

TEST CIRCUITS

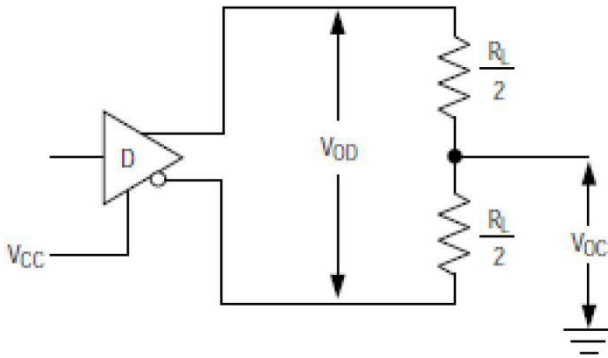


Figure 1. Driver V_{OD} and V_{OC}

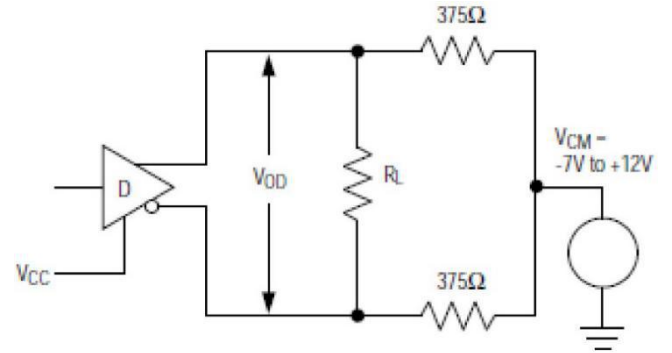


Figure 2. Driver V_{OD} with Varying Common-Mode Voltage

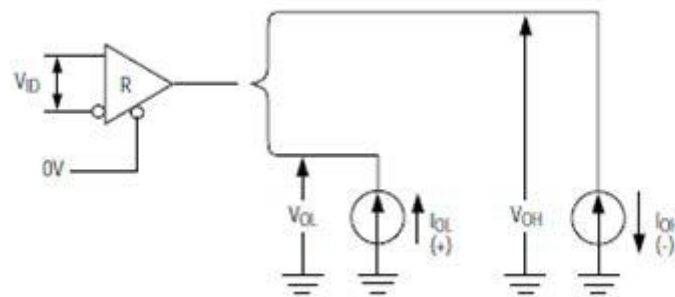


Figure 3. Receiver V_{OH} and V_{OL}

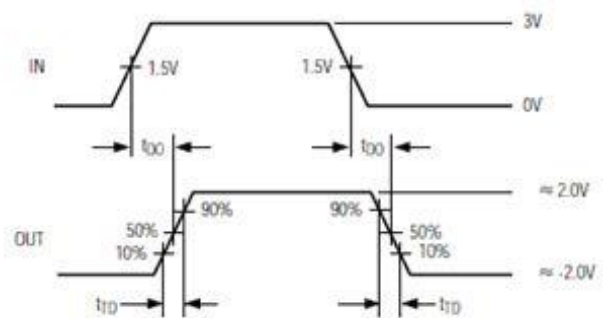
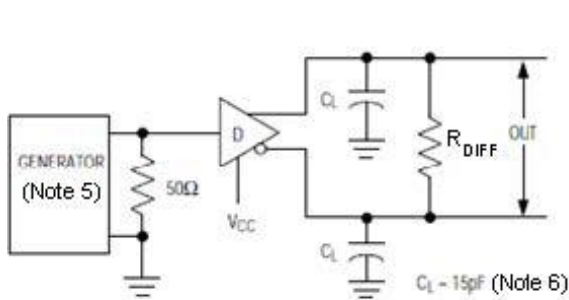


Figure 4. Driver Differential Output Delay and Transition Times

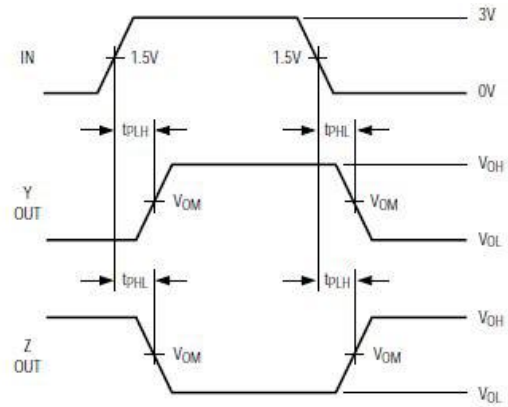
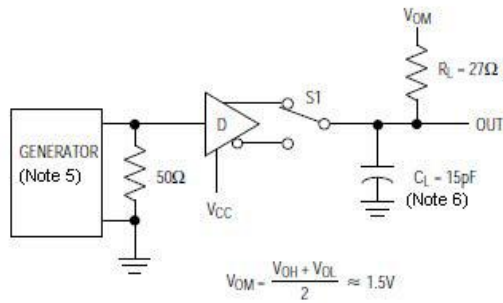


Figure 5. Driver Propagation Times

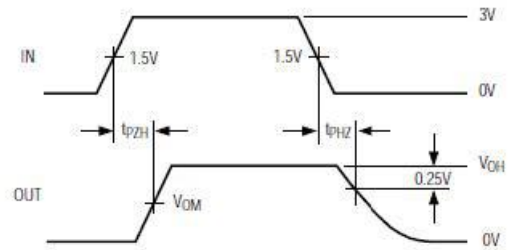
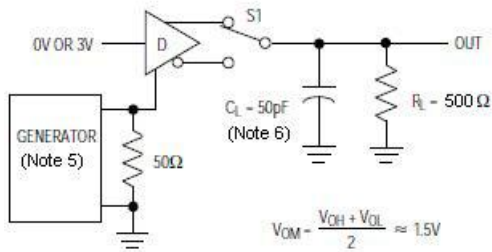


Figure 6. Driver Enable and Disable Times (t_{PZH} , t_{PSH} , t_{PHZ})

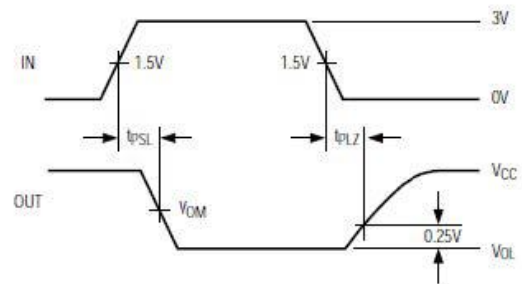
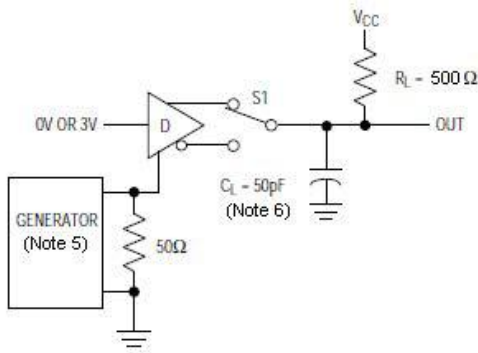


Figure 7. Driver Enable and Disable Times (t_{PZL} , t_{PSL} , t_{PLZ})

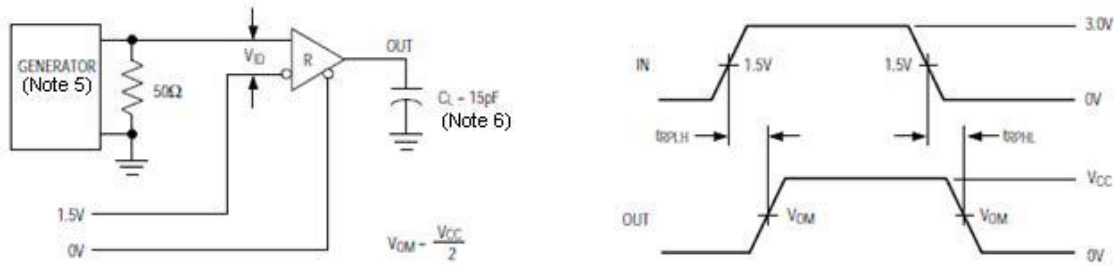


Figure 8. Receiver Propagation Delay

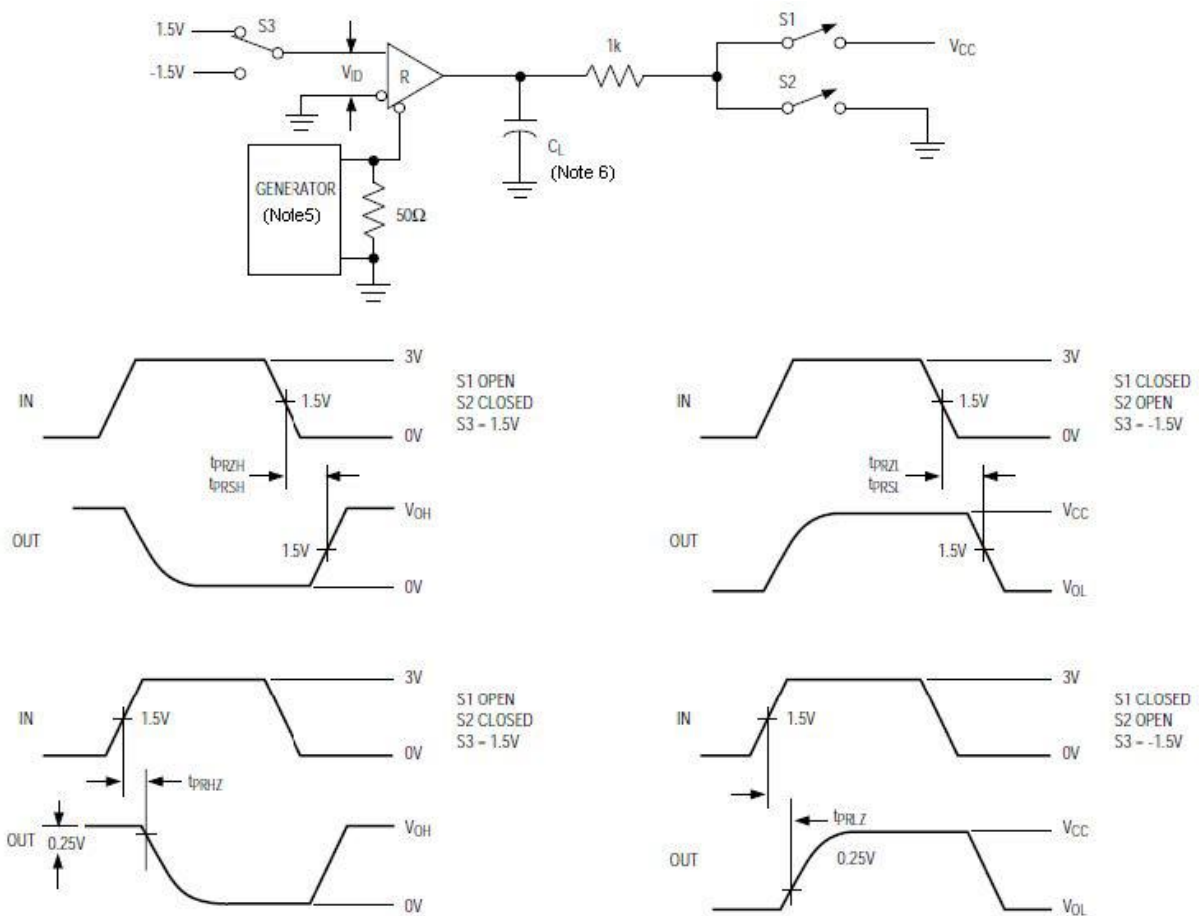


Figure 9. Receiver Enable and Disable Times

Note 5: The input pulse is supplied by a generator with the following characteristics: PRR = 250kHz, 50% duty cycle, $t_r \leq 6.0\text{ns}$, $Z_o = 50\Omega$.

Note 6: C_L includes probe and stray capacitance.

Function Tables

X-don't care

Z-high impedance

Transmitting				
INPUTS			OUTPUTS X	
RE	DE	DI	Z	Y
X	1	1	0	1
X	1	0	1	0
0	0	X	Z	Z
1	0	X	Z	Z

Receiving			
INPUTS			OUTPUTS
RE	DE	A-B	RO
0	0	+2.0V	1
0	0	-2.0V	0
0	0	open	1
1	0	X	Z

Typical Information

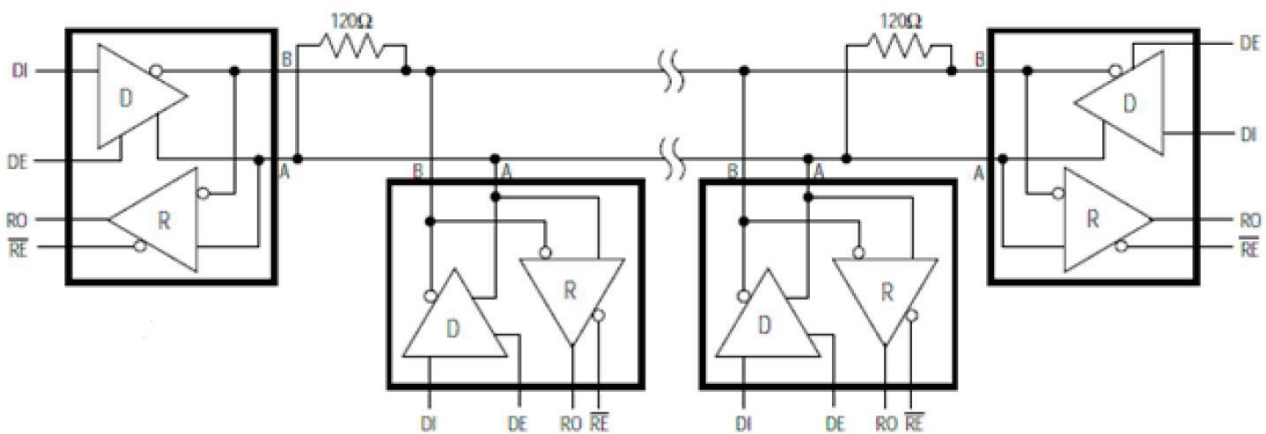


Figure 10. CBM485 Typical RS-485 Network

Driver Output Protection

Excessive output current and power dissipation caused by faults or by bus contention are prevented by two mechanisms. A foldback current limit on the output stage provides immediate protection against short circuits over the whole common-mode voltage range. In addition, a thermal shutdown circuit forces the driver outputs into a high-impedance state if the die temperature rises excessively.

Propagation Delay

Skew time is simply the difference between the low-to-high and high-to-low propagation delay. Small driver/receiver skew times help maintain a symmetrical mark-space ratio (50% duty cycle).

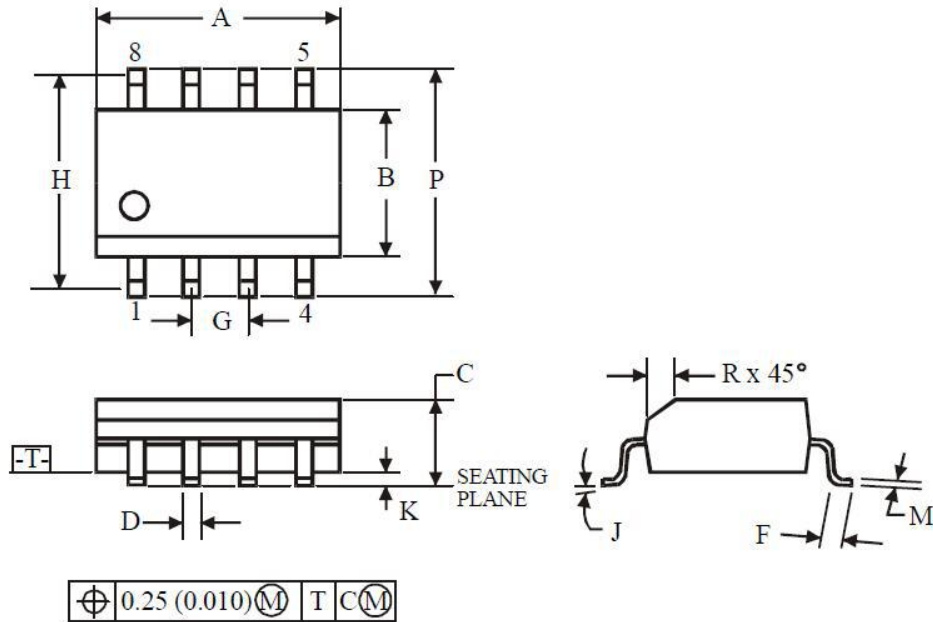
The receiver skew time, $|t_{PRLH} - t_{PRHL}|$, is under 10ns. The driver skew times are 5ns for the CBM485.

Typical Applications

CBM485 transceivers are designed for bidirectional data communications on multipoint bus transmission lines. Figure 10 shows typical network applications circuits. These parts can also be used as line repeaters, with cable lengths longer than 4000 feet.

To minimize reflections, the line should be terminated at both ends in its characteristic impedance, and stub lengths off the main line should be kept as short as possible.

PACKAGE



- NOTES:**
1. Dimensions A and B do not include mold flash or protrusion.
 2. Maximum mold flash or protrusion 0.15 mm (0.006) per side for A; for B - 0.25 mm (0.010) per side.

Symbol	Dimensions ,mm	
	Min	Max
A	4.8	5
B	3.8	4
C	1.35	1.75
D	0.33	0.51
F	0.4	1.27
G	1.27	
H	5.72	
J	0°	8°
K	0.1	0.25
M	0.19	0.25
P	5.8	6.2
R	0.25	0.5

PACKAGE/ORDERING INFORMATION

PRODUCT	ORDERING NUMBER	TEMPRANGE	PACKAGE	PAKEAGE MARKING	TRANSPOT MEDIA,QUANTILY
CBM485	CBM485AS8	-40°C~125°C	SOIC-8(SOP8)	CBM485A	Tape and Reel,2500
	CBM485ACS8	-0°C~70°C	SOIC-8(SOP8)	CBM485C	Tape and Reel,2500