

DMC

MODEL 3410
&
3411

ULTRA-HIGH SPEED
SAMPLE/HOLD AMPLIFIER

Dynamic Measurements Corp.

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ELECTRICAL SPECIFICATIONS

At $T_A = +25^\circ\text{C}$, rated power supplies and a 1K output load unless otherwise specified

DYMEC INC 49 DE 3004926 0000580 5 T-73-65

	MIN	TYP	MAX	UNITS
SAMPLE/HOLD INPUTS				
Analog				
Voltage Range	± 10.25	± 13.3 , -11.3		V
R_{in}	0.99	1.00	1.01	$k\Omega$
Digital				
Hold, <u>Hold</u> inputs		2		LSTTL Loads

SAMPLE/HOLD TRANSFER CHARACTERISTICS (without input buffer)*

Accuracy				
Gain		-1		V/V
Gain Error			± 0.1	%
Gain Non Linearity			± 0.005	% of FSR
DC Offset		± 1	± 5	mV
vs Temperature		± 20	± 50	$\mu\text{V}/^\circ\text{C}$
Charge Offset		± 1	± 10	mV
vs Temperature		± 50	± 100	$\mu\text{V}/^\circ\text{C}$
Throughput Nonlinearity			± 0.01	% of FSR

DYNAMIC CHARACTERISTICS

Acquisition Time (with 10V step)				
To within $\pm 0.1\%$		200		nsec
To within $\pm 0.01\%$		250	300	nsec
Sample-to-Hold Setting				
To within $\pm 0.01\%$		120	150	nsec
Sample-to-Hold Transient				
Amplitude		60	150	mVp-p
Aperture Delay Time		10	20	nsec
Aperture Uncertainty		± 10		psec
Output Slew Rate	140	160		V/ μsec
Droop Rate at $+25^\circ\text{C}$			± 5	$\mu\text{V}/\mu\text{sec}$
$+85^\circ\text{C}$			± 0.5	mV/ μsec
Feedthrough Rejection				
(10V square wave input)	-70			dB

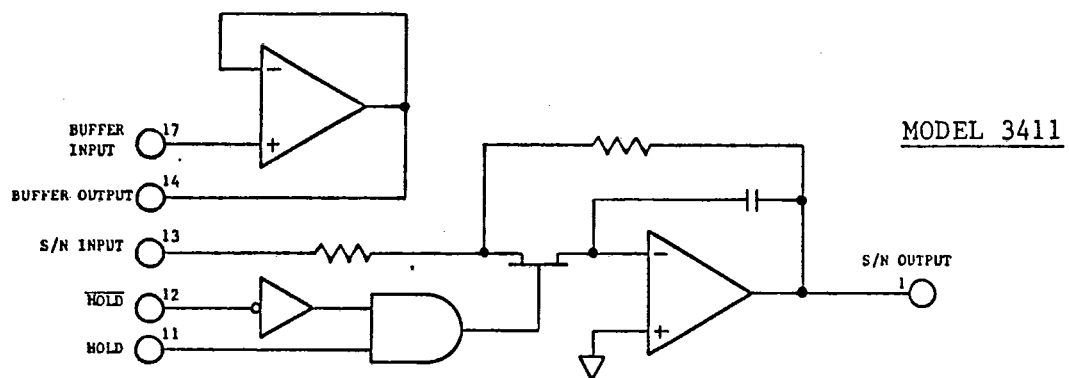
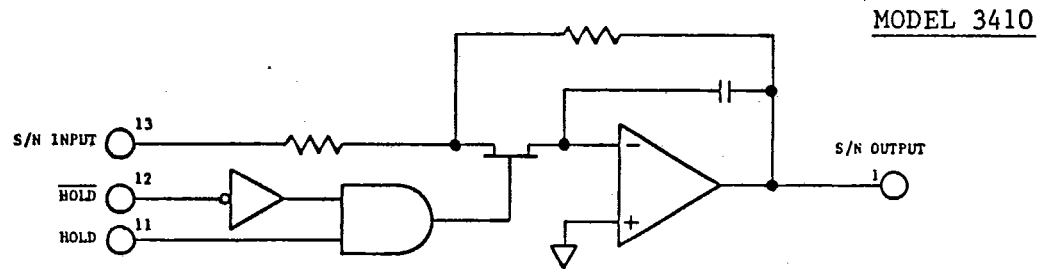
SAMPLE/HOLD OUTPUT

Voltage Range	± 10.25	± 11.3 , -13.3		V
Current	± 50			mA
Short Circuit Protection		Continuous to Common		
Impedance		0.1		Ω

* Model 3411 can be operated without its input buffer, by applying the input signal directly to pin 13.

	MIN	TYP	MAX	UNITS
INPUT BUFFER CHARACTERISTICS (3411 only)				
Input				
Offset Voltage		± 2	± 5	mV
vs Temperature		± 30		$\mu\text{V}/^\circ\text{C}$
Bias Current			25	nA
Impedance		$10^9 \parallel 3$		$\Omega \parallel \text{pF}$
V_{in} Range	± 10			V
Dynamic Characteristics				
Full Power Bandwidth	320	600		kHz
Slew Rate (1)	10			V/ μsec
Settling Time (1) to $\pm 0.01\%$		1.5	2	μsec
Output				
V_{out} Range	± 10			V
I_{out} Range	± 10			mA
POWER SUPPLY REQUIREMENTS				
Rated Voltage $\pm V_{CC}$	± 13.5	± 15	± 16.5	V
V_{DD}	+4.75	+5.00	+5.25	V
Quiescent Current $+V_{CC}$		+25	+35	mA
$-V_{CC}$		-15	-20	mA
V_{DD}		+6	+10	mA
Power Dissipation		720	875	mW
TEMPERATURE RANGE				
Operating	-25		+85	$^\circ\text{C}$
Storage	-55		+125	$^\circ\text{C}$

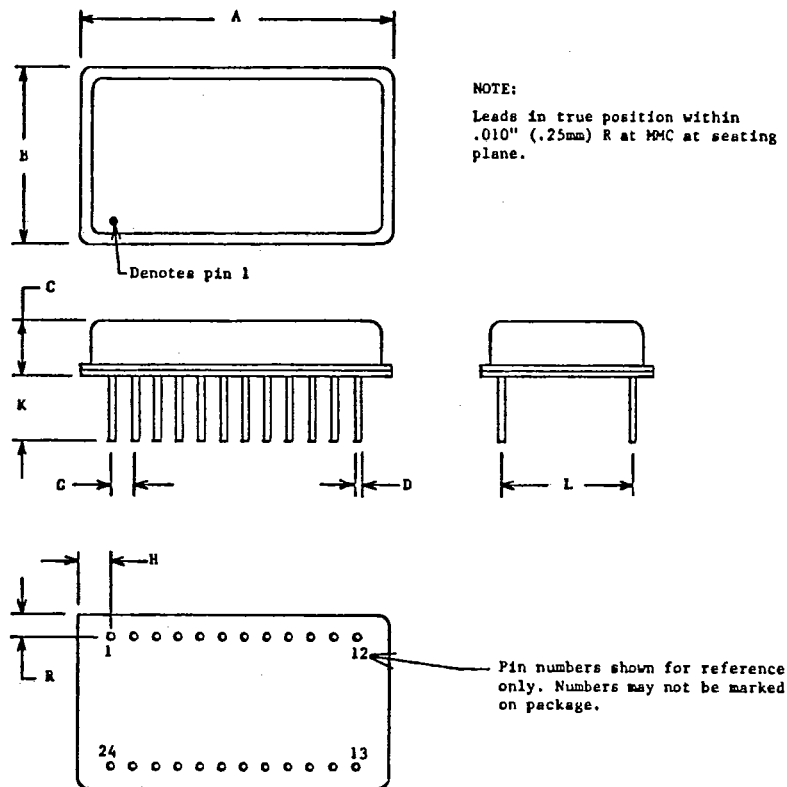
Notes: 1. When driving the analog input of the sample/hold.



PIN ASSIGNMENTS

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|------------------------------------|-------------------------------|
| 1. Sample/Hold Output | 13. Sample/Hold Analog Input |
| 2. NC | 14. Buffer Output (3411 only) |
| 3. NC | 15. Common |
| 4. NC | 16. NC |
| 5. NC | 17. Buffer Input (3411 only) |
| 6. NC | 18. NC |
| 7. NC | 19. NC |
| 8. NC | 20. NC |
| 9. V_{DD} Supply | 21. Common |
| 10. Common | 22. $-V_{CC}$ Supply |
| 11. HOLD Input | 23. Common (Case) |
| 12. $\overline{\text{HOLD}}$ Input | 24. $+V_{CC}$ Supply |

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MECHANICAL SPECIFICATIONSPIN ASSIGNMENTS

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	1.365	1.385	34.67	35.18
B	.790	.810	20.07	20.57
C	.170	.250	4.32	6.35
D	.016	.021	0.41	0.53
G	.100		2.54	
H	.125	.150	3.18	3.81
K	.150	.300	3.81	7.62
L	.600		15.24	
R	.080	.110	2.03	2.79