

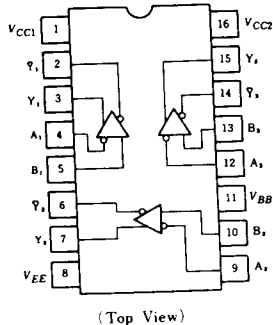
HD10116

Triple Line Receivers

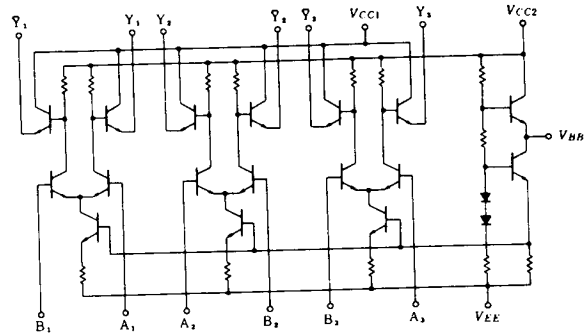
The HD10116 is designed for use in sensing differential signals over long lines. The bias supply (V_{BB}) is made available to make the device useful as a Schmitt trigger, or in other applications where a stable reference voltage is necessary. Active

current source provides these receivers with excellent common mode noise rejection. If any amplifier in a package is not used, one input of that amplifier must be connected to V_{BB} to prevent upsetting the current source bias network.

PIN ARRANGEMENT



CIRCUIT SCHEMATIC



DC CHARACTERISTICS ($V_{EE} = -5.2V$, $T_a = -30 \sim +85^\circ C$)

DC CHARACTERISTICS (V _{EE} = -5.2V, I _B = 10μA, I _{CE} = 10mA)							
Item	Symbol	Test Condition		min	typ	max	Unit
Supply Current	I _{EE} *		25°C	—	17	21	mA
Input Current	I _{IN} **	V _{IN} = -0.810V	25°C	—	—	95	μA
	I _{CBO} **	V _{IN} = -5.2V	25°C	—	—	1.0	μA
Output Voltage	V _{OH} ***	V _{IN} = -0.890V or V _{IL} = -1.890V	-30°C	-1.060	—	-0.890	V
		V _{IN} = -0.810V or V _{IL} = -1.850V	25°C	-0.960	—	-0.810	
		V _{IN} = -0.700V or V _{IL} = -1.825V	85°C	-0.890	—	-0.700	
	V _{OL} ***	V _{IL} = -1.890V or V _{IH} = -0.890V	-30°C	-1.890	—	-1.675	V
		V _{IL} = -1.850V or V _{IH} = -0.810V	25°C	-1.850	—	-1.650	
		V _{IL} = -1.825V or V _{IH} = -0.700V	85°C	-1.825	—	-1.615	
Output Threshold Voltage	V _{OHA} ***	V _{IHA} = -1.205V or V _{ILA} = -1.500V	-30°C	-1.080	—	—	V
		V _{IHA} = -1.105V or V _{ILA} = -1.475V	25°C	-0.980	—	—	
		V _{IHA} = -1.035V or V _{ILA} = -1.440V	85°C	-0.910	—	—	
	V _{OLA} ***	V _{ILA} = -1.500V or V _{IHA} = -1.205V	-30°C	—	—	-1.655	V
		V _{ILA} = -1.475V or V _{IHA} = -1.105V	25°C	—	—	-1.630	
		V _{ILA} = -1.440V or V _{IHA} = -1.035V	85°C	—	—	-1.595	
Reference Voltage	V _{BB}		-30°C	-1.420	—	-1.280	V
			25°C	-1.350	—	-1.230	
			85°C	-1.295	—	-1.150	

- * B_n input is connected to V_{BB} and V_{IL} min is supplied to A_n input.
- ** B_n input is connected to V_{BB} and V_{IL} min is supplied to A input.
- *** Other inputs are connected to V_{BB} and each one input of other receiver is connected to V_{BB} .

■AC CHARACTERISTICS ($V_{EE} = -3.2\text{V}$, $V_{CC} = +2.0\text{V}$, $T_a = -30 \sim +85^\circ\text{C}$)

Item	Symbol	Test Condition	min	typ	max	Unit	
Propagation Delay Time	t_{PLH}	$R_L=50\Omega$, Other inputs = V_{HH}	-30°C	1.0	—	3.1	ns
			25°C	1.0	2.0	2.9	
			85°C	1.1	—	3.3	
	t_{PHL}		-30°C	1.0	—	3.1	ns
			25°C	1.0	2.0	2.9	
			85°C	1.1	—	3.3	
Rise/Fall Time	t_{TLH}		-30°C	1.1	—	3.6	ns
			25°C	1.1	2.0	3.3	
			85°C	1.1	—	3.7	
	t_{THL}	-30°C	1.1	—	3.6	ns	
		25°C	1.1	2.0	3.3		
		85°C	1.1	—	3.7		

Note) Please refer to test circuit and waveform of common item.