

CLOCK CALENDAR MODULE (MCP79400) – BM005

OPEN SOURCE HARDWARE MODULE



hardware made easy

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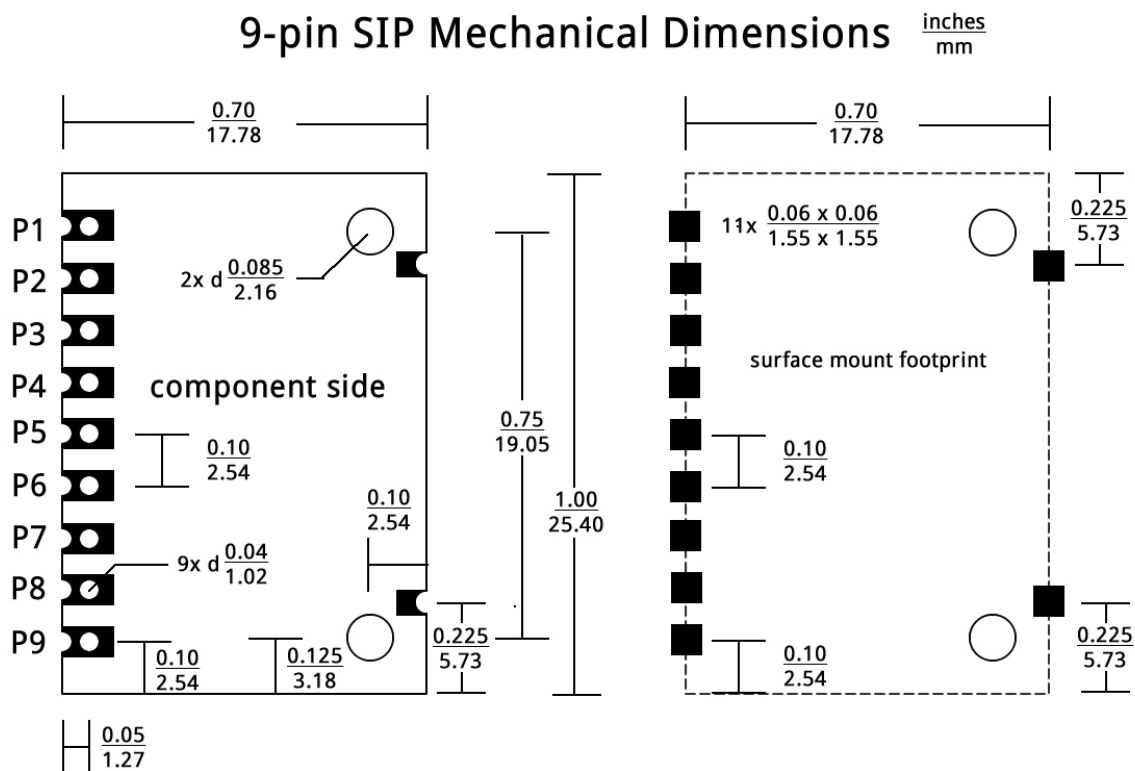
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Product Description:

This breakout board carries a Microchip MCP79400 real-time clock and calendar. It provides an easy to use time-keeping module with battery backup capability.

- I²C™ serial interface
- 1.8-5.5VDC operation, battery back-up down to 1.3VDC
- 12 or 24 hour time keeping format
- Power fail time-stamp for battery switch over
- Hours, minutes, seconds, day of week, day, month, year registers
- Dual alarm single output
- +/-127 PPM digital trim / calibration on chip

Dimensions:**9-pin SIP Mechanical Dimensions****Specifications:**

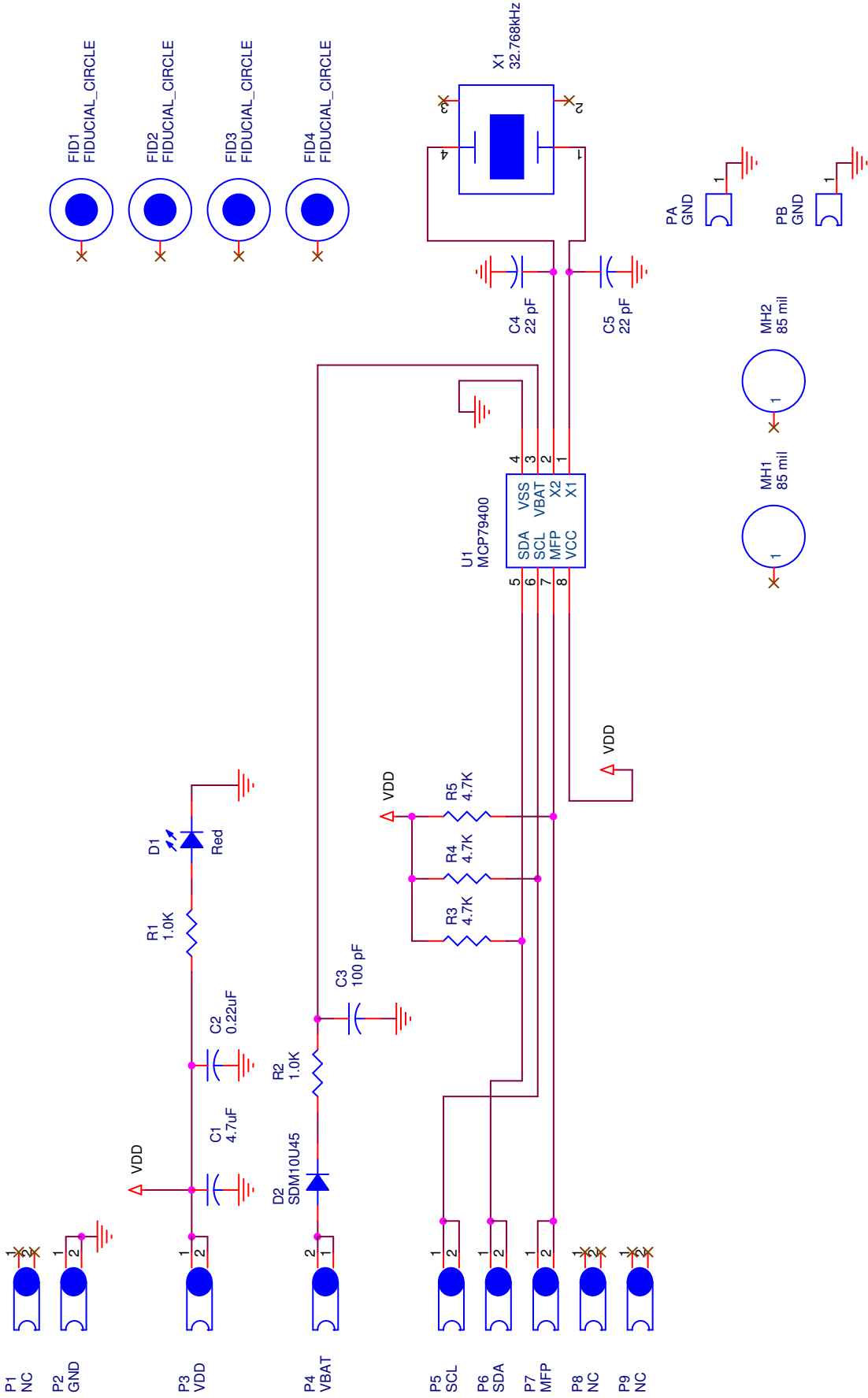
Characteristic	Min	Typ	Max	Unit	Notes
Operating voltage	1.8		5.5	V	
Battery backup changeover	1.3		1.7	V	
Operating current		3.5		mA	Remove D1 from module to reduce to 400uA
Battery backup current		700		nA	1.8V battery voltage
Serial communication			400	KHz	100KHz at VIN < 2.5V
Operating temperature	-40		+85	°C	
PWM frequency			20	KHz	

Pin Functions and Notes

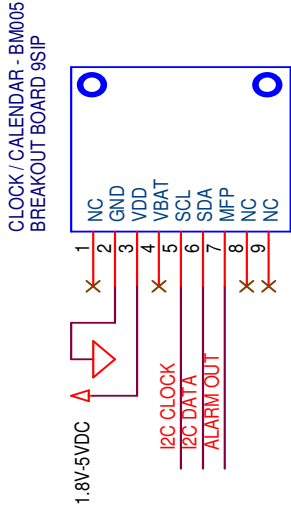
#	Name	Maximum Voltage	Notes
1	NC	N/A	No connection
2	GND	0V	Ground return for the power supply.
3	VDD	5.5V	Module power. 1.8-5.5V.
4	VBAT	5.5V	Battery power. If battery backup is used it should be connected here. Battery backup switches over when VDD is less than 1.5V typically. A series diode (D2) on the module will contribute a 300mV drop to the battery voltage. Ideally the voltage at VBAT should remain above 1.8V.
5	SCL	5.5V	Logic input. I ² C™ clock line generated by the master of the bus. Pulled to VDD with a 4.7KΩ resistor.
6	SDA	5.5V	Logic input/output. Bi-direction I ² C™ data line. Pulled to VDD with a 4.7KΩ resistor.
7	MFP	5V	Logic output. Open collector alarm or clock output. Pulled to VDD with a 4.7KΩ resistor.
8	NC	N/A	No connection
9	NC	N/A	No connection

User Notes/Tips

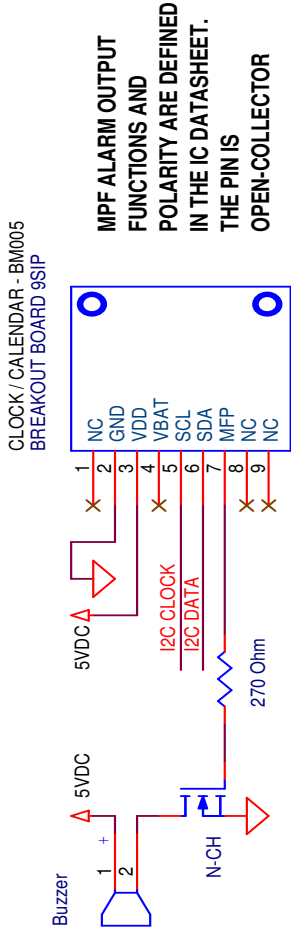
- For additional information on the MCP79400 real-time clock/calendar visit Microchip's web site and review the datasheet.
- Visit www.solutions-cubed.com for application notes related to this module.
- The majority of the current this module draws is used to light the LED, D1. Removing this LED or its current limiting resistor (R1), will reduce the current by VDD-2/1000 mA.



BASIC CONNECTIONS

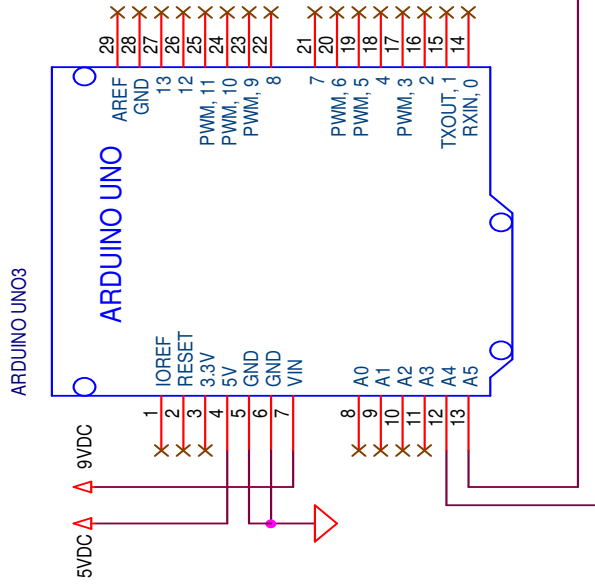


ALARM OUTPUT



MPF ALARM OUTPUT
FUNCTIONS AND
POLARITY ARE DEFINED
IN THE IC DATASHEET.
THE PIN IS
OPEN-COLLECTOR

ARDUINO CONNECTIONS



BATTERY BACKUP

