

LM5534/LM7534 and LM5535/LM7535 electrical characteristics

LM5534/LM5535: The following apply for $-55^{\circ}\text{C} \leq T_A \leq 125^{\circ}\text{C}$, $V^+ = 5\text{V} \pm 5\%$, $V^- = -5\text{V} \pm 5\%$ (Note 1)

PARAMETER	MIN	TYP	MAX	UNIT	TEST CONDITIONS (EACH AMPLIFIER)					COMMENTS
					DIFF. INPUT	REF. INPUT	STROBE INPUT	LOGIC OUTPUT	SUPPLY VOLT.	
Differential Input Threshold Voltage (V_{TH}) (Note 2)	10(8)	15		mV	$\pm V_{TH}$	15 mV	+5V	+5.25V	$\pm 5\text{V} \pm 5\%$	Logic Output <250 μA
		15	20(22)	mV	$\pm V_{TH}$	15 mV	+5V	+20 mA	$\pm 5\text{V} \pm 5\%$	Logic Output <0.4V
	35(33)	40		mV	$\pm V_{TH}$	40 mV	+5V	+5.25V	$\pm 5\text{V} \pm 5\%$	Logic Output <250 μA
		40	45(47)	mV	$\pm V_{TH}$	40 mV	+5V	+20 mA	$\pm 5\text{V} \pm 5\%$	Logic Output <0.4V
Differential & Reference Input Bias Current		30	100	μA	0V	0V	+5.25V		$\pm 5.25\text{V}$	

LM7534/LM7535: The following apply for $0^{\circ}\text{C} \leq T_A \leq 70^{\circ}\text{C}$, $V^+ = 5\text{V} \pm 5\%$, $V^- = -5\text{V} \pm 5\%$

Differential Input Threshold Voltage (V_{TH}^-) (Note 3)	11(8)	15		mV	$\pm V_{TH}$	15 mV	+5V	+5.25V	$\pm 5\text{V} \pm 5\%$	Logic Output <250 μA
		15	19(22)	mV	$\pm V_{TH}$	15 mV	+5V	+20 mA	$\pm 5\text{V} \pm 5\%$	Logic Output <0.4V
	36(33)	40		mV	$\pm V_{TH}$	40 mV	+5V	+5.25V	$\pm 5\text{V} \pm 5\%$	Logic Output <250 μA
		40	44(47)	mV	$\pm V_{TH}$	40 mV	+5V	+20 mA	$\pm 5\text{V} \pm 5\%$	Logic Output <0.4V
Differential & Reference Input Bias Current		30	75	μA	0V	0V	+5.25V		$\pm 5.25\text{V}$	

LM5534/LM5535: The following apply for $-55^{\circ}\text{C} \leq T_A \leq 125^{\circ}\text{C}$, $V^+ = 5\text{V} \pm 5\%$, $V^- = -5\text{V} \pm 5\%$

LM7534/LM7535: The following apply for $0^{\circ}\text{C} \leq T_A \leq 70^{\circ}\text{C}$, $V^+ = 5\text{V} \pm 5\%$, $V^- = -5\text{V} \pm 5\%$

Diff. Input Offset Current		0.5		μA	0V	0V	+5.25V		$\pm 5.25\text{V}$	
Logic "0" Input Voltage			0.8	V	40 mV	20 mV	+0.8V	+5.25V	$\pm 4.75\text{V}$	Logic Output <250 μA
Logic "1" Input Voltage	2.0			V	40 mV	20 mV	+2.0V	+20 mA	$\pm 4.75\text{V}$	Logic Output <0.4V
Logic "0" Input Current		-1	-1.6	mA	40 mV	20 mV	+0.4V		$\pm 5.25\text{V}$	
Logic "1" Input Current		5	40	μA	0V	20 mV	+2.4V		$\pm 5.25\text{V}$	
Logic "1" Input Current		0.02	1	mA	0V	20 mV	+5.25V		$\pm 5.25\text{V}$	
Logic "0" Output Voltage		0.25	0.40	V	40 mV	20 mV	+2V	+20 mA	$\pm 4.75\text{V}$	
Output Leakage Current		0.01	250	μA	40 mV	20 mV	+0.8V	+5.25V	$\pm 4.75\text{V}$	
V^+ Supply Current		28	38	mA	0V	20 mV	0V		$\pm 5.25\text{V}$	
V^- Supply Current		-13	-18	mA	0V	20 mV	0V		$\pm 5.25\text{V}$	

LM5534/LM5535 and LM7534/LM7535: The following apply for $T_A = 25^{\circ}\text{C}$, $V^+ = 5\text{V}$, $V^- = -5\text{V}$

AC Common-Mode Input Firing Voltage		± 2.5		V	PULSE	20 mV	+5V	SCOPE		
Propagation Delays:										
Differential Input to Logical "1" Output		24		ns		20 mV				AC Test Circuit
Differential Input to Logical "0" Output		20	40	ns		20 mV				AC Test Circuit
Strobe Input to Logical "1" Output		16		ns		20 mV				AC Test Circuit
Strobe Input to Logical "0" Output		10	30	ns		20 mV				AC Test Circuit
Differential Input Overload Recovery Time		10		ns						
Common-Mode Input Overload Recovery Time		5		ns						
Min. Cycle Time		200		ns						

Note 1: For $0^{\circ}\text{C} \leq T_A \leq 70^{\circ}\text{C}$ operation, electrical characteristics for LM5534 and LM5535 are guaranteed the same as LM7534 and LM7535 respectively.

Note 2: Limits in parentheses pertain to LM5535, other limits pertain to LM5534

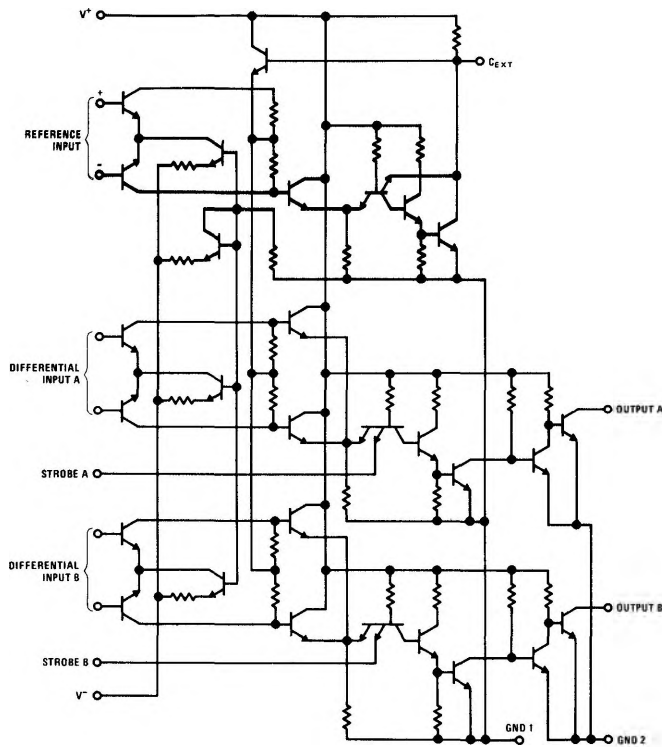
Note 3: Limits in parentheses pertain to LM7535, other limits pertain to LM7534

Note 4: Positive current is defined as current into the referenced pin.

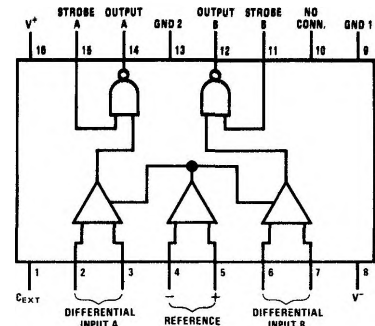
Note 5: Pin 1 to have ≥ 100 pF capacitor connected to ground.

LM5534/LM7534 and LM5535/LM7535

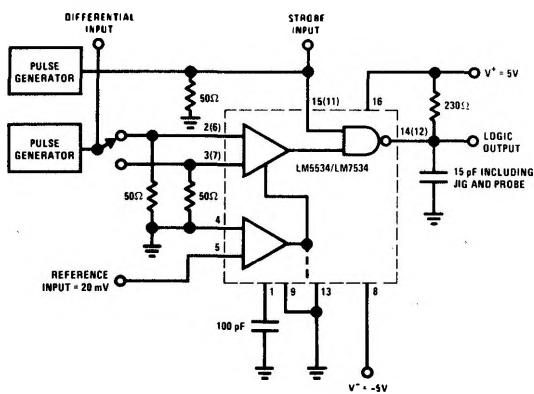
schematic diagram



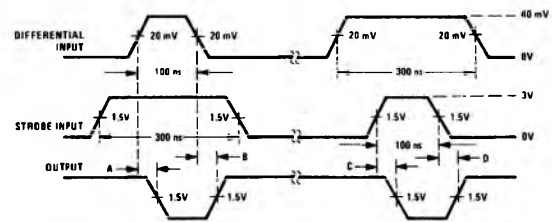
connection diagram



AC test circuit



voltage waveforms



1. Pulse generators have the following characteristics:
 $2\tau_{\text{OUT}} = 50\Omega$, $t_r = t_f = 15(\pm 5)$ ns, PRR = 1 MHz.
2. Propagation delays:
 A = Differential input to logical "0" output
 B = Differential input to logical "1" output
 C = Strobe input to logical "0" output
 D = Strobe input to logical "1" output