



# MNHT-0025

VERY-FAST  
T/H AMPLIFIER

## FEATURES

- 3ps Aperture Jitter
- 15ns Acquisition Time
- 10ns Settling Time
- 30MHz Large Signal Bandwidth
- HTS-0025 Pin Compatible
- -55°C to +125°C Operation
- MIL-STD-883 Screening  
Optional. MIL-STD-1772  
Qualified Facility.

## DESCRIPTION

The MNHT-0025 is a very fast track and hold offering 15ns acquisition time with 1V step to  $\pm 1\%$ . Its 30MHz full power bandwidth, 300V/ $\mu$ s slew rate, and low harmonic distortion make the MNHT-0025 a good choice when linearity is important.

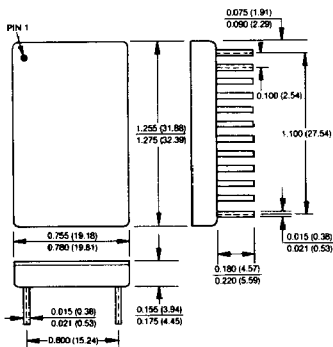
An FET input buffer provides 10,000 Megohms input impedance. With harmonic distortion of 77dBc the MNHT-0025 maintains a very high level of linearity for systems in which it is used. Even with 75 Ohm output loading, harmonic distortion is still 68dBc.

The MNHT-0025 uses a single-ended ECL track and hold control signal. While its  $\pm V$  voltages can range from  $\pm 12V$  to  $\pm 15V$ , its Vcc voltages can range from  $\pm 5V$  to  $\pm 15V$ . The MNHT-0025 is fully specified for -55°C to +125°C and is available processed and screened to MIL-STD-883.

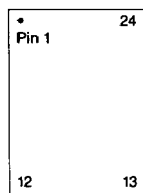
## APPLICATIONS

- Very-Fast Signal Processing
- Radar and IF Processors
- Instrumentation Systems
- EW and ECM Systems
- Communication Systems

## 24 PIN DIP



## PIN DESIGNATIONS



1	+Vcc	24	Analog Output
2	-Vcc	22	No Connect
3	-V	22	+V
4	Vee	21	No Connect
5	Hold	20	No Connect
6	Digital Ground	19	Analog Ground
7	Ground	18	Analog Ground
8	+V	17	No Connect
9	+Vcc	16	No Connect
10	-Vcc	15	No Connect
11	Ground	14	No Connect
12	-V	13	Analog Input



**MICRO NETWORKS**

324 Clark St., Worcester, MA 01606 (508) 852-5400

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## MNHT-0025 VERY-FAST T/H AMPLIFIER

ELECTRICAL CHARACTERISTICS (@ 25°C RL=200 Ohms CL=13pF; ±V and ±Vcc = ±15V)

	MNHT-0025	UNITS
<b>ANALOG INPUT / OUTPUT</b>		
Input Voltage Range: FSR	2	Vpp
Maximum Without Damage	±4	V max
Input Resistance	10,000	Megohms
Input Capacitance	7	pF
Input Bias Current	15	nA (max)
Output Current	±50	mA (max)
Output Resistance	10	Ohms
<b>HOLD-TO-TRACK DYNAMICS</b>		
Acquisition Time:		
RL=200 Ohms		
1V Step to ± 1% (±10mV)	10 (15)	ns
to ±0.1% (±1mV)	14 (19)	ns
2V Step to ± 1% (±20mV)	13 (16)	ns
to ±0.1% (±2mV)	16 (22)	ns
Switch Delay Time	1.5	ns (max)
<b>TRACK-MODE DYNAMICS</b>		
Small Signal Bandwidth: 100mVpp	30	MHz (min)
Large Signal Bandwidth: 2Vpp	30	MHz (min)
Slew Rate	300 (250)	V/μsec (min)
Harmonic Distortion: @ 4MHz	1Vpp      2Vpp	
2nd/3rd 1k Ohms	77 / 80      73 / 74	dBc
200 Ohms	73 / 73      70 / 70	dBc
75 Ohms	68 / 64      64 / 56	dBc
Noise in Track Mode @ 5MHz BW	100	μV rms (max)
<b>TRACK TO HOLD DYNAMICS</b>		
Effective Aperture Delay	5	ns
Aperture Uncertainty (Jitter)	3	ps rms
Pedestal Offset: @ 25°C	±2 (±10)	mV (max)
Temperature Variation	±100	μV/°C (max)
Variation with Power Supply	10	mV/V (max)
Switch Transient: Vpeak	15 (30)	mV (max)
Settling Time to 1mV	10 (20)	ns (max)
<b>HOLD-MODE DYNAMICS</b>		
Droop Rate: @ 25°C	100	μV/μs
Temperature Variation	Doubles Every 10°C	
Feedthrough Rejection		
2Vpp @ 1MHz	70	dB (min)
@ 10MHz	65	dB (min)
<b>DC ACCURACY</b>		
Gain: @ 25°C no load	0.95 (0.92)	V/V (min)
nonlinearity @ 1Vpp	0.01	% (max)
@ 2Vpp	0.1	% (max)
Temperature Variation	30 (40)	ppm/°C (max)
Offset Voltage: @ 25°C	±2 (±5)	mV (max)
Temperature Variation	100 (150)	μV/°C (max)
<b>POWER REQUIREMENTS</b>		
Power Supply Rejection	18	mV/V (max)
+V (12V to 15V, ±0.5V)	55	mA (max)
-V (-12V to -15V, ±0.5V)	55	mA (max)
+Vcc (5V to 15V, ±0.5V)	15	mA (max)
-Vcc (-5V to -15V, ±0.5V)	15	mA (max)
Vee (-5.2V, ±0.25V)	40	mA (max)
Power Dissipation	1.5 (2)	W (max)
<b>TEMPERATURE RANGE</b>		
Operating (Case)	-55 to +125	°C
Storage	-65 to +150	°C

Commercial or MIL-STD-883 screened versions available. Please consult factory.  
Specifications subject to change without notice as Micro Networks reserves the right  
to make improvements and changes in its products.

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