

ORDERING INFORMATION

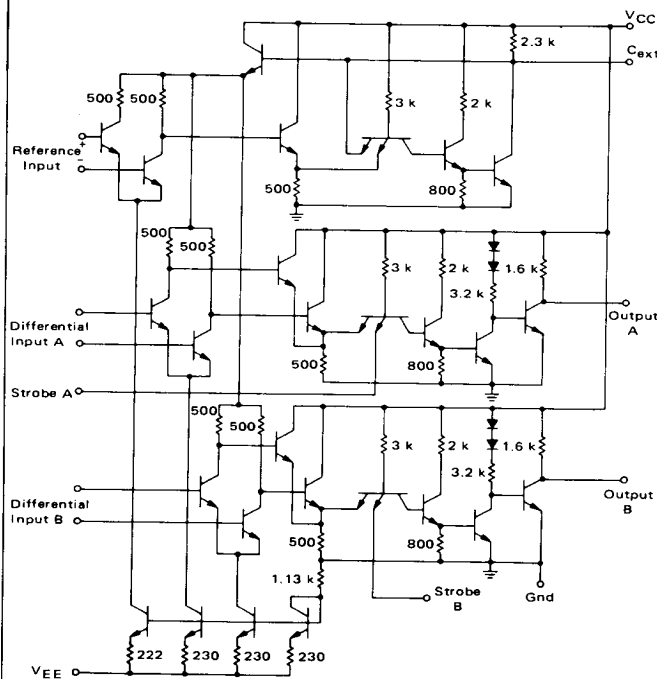
Device	Temperature Range	Package
MC5524L	-55°C to +125°C	Ceramic DIP
MC5525L	-55°C to +125°C	Ceramic DIP
MC7524L	0°C to +70°C	Ceramic DIP
MC7524P	0°C to +70°C	Plastic DIP
MC7525L	0°C to +70°C	Ceramic DIP
MC7525P	0°C to +70°C	Plastic DIP

DUAL SENSE AMPLIFIERS

This dual sense amplifier is designed for use with high-speed memory systems. Low level pulses originating in the memory are converted to logic levels compatible with MDTL and MTTL circuits.

- Adjustable Threshold Voltage Levels
- High-Speed, Fast Recovery Time
- Time and Amplitude Signal Discrimination
- High dc Logic Noise Margin
1.0 Volt typ
- Good Fan-Out Capability
- Independent Strobing
- Separate Logic Outputs

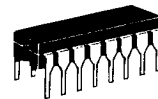
SCHEMATIC DIAGRAM



MC7524 MC5524
MC7525 MC5525

DUAL HIGH-SPEED SENSE AMPLIFIERS

SILICON MONOLITHIC
INTEGRATED CIRCUIT

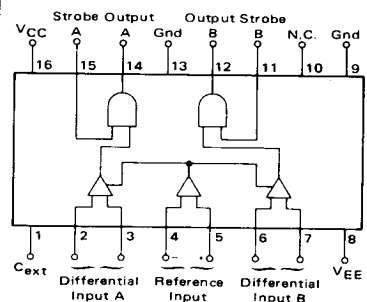


L SUFFIX
CERAMIC PACKAGE
CASE 620



P SUFFIX
PLASTIC PACKAGE
CASE 648
(MC7524 and MC7525
Only)

PIN CONNECTIONS



TRUTH TABLE

Differential Input	Strobe Input	Output
0	L	L
1	L	L
0	H	L
1	H	H

Where:

H = High Logic State

L = Low Logic State

0 = $V_{in} < V_{TH}$

1 = $V_{in} > V_{TH}$

MC7524, MC7525 / MC5524, MC5525

MAXIMUM RATINGS (T_A = +25°C unless otherwise noted.)

Rating	Symbol	Value	Unit
Power Supply Voltage	V _{CC} V _{EE}	+7.0 -7.0	V _{dc} V _{dc}
Differential Input Voltages	V _{in} or V _{ref}	±5.0	V _{dc}
Power Dissipation Derate above T _A = +25°C	P _D	575 3.85	mW mW/°C
Operating Ambient Temperature Range	MC5524, MC5525 MC7524, MC7525	T _A	-55 to +125 0 to +70
Storage Temperature Range	T _{stg}	-55 to +150	°C

ELECTRICAL CHARACTERISTICS (V_{CC} = +5.0 V, V_{EE} = -5.0 V, T_A = T_{high} to T_{low} unless otherwise noted.)

Characteristic	Symbol	Min	Typ	Max	Unit
Input Threshold Voltage (V _{ref} = 15 mV)	V _{th}	11	15	19	mV
MC5524, MC7524		8.0	15	22	
MC5525, MC7525		36	40	44	
(V _{ref} = 40 mV)		33	40	47	
MC5524, MC7524		10	15	20	
MC5525, MC7525		8.0	15	22	
(V _{ref} = 15 mV)	V _{th}	10	15	20	mV
MC5524		8.0	15	22	
MC5525		35	40	45	
(V _{ref} = 40 mV)		33	40	47	
MC5524		33	40	47	
MC5525		33	40	47	
Input Common-Mode Firing Voltage (V _{ref} = 20 mV, V _{IH(S)} = 5.0 V)	V _{ICF}	—	±3.0	—	Volts
Input Bias Current (V _{CC} = 5.25 V, V _{EE} = -5.25 V, T _A = -55°C to 0°C) MC5524, MC5525 (V _{CC} = 5.25 V, V _{EE} = -5.25 V, T _A = 0°C to T _{high}) MC7524, MC7525	I _{IB}	—	— 30	100 75	μA
Input Offset Current (V _{CC} = 5.25 V, V _{EE} = -5.25 V)	I _{IO}	—	0.5	—	μA
Differential Input Impedance (f = 1.0 kHz)	Z _{id}	—	2.0	—	k ohms
Stroke Input Voltage — High Logic State	V _{IH(S)}	2.0	—	—	Volts
Stroke Input Voltage — Low Logic State	V _{IL(S)}	—	—	0.8	Volt
Stroke Input Current — Low Logic State (V _{IL(S)} = 0.4 V)	I _{IL(S)}	—	-1.0	-1.6	mA
Stroke Input Current — High Logic State (V _{IH(S)} = 2.4 V) (V _{IH(S)} = 5.25 V)	I _{IH(S)}	— —	— —	40 1.0	μA mA
Output Voltage — High Logic State (V _{CC} = 4.75 V, V _{EE} = -4.75 V, I _{OH} = -400 μA)	V _{OH}	2.4	3.9	—	Volts
Output Voltage — Low Logic State (V _{CC} = 4.75 V, V _{EE} = -4.75 V, I _{OL} = 16 mA)	V _{OL}	—	0.25	0.4	Volt
Short-Circuit Output Current (V _{CC} = 5.25 V, V _{EE} = -5.25 V)	I _{OS}	2.1	—	3.5	mA
Power Supply Currents (V _{CC} = 5.25 V, V _{EE} = -5.25 V, T _A = 25°C)	I _{CC} I _{EE}	— —	25 -15	40 -20	mA

*T_{high} = 125°C for MC5524 and MC5525

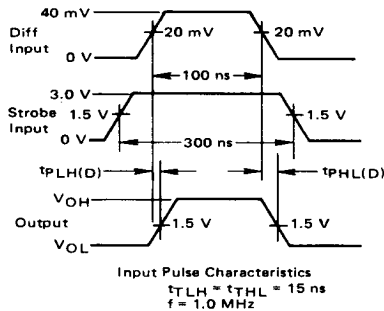
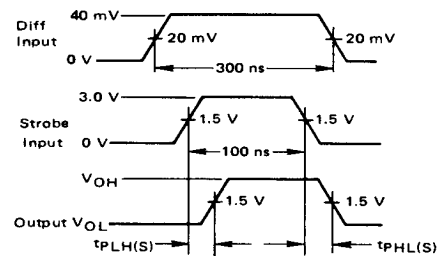
T_{high} = 70°C for MC7524 and MC7525

T_{low} = -55°C for MC5524 and MC5525

T_{low} = 0°C for MC7524 and MC7525

SWITCHING CHARACTERISTICS ($V_{CC} = 5.0\text{ V}$, $V_{EE} = -5.0\text{ V}$, $T_A = 25^\circ\text{C}$ unless otherwise noted.)

Characteristic	Symbol	Min	Typ	Max	Unit
Propagation Delay Time – Differential Input to Output	$t_{PLH(D)}$ $t_{PHL(D)}$	—	15 40	40 —	ns
Propagation Delay Time – Strobe Input to Output	$t_{PLH(S)}$ $t_{PHL(S)}$	—	15 35	30 —	ns
Differential-Mode Input Overload Recovery Time	$t_{OR(DM)}$	—	20	—	ns
Common-Mode Input Overload Recovery Time	$t_{OR(CM)}$	—	20	—	ns
Minimum Cycle Time	$t_{C(min)}$	—	200	—	ns

**PROPAGATION DELAY TIME –
DIFFERENTIAL INPUT to OUTPUT****PROPAGATION DELAY TIME
STROBE INPUT to OUTPUT****PROPAGATION DELAY TIMES
TEST CIRCUIT**