

# ARTC8050-HALP-PF



RTC module, I<sup>2</sup>C interface, 3.2 x 1.5 x 0.8mm

## Features:

Low power consumption: 240 nA @ 3 V.  
Wide operating voltage range: 1.5 V to 5.5 V.  
Temperature compensated, high accuracy:  $\pm 3$  ppm for  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$ .  
Provides year, month, date, weekday, hours, minutes, seconds and 100th seconds  
Timer, alarm and external event input with time stamp  
Clock output frequencies: 32.768 kHz, 1024 Hz, 1 Hz.  
100% Pb-free, RoHS-compliant.  
Automotive qualification AEC-Q200 compliant option



## Description:

This Real-Time Clock Module that incorporates an integrated CMOS circuit together with an XTAL. It operates under vacuum in a hermetically sealed ceramic package with metal lid.

## Applications:

IOT, Metering, Industrial, Automotive, Health care, Wearables, Portables

### Electrical characteristics at 25°C

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test condition
Supply voltage	$V_{DD}$	1.5		5.5	V	Temp. Comp.
Current consumption Time keeping mode	$I_{DDO}$		240	350	nA	I2C-bus inactive, $V_{DD}$ 3V
CLKOUT frequency	$F_{CLKOUT}$	32768/1024/1			Hz	Programmable
Time accuracy	$\Delta F/F$		$\pm 3$		ppm	$-40$ to $+85^{\circ}\text{C}$
			$\pm 7$		ppm	$+85$ to $+105^{\circ}\text{C}$
Aging first year max.	$\Delta F/F$			$\pm 3$	ppm	@ $25^{\circ}\text{C}$

### Environmental characteristics

Storage temp. Range	-55 to +125	$^{\circ}\text{C}$	
Operating temp. Range	-40 to +85	$^{\circ}\text{C}$	
Shock resistance	Max $\pm 5.0$	ppm	5000 g, 0.3ms, $\frac{1}{2}$ sine
Vibration resistance	Max $\pm 5.0$	ppm	20 g/10-2000Hz

### Other information

Package-type	SON-8		
Termination	Au flashed pads		
Processing	Reflow soldering $260^{\circ}\text{C}$ / 20s-40s max		
Packaging (Tape and Reel)	1kpcs/reel, 3kpcs/reel		

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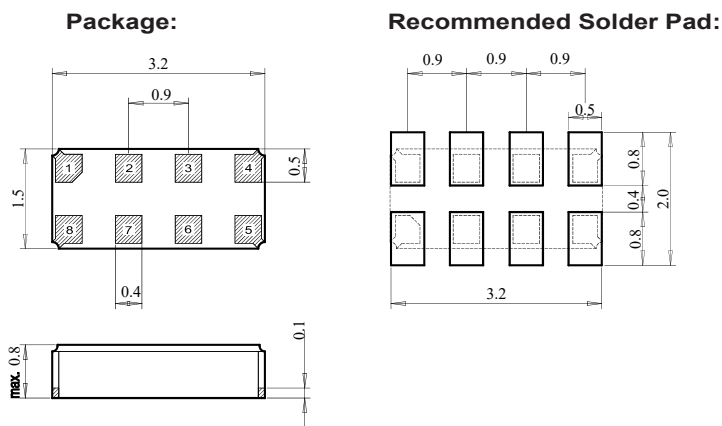
Specifications subject to change without notification

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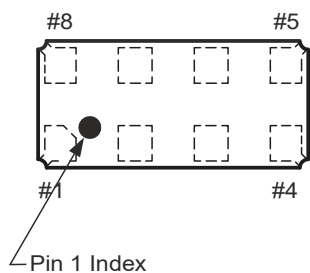
RTC module, I<sup>2</sup>C interface, 3.2 x 1.5 x 0.8mm



## Mechanical dimensions and Pin functions and test circuits

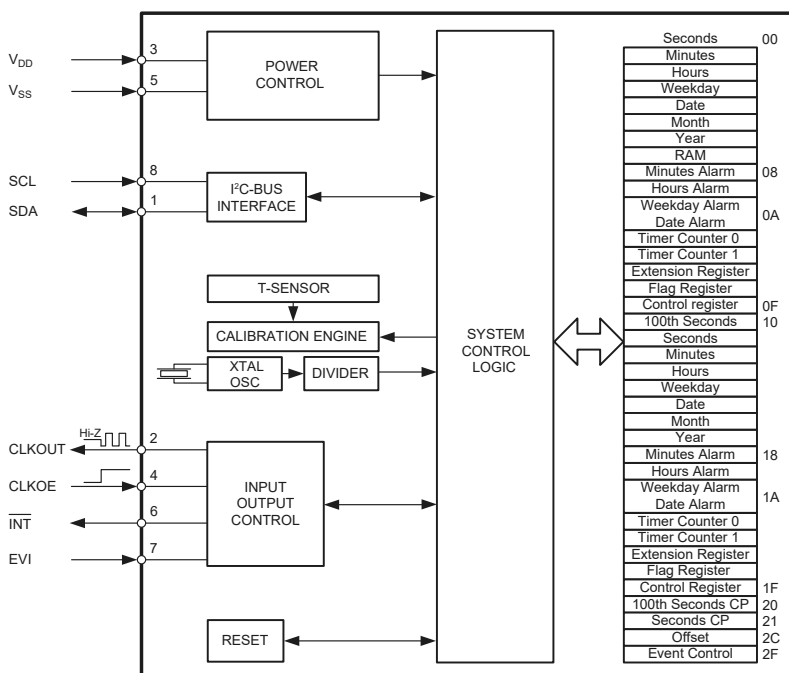


All dimensions in mm typical



Pin	Connection
1	SDA Serial Data
2	CLKOUT Clock Output
3	V <sub>DD</sub> Power Supply Voltage
4	CLKOE Clock Output Enable
5	V <sub>SS</sub> Ground
6	INT Interrupt Output
7	EVI Event Input
8	SCL Serial Clock Input

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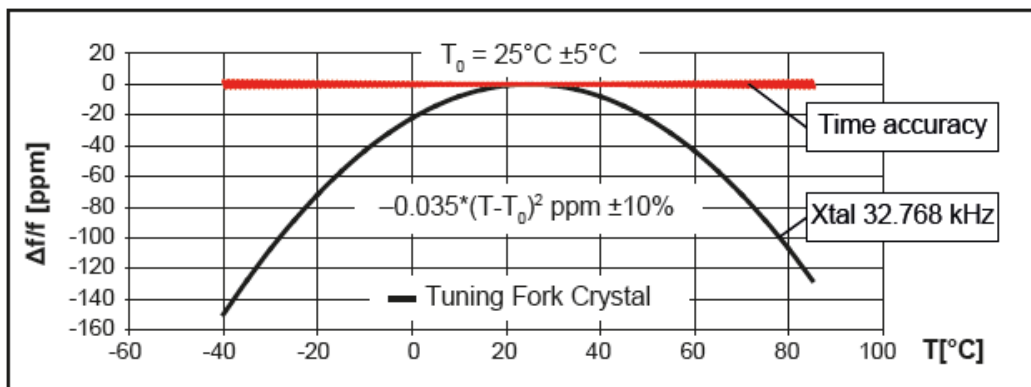


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## Frequency stability vs Operating temperature curve



Drawing control: (Internal use only)  
Commodity code: 9110 9000  
Issue number : N2  
Date : 18/02/2020  
Internal reference : M1