

ARTC850-USLP-PF



RTC module, SPI Bus, 3.2 x 1.5 x 0.8mm

Features:

Ultra small SMT ceramic package with integrated 32.768kHz Crystal
Very low power consumption 190nA
Automotive qualified AEC-Q200 compliant option
Alarm and Timer Interrupt
Minute and Half Minute Interrupt
Very low power consumption 190nA



Description:

This ultra small RTC Module with a 3-wire SPI-bus has been specially designed for miniature and cost sensitive high volume applications. The very small SMT ceramic package combines the 32.768 kHz crystal unit with the CMOS-based oscillator and real-time-clock circuitry. The programmable Offset Register value allows aging compensation.

The calendar function tracks Weekdays, Date, Month and Years with automatic Leap Year calculation. The clock function provides, Seconds, Minutes and Hours in AM/PM or 24h format. Programmable Alarm, Timer, Interrupt and CLKOUT frequency settings increase flexibility using this device. The typical current consumption @ VDD = 3 V is only 190 nA.

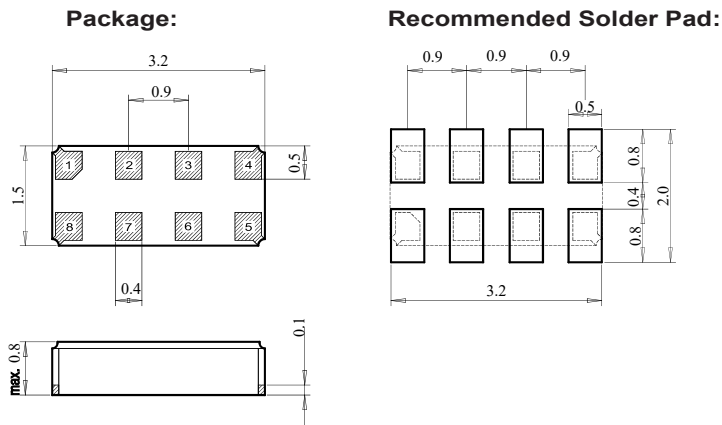
Electrical characteristics at 25°C						
Parameter	Symbol	Min.	Typ.	Max.	Unit	Test condition
Supply voltage	V _{DD}	1.8		5.5	V	SPI Bus active
Supply voltage	V _{DD}	0.9		5.5	V	Time keeping
Current consumption during access	I _{DD}		40		MA	fsc1 = 1MHz, V _{DD} 3V
			200		μA	fsc1 = 5MHz, V _{DD} 3V
Current consumption Time keeping mode	I _{DDO}		190	240	nA	fsc1 = 0Hz, V _{DD} 3V
			180	230	nA	fsc1 = 0Hz, V _{DD} 1V
CLKOUT frequency		32768...to...1			Hz	Programmable
Frequency tolerance	ΔF/F	±20			ppm	32768Hz @ 25°C
Aging first year max.	ΔF/F			±3	ppm	@ 25°C
Frequency vs. temp.	ΔF/F ₀	-0.035 ppm/°C ² (T-To) ² ± 10%			ppm	20 ≤ To ≤ 30
Environmental characteristics						
Storage temp. Range		-55 to +125			°C	
TA operating temp. range		-40 to +85			°C	
Shock resistance		Max ±5.0			ppm	5000 g, 0.3ms, ½ sine
Vibration resistance		Max ±5.0			ppm	20 g/10-2000Hz
Other information						
Package-type		Ceramic 8-pin Metal Lid				
Termination		For SMD mounting Au plated pads				
Processing		Reflow soldering 260°C / 20 s max				
Packaging		1kpcs/reel, 3kpcs/reel				

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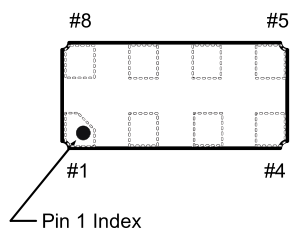
RTC module, SPI Bus, 3.2 x 1.5 x 0.8mm



Mechanical dimensions and Pin functions

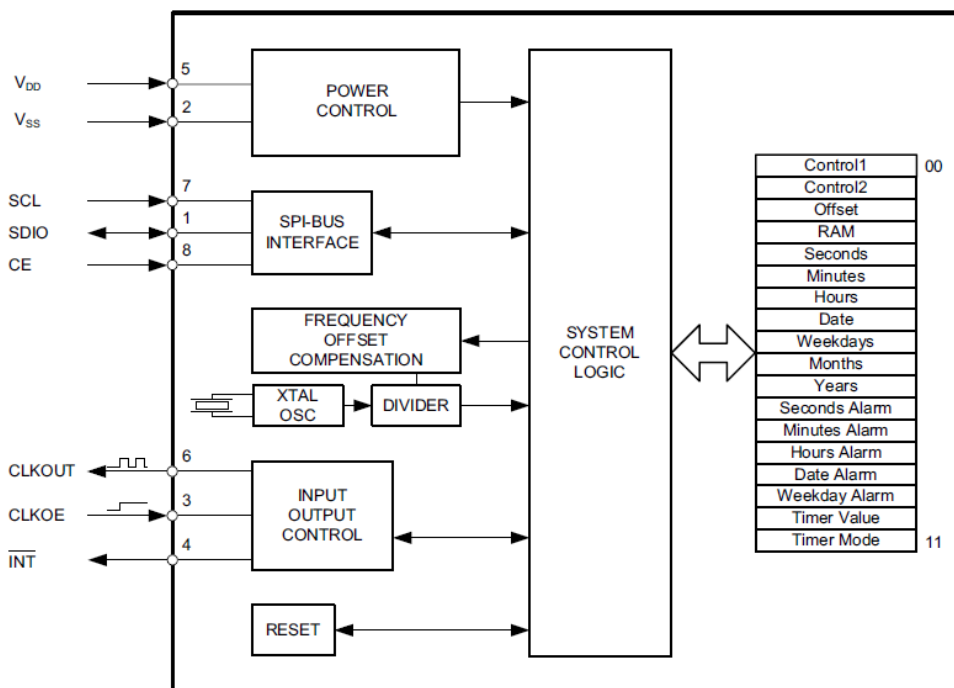


All dimensions in mm typical



Pin	Connection
1	SDIO Serial Data
2	V _{SS} Ground
3	CLKOE Clock output enable
4	INT Interrupt Output
5	V _{DD} Power Supply Voltage
6	CLKOUT Clock Frequency Output
7	SCL Serial clock input
8	CE Chip enable

Mechanical dimensions and Pin functions and test circuits

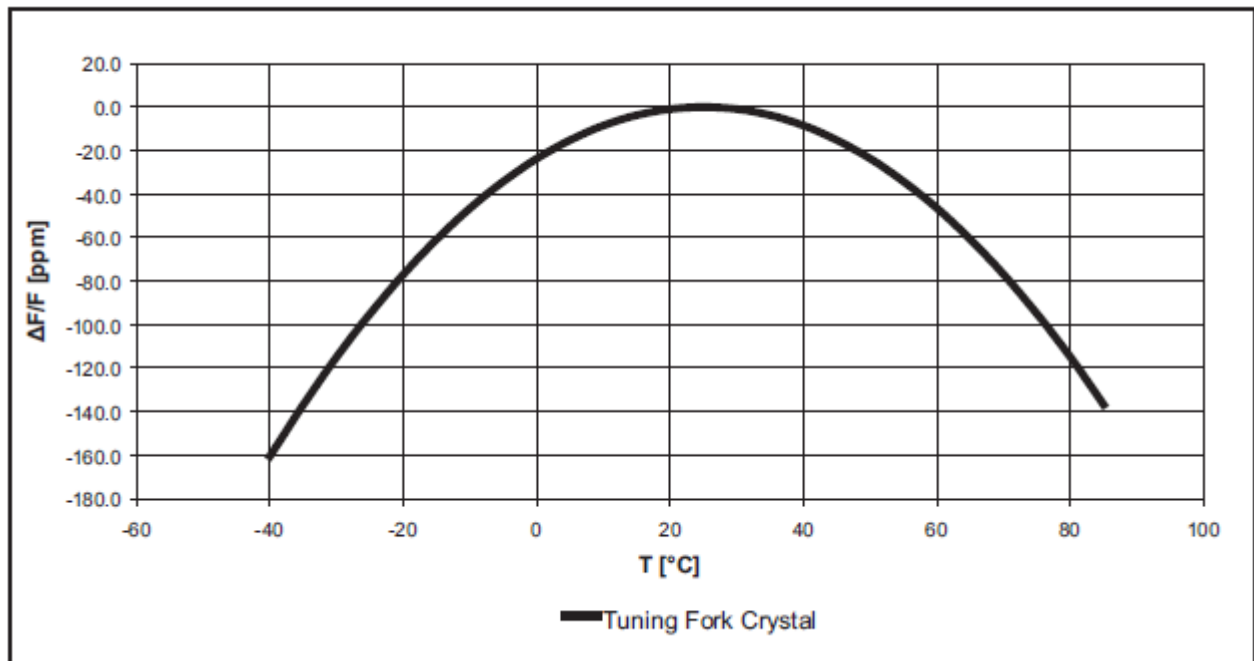


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Frequency stability vs operating temperature



Drawing control: (Internal use only)
Commodity code: 9110 9000
Issue number : N1
Date : 01/06/2018
Internal reference : M1