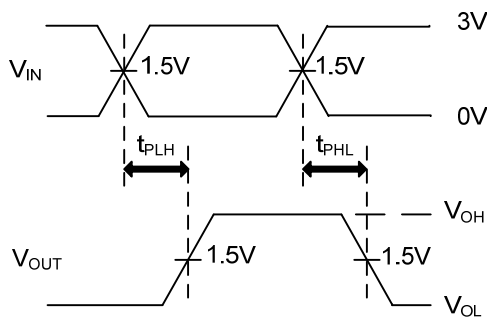
Note: The propagation delay is the calculated RC time constant of the typical ON-state resistance of the switch and the specified load capacitance, when driven by an ideal voltage source (zero output impedance).

■ TEST CIRCUIT AND WAVEFORMS

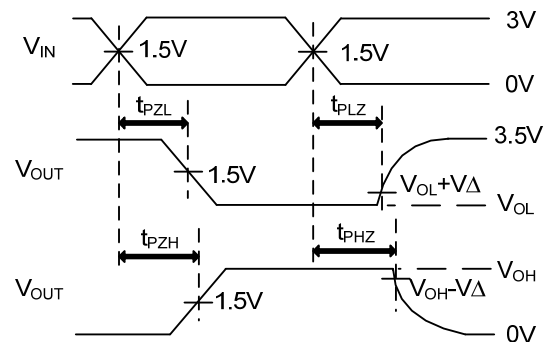


TEST	S
t_{PLH}/t_{PHL}	Open
t_{PHZ}/t_{PZH}	Open
t_{PLZ}/t_{PZL}	V_{EXT}

TEST	V_{CC}	V_i	t_R / t_F	V_{Δ}	V_{EXT}	C_L	R_L
t_{PLH}/t_{PHL}	4V	V_{CC} or GND	$\leq 2.5\text{ns}$		Open	50pF	500 Ω
	$5V \pm 0.5V$	V_{CC} or GND	$\leq 2.5\text{ns}$		Open	50pF	500 Ω
t_{PLZ}/t_{PZL}	4V	GND	$\leq 2.5\text{ns}$	0.3V	7V	50pF	500 Ω
	$5V \pm 0.5V$	GND	$\leq 2.5\text{ns}$	0.3V	7V	50pF	500 Ω
t_{PHZ}/t_{PZH}	4V	V_{CC}	$\leq 2.5\text{ns}$	0.3V	Open	50pF	500 Ω
	$5V \pm 0.5V$	V_{CC}	$\leq 2.5\text{ns}$	0.3V	Open	50pF	500 Ω



PROPAGATION DELAY TIMES



ENABLE AND DISABLE TIMES

- Notes:
- C_L includes probe and jig capacitance.
 - All input pulses are supplied by generators having the following characteristics: $PRR \leq 10\text{MHz}$, $Z_O = 50\Omega$, $t_r \leq 2.5\text{ns}$, $t_f \leq 2.5\text{ns}$.
 - The outputs are measured one at a time with one transition per measurement.
 - t_{PLZ} and t_{PHZ} are the same as t_{dis} .
 - t_{PZL} and t_{PZH} are the same as t_{en} .
 - t_{PLH} and t_{PHL} are the same as $t_{pd}(s)$.
 - All parameters and waveforms are not applicable to all devices.

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