

DC ELECTRICAL CHARACTERISTICS: Unless otherwise stated these specifications apply for $T_A = 0^\circ\text{C}$ to $+70^\circ\text{C}$, $V_{CC} = 5\text{V} \pm 5\%$, Input Common Mode Range $\pm 7\text{V}$, $T_A = T_J$

PARAMETERS	SYMBOL	TEST CONDITIONS		UC5180C		UNITS
				MIN	MAX	
DC Input Resistance	R_{IN}	$3\text{V} \leq V_{IN} \leq 25\text{V}$		3	7	$\text{k}\Omega$
Failsafe Output Voltage	V_{OFS}	Inputs Open or Shorted Together, or One Input Open and One Grounded	$0 \leq I_{OUT} \leq 8\text{mA}$, $V_{FAILSAFE} = 0\text{V}$		0.45	V
			$0 \geq I_{OUT} \geq -400\ \mu\text{A}$, $V_{FAILSAFE} = V_{CC}$	2.7		
Differential Input High Threshold	V_{TH}	$V_{OUT} = 2.7\text{V}$, $I_{OUT} = 440\ \mu\text{A}$ (See Figure 1)	$R_s = 0$ (Note 2)	50	200	mV
			$R_s = 500$ (Note 2)		400	
Differential Input Low Threshold	V_{TL}	$V_{OUT} = 0.45\text{V}$, $I_{OUT} = 440\ \mu\text{A}$ (See Figure 1)	$R_s = 0$ (Note 2)	-200	-50	mV
			$R_s = 500$ (Note 2)	-400		
Hysteresis	V_H	$F_s = 0\text{V}$ or V_{CC} (See Figure 1)		50	140	mV
Open Circuit Input Voltage	V_{ICC}				75	mV
Input Capacitance	C_i				20	pF
High Level Output Voltage	V_{CH}	$V_{ID} = 1\text{V}$, $I_{OUT} = -440\ \mu\text{A}$		2.7		V
Low Level Output Voltage	V_{OL}	$V_{ID} = -1\text{V}$ (Note 3)	$I_{OUT} = 4\ \text{mA}$		0.4	V
			$I_{OUT} = 8\ \text{mA}$		0.45	
Short Circuit Output Current	I_{OS}	Note 4		20	100	mA
Supply Current	I_{CC}	$4.75\text{V} \leq V_{CC} \leq 5.25\text{V}$			35	mA
Input Current	I_{IN}	Other Inputs Grounded	$V_{IN} = +10\text{V}$		3.25	mA
			$V_{IN} = -10\text{V}$	-3.25		

Note 2: R_s is a resistor in series with each input.

Note 3: Measured after 100ms warm up (at 0°C)

Note 4: Only 1 output may be shorted at one time and then only for a maximum of 1 sec.

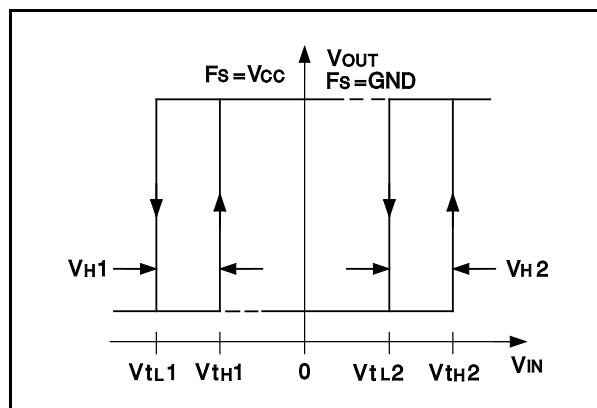


Figure 1. V_{tL} , V_{tH} , V_H Definition

AC ELECTRICAL CHARACTERISTICS: $V_{CC} = 5\text{V} \pm 5\%$, $T_A = 0^\circ\text{C}$ to $+70^\circ\text{C}$, Figure 2, $T_A = T_J$.

PARAMETERS	SYMBOL	TEST CONDITIONS	UC5180C		UNITS
			MIN	MAX	
Propagation Delay - Low to High	t_{PLH}	$C_L = 50\text{pF}$, $V_{IN} = \pm 500\text{mV}$		550	ns
Propagation Delay - High to Low	t_{PHL}	$C_L = 50\text{pF}$, $V_{IN} = \pm 500\text{mV}$		550	ns
Acceptance Input Frequency	f_A	Unused Input Grounded, $V_{IN} = \pm 200\text{mV}$		0.1	MHz
Rejectable Input Frequency	f_R	Unused Input Grounded, $V_{IN} = \pm 500\text{mV}$	5.5		MHz

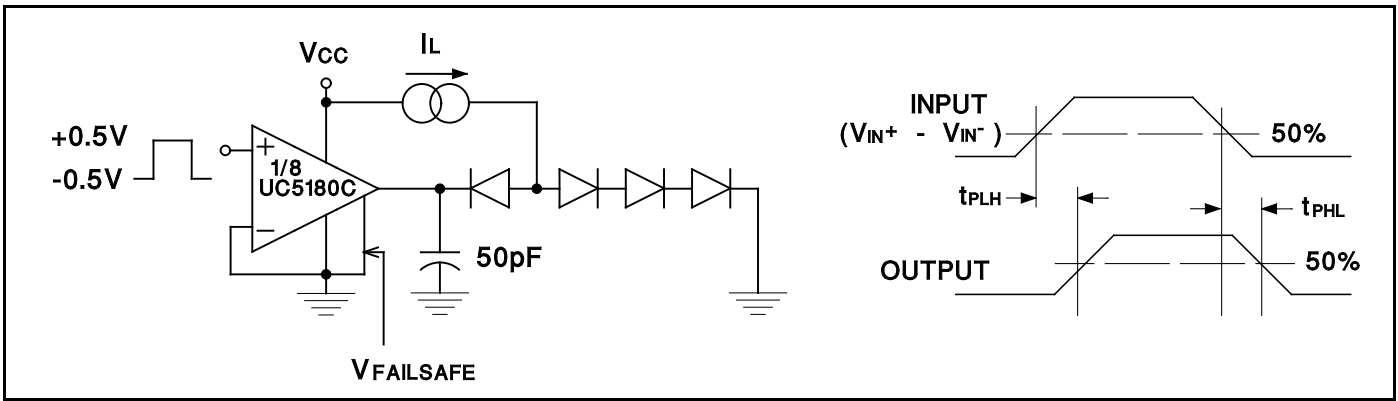


Figure 2. AC Test Circuit

APPLICATIONS INFORMATION

Failsafe Operation

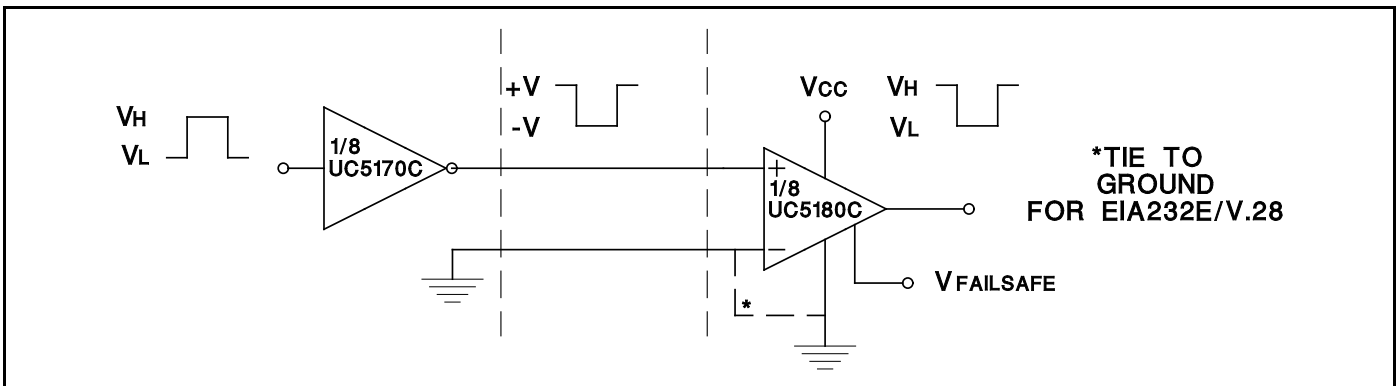
These devices provide a failsafe operating mode to guard against input fault conditions as defined in EIA422A and EIA423A standards. These fault conditions are (1) drive in power-off condition, (2) receiver not interconnected with driver, (3) open-circuited interconnecting cable, and (4) short-circuited interconnecting cable. If one of these four fault conditions occurs at the inputs of a receiver, then the output of that receiver is driven to a known logic level. The receiver is programmed by connecting the failsafe input to Vcc or ground. A connection to Vcc provides a logic "1" output

under fault conditions, while a connection to ground provides a logic "0". There are two failsafe pins (Fs1 and Fs2) on the UC5180C where each provides common failsafe control for four receivers.

Input Filtering (UC5180C)

The UC5180C has input filtering for additional noise rejection. This filtering is a function of both signal level and frequency. For the specified input (5.5 MHz at ±500 mV) the input stage filter attenuates the signal such that the output stage threshold levels are not exceeded and no change of state occurs at the output.

EIA232E/V.28 / EIA423A/V.10 DATA TRANSMISSION



EIA422A/V.11 DATA TRANSMISSION

