

ADM1021A

Low Cost Microprocessor
System Temperature
Monitor Microcomputer

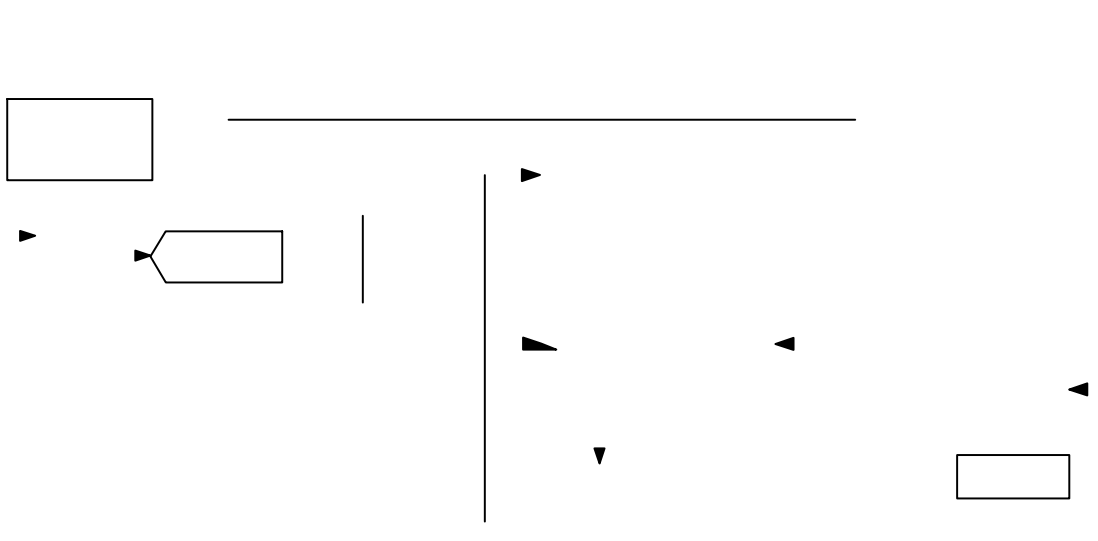


Figure 1. Functional Block Diagram

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Table 4. ELECTRICAL CHARACTERISTICS (continued)

($T_A = T_{MIN}$ to T_{MAX} , $V_{DD} = 3.0$ V to 3.6 V, unless otherwise noted) (Note 1)

Parameter	Test Conditions/Comments	Min	Typ	Max	Unit
SMBus Interface (See Figure 2)					
Logic Input High Voltage, V_{IH} STBY, SCLK, SDATA	$V_{DD} = 3.0$ V to 5.5 V	2.2	–	–	V
Logic Input Low Voltage, V_{IL} STBY, SCLK, SDATA	$V_{DD} = 3.0$ V to 5.5 V	–	–	0.8	V
SMBus Output Low Sink Current	SDATA Forced to 0.6 V	6.0	–	–	mA
ALERT Output Low Sink Current	ALERT Forced to 0.4 V	1.0	–	–	mA
Logic Input Current, I_{IH} , I_{IL}		–1.0	–	+1.0	μ A
SMBus Input Capacitance, SCLK, SDATA		–	5.0	–	pF
SMBus Clock Frequency		–	–	100	kHz
SMBus Clock Low Time, t_{LOW}	t_{LOW} between 10% Points	4.7	–	–	μ s
SMBus Clock High Time, t_{HIGH}	t_{HIGH} between 90% Points	4.0	–	–	μ s
SMBus Start Condition Setup Time, $t_{SU:STA}$		4.7	–	–	μ s
SMBus Repeat Start Condition		250	–	–	ns
Setup Time, $t_{SU:STA}$	Between 90% and 90% Points	250	–	–	ns
SMBus Start Condition Hold Time, $t_{HD:STA}$	Time from 10% of SDATA to 90% of SCLK	4.0	–	–	μ s
SMBus Stop Condition Setup Time, $t_{SU:STO}$	Time from 90% of SCLK to 10% of SDATA	4.0	–	–	μ s
SMBus Data Valid to SCLK	Time for 10% or 90% of SDATA to 10% of SCLK	250	–	–	ns
Rising Edge Time, $t_{SU:DAT}$	Time for 10% or 90% of SDATA to 10% of SCLK	250	–	–	ns
SMBus Data Hold Time, $t_{BUF:DAT}$		0	–	–	μ s
SMBus Bus Free Time, t_{BUF}	Between Start/Stop Condition	4.7	–	–	μ s
SCLK Falling Edge to SDATA		–	–	1	μ s
Valid Time, $t_{VD:DAT}$	Master Clocking in Data	–	–	1	μ s

1. $T_{MAX} = 100$ C, $T_{MIN} = 0$ C
2. Operation at $V_{DD} = 5.0$ V guaranteed by design; not production tested.
3. Guaranteed by design; not production tested.

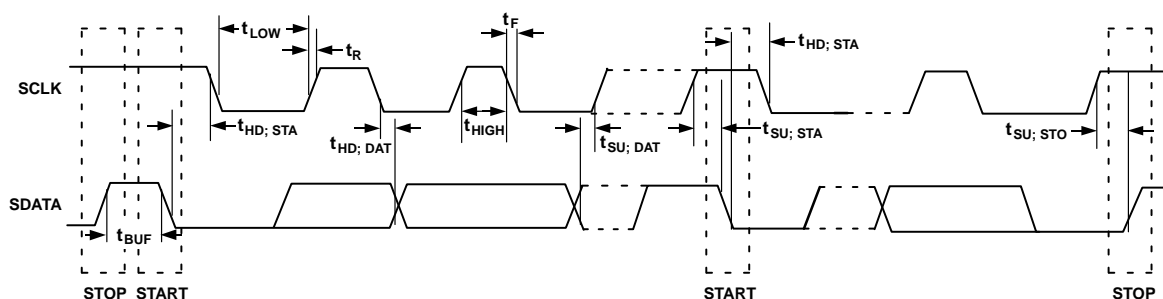


Figure 2. Serial Bus Timing

TYPICAL PERFORMANCE CHARACTERISTICS

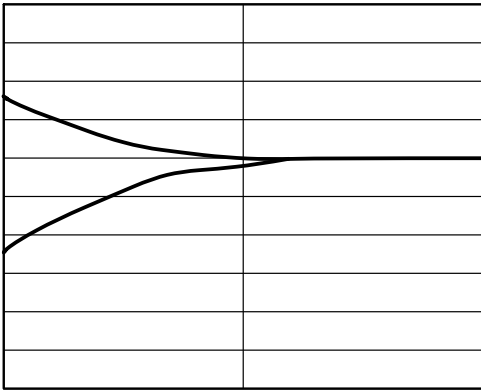


Figure 3. Temperature Error vs. PC Board Track Resistance

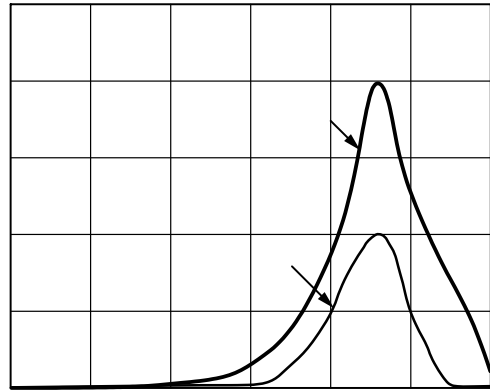


Figure 4. Temperature Error vs. Power Supply Noise Frequency

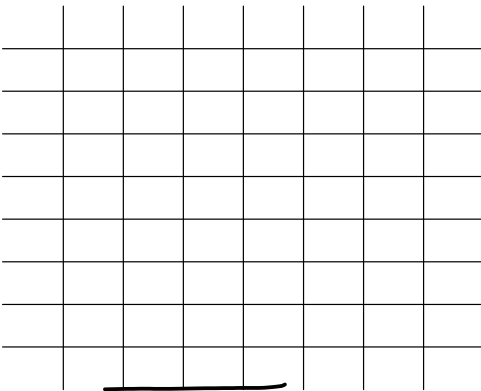


Figure 5. Temperature Error vs. Common-mode Noise Frequency

Figure 6. Temperature Error vs. Pentium® III Temperature

Functional Description

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Table 11. DEVICE ADDRESSES (Note 1)

ADD0	ADD1	Device Address
0	0	0011 000
0	NC	0011 001
0	1	0011 010
NC	0	0101 001
NC	NC	0101 010
NC	1	0101 011
1	0	1001 100
1	NC	1001 101
1	1	1001 110

1. ADD0 and ADD1 are sampled at powerup only.

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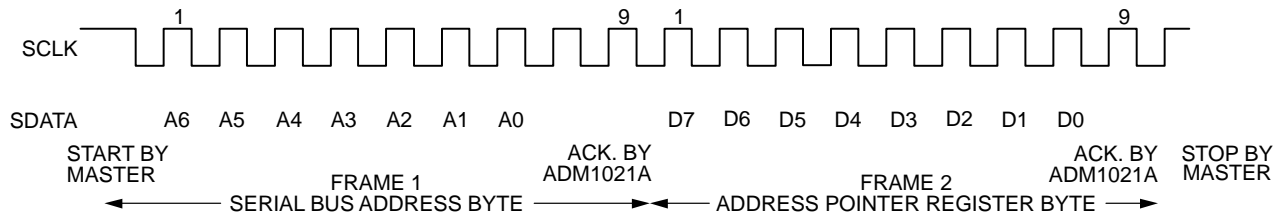
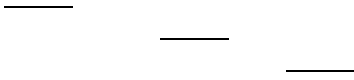


Figure 15. Writing to the Address Pointer Register Only



Low Power Standby Modes



μ μ



Sensor Fault Detection

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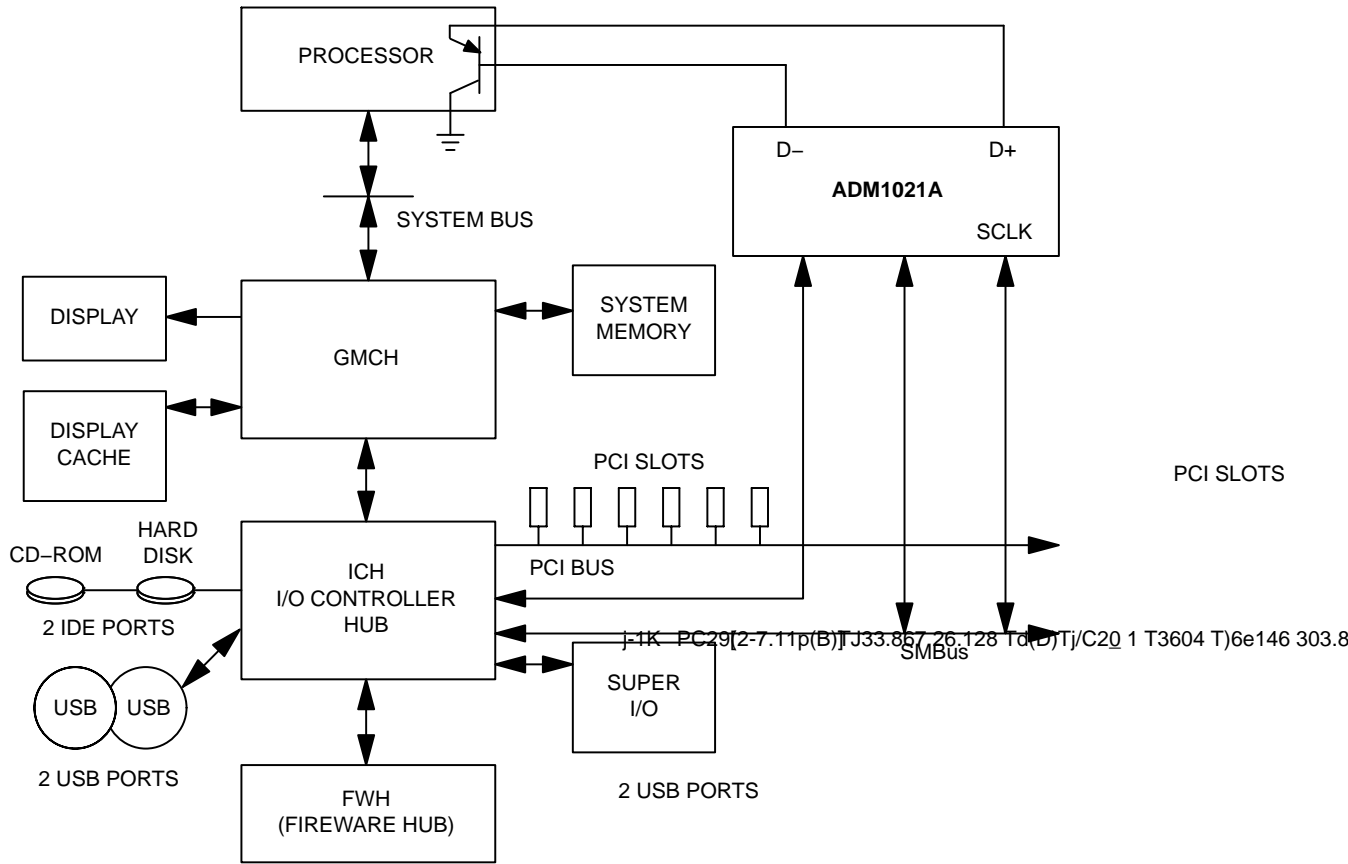
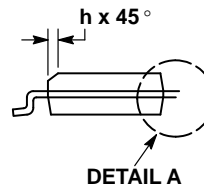
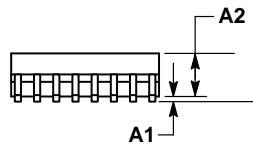
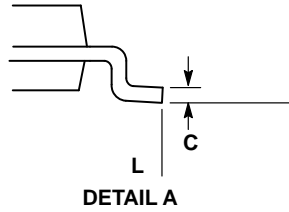
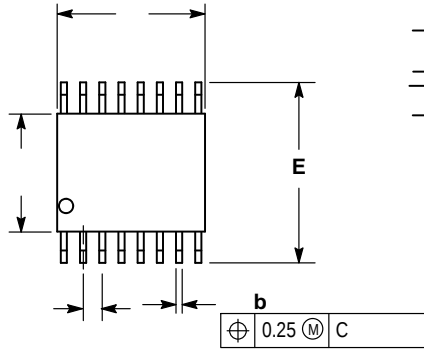


Figure 20. Typical System Using ADM1021A

QSOP16
CASE 492-01
ISSUE A

DATE 23 MAR 2011

SCALE 2:1



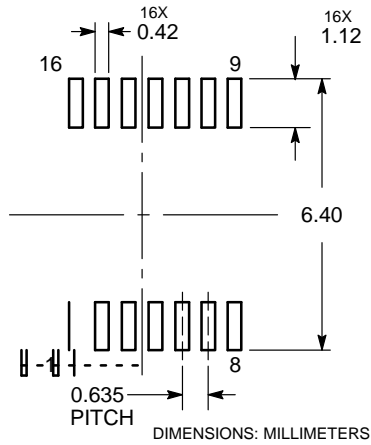
NOTES:

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. DIMENSION b DOES NOT INCLUDE DAMBAR PROTRUSION.
4. DIMENSION D DOES NOT INCLUDE MOLD FLASH, PROTRUSIONS, OR GATE BURRS. MOLD FLASH, PROTRUSIONS, OR GATE BURRS SHALL NOT EXCEED 0.005 PER SIDE. DIMENSION E1 DOES NOT INCLUDE INTERLEAD FLASH OR PROTRUSION. INTERLEAD FLASH OR PROTRUSION SHALL NOT EXCEED 0.005 PER SIDE. D AND E1 ARE DETERMINED AT DATUM H.
5. DATUMS A AND B ARE DETERMINED AT DATUM H.

INCHES		
DIM	MIN	MAX
A	0.053	0.069
A1	0.004	0.010
b	0.008	0.012
c	0.007	0.010

e	0.025 BSC	
h	0.009	0.020
L	0.016	0.050
M	0°	8°

SOLDERING FOOTPRINT



XXXXX = Specific Device Code
YY = Year
WW = Work Week
G = Pb-Free Package

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