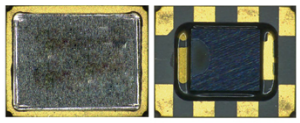
REAL TIME CLOCK MODULE WITH 32.768kHz TCXO



3.2 x 2.5 x 1.0 mm

AB-RTCMK-32.768kHz

Moisture Sensitivity Level: MSL=1

Pb RoHS Compliant

FEATURES:

- Ultra low profile, 3.2 x 2.5 x 1.0 mm, Seam sealed SMT package
- Exceptional Frequency Stability over temperature; ±5.0 ppm max. over -40ºC to +85ºC
- Operating Voltage; +1.30V to +5.50V
- 4.0µA max. current at no load
- I2C Communication
- Clock function : Hour/ Min / Sec
- Leap year automatic distinction calendar function till 2099
- Alarm interruption function for day, date, hour and minute settings
- A constant cycle timer interruption function : 244.14us to 255 min
- Time update interruption function：Min / Sec
- Clock output function：32.768kHz / 1024Hz / 32Hz / 1Hz

APPLICATIONS:

- Smart cards
- Wireless sensors and tags
- Medical electronics
- Utility meters
- Data loggers
- Appliances
- Handsets
- Consumer electronics

STANDARD SPECIFICATIONS:

Parameters		Minimum	Typical	Maximum	Units	Notes
Nominal Frequency (f0)			32.768		kHz	
Frequency Tolerance (df/f0)		-3.0		+3.0	ppm	Initial + 2 times reflow Ta=+25 ± 2 ºC
Frequency Stability vs Temp. (df/f0)		-5.0		+5.0	ppm	Ta=-40 to +85 ºC
Frequency Stability vs Voltage (df/dV)		-1.0		+1.0	ppm/V	Ta=+25 ºC V_{DD}=2.0 to 5.5V
Frequency Aging Rate (dfag)		-3.0		+3.0	ppm	Ta=+25 ºC, first year
Start Up Time (Tst)				1.0	sec	Ta=+25 ºC V_{DD}=1.3V
				3.0	sec	Ta=-40 to +85 ºC V_{DD}=1.3 to 5.5V
Power Supply Current 1 (I_{DD1})			0.6	2.0	uA	SCL=SDA=/INT=V_{DD} CLKOUT=V_{SS}, V_{DD}=3V
Power Supply Current 2 (I_{DD2})			1.5	4.0	uA	SCL=SDA=/INT=V_{DD} CLKOUT=V_{DD}, V_{DD}=3V, CL_{OUT}=0pF
Input Leak Current (I_{LK})		-0.5		+0.5	uA	CLKOE,SCL,SDA V_{IN}=V_{DD} or V_{SS}
Output Leak Current (I_{OZ})		-0.5		+0.5	uA	CLKOUT,/INT,SDA V_{OUT}=V_{DD} or V_{SS}
"H" Input Voltage (V_{IH})		0.8 x V_{DD}		5.5	V	CLKOE,SCL,SDA
"L" Input Voltage (V_{IL})		0.0		0.2 x V_{DD}	V	CLKOE,SCL,SDA
"H" Output Voltage (V_{OH})		2.2		3.0	V	CLKOUT, V_{DD}=3.0V, I_{OH}=-1mA
"L" Output Voltage	V_{OL1}	0.0		0.8	V	CLKOUT, V_{DD}=3.0V, I_{OL}=1mA
	V_{OL2}	0.0		0.4	V	/INT, V_{DD}=3.0V, I_{OL}=1mA
	V_{OL3}	0.0		0.4	V	SDA, V_{DD}≥2.0V, I_{OL}=3mA
Low Voltage Detection Voltage (V_{DET})		1.3	1.4	1.5	V	

For detail data sheet, please contact tech-support@abracon.com

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tel 949-546-8000| fax 949-546-8001 | www.abracon.com

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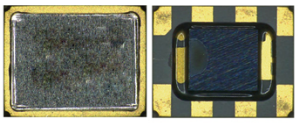


3.2 x 2.5 x 1.0 mm

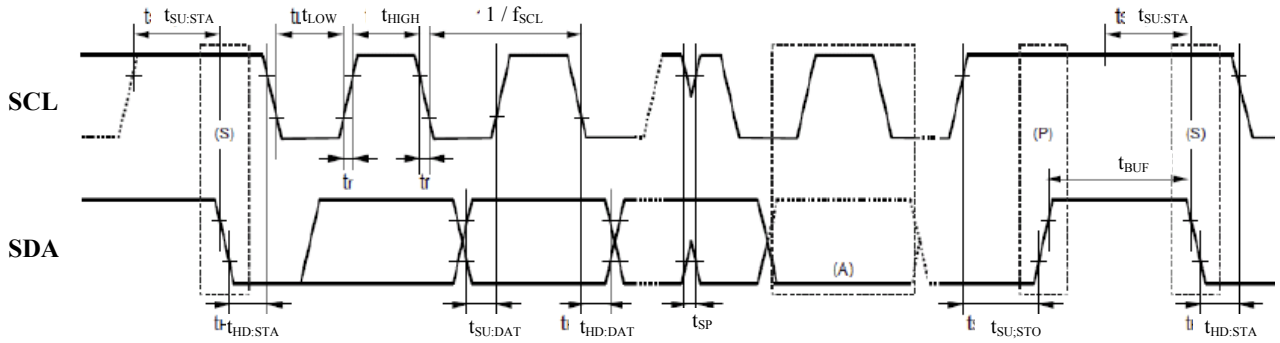
AB-RTCMK-32.768kHz

Pb RoHS Compliant

AC ELECTRICAL CHARACTERISTICS

Parameters	Minimum	Typical	Maximum	Units	Notes
SCL Clock Frequency (f_{SCL})			400	kHz	
START Condition Setup Time ($t_{SU;STA}$)	0.6			sec	
START Condition Hold Time ($t_{HD;STA}$)	0.6			sec	
Data Input Setup Time ($t_{SU;DAT}$)	100			nsec	
Data Input Hold Time ($t_{HD;DAT}$)	0		900	nsec	
STOP Condition Setup Time ($t_{SU;STO}$)	0.6			sec	
Bus Idle Time Between START and STOP Condition (t_{BUF})	1.3			sec	
SCL Low Time (t_{LOW})	1.3			sec	
SCL High Time (t_{HIGH})	0.6			sec	
SCL, SDA Rise Time (t_r)			0.3	sec	20% to 80%
SCL, SDA Fall Time (t_f)			0.3	sec	80% to 20%
Allowable Spike Time on Bus (t_{SP})			50	nsec	

TIMING CHART



PART IDENTIFCATION:

AB - RTCMK - 32.768 kHz - ☐

Packaging
Blank: Bulk
T: 1000pcs/reel
T3*: 3000pcs/reel

*3000pcs/reel: standard reel quantity

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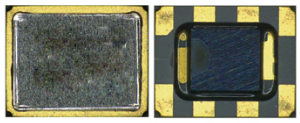


3.2 x 2.5 x 1.0 mm

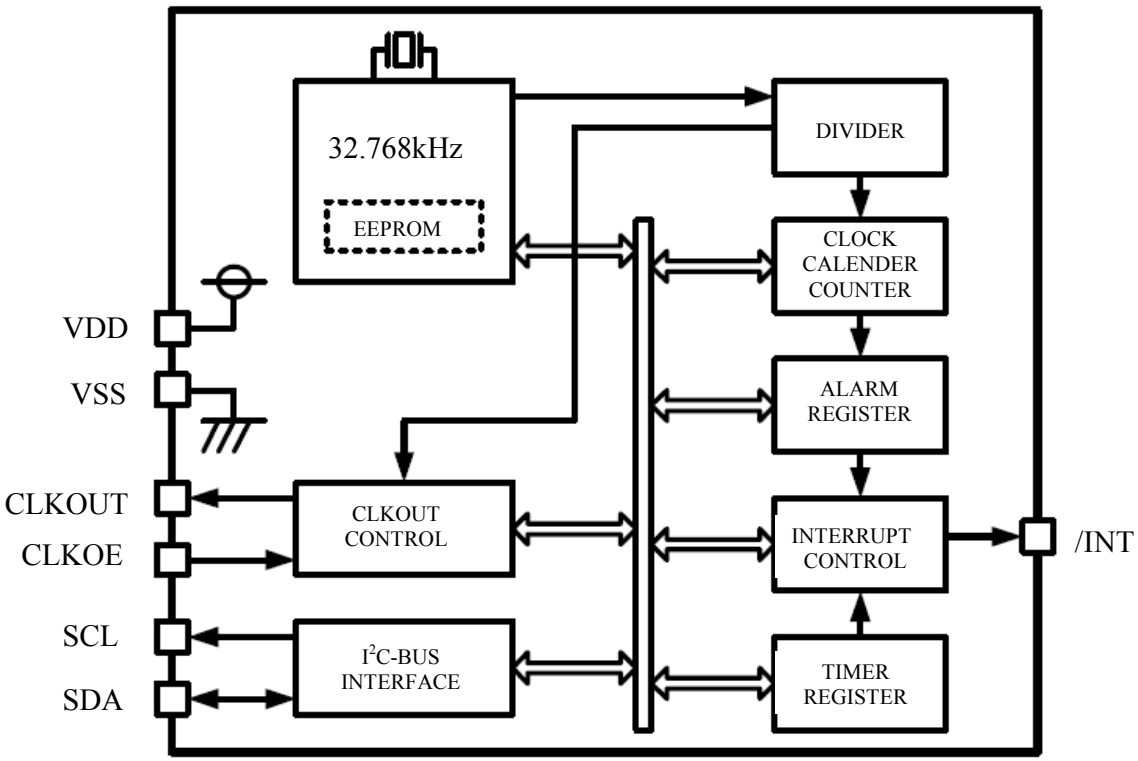
AB-RTCMK-32.768kHz

Pb RoHS Compliant

FUNCTION:

Pin No.	Pin Name	I/O	Function
1	CLKOE	Input	This is an input pin used to control the output mode of the CLKOUT pin. When this pin's level is high, the CLKOUT pin is in output mode. When it is low, the CLKOUT pin is "Hi-Z" (High Impedance).
2	/INT	Output	This pin is used to output alarm signals, timer signals, timer update signals, and other signals. This pin is an open drain pin.
3	N.C.		This pin is open.
4	VSS		This pin is connected to ground.
5	CLKOUT	Output	This pin outputs a 32.768kHz signal. This is the C-MOS output pin with output control provided via the CLKOE pin.
6	SCL	Input	This is the serial clock input for I^2C BUS communications.
7	SDA	I/O	This is the serial data input/output for I^2C BUS communications. This pin's signal is used for input and output of address, data, and ACK bits, synchronized with the serial clock used for I^2C communication. This pin is an N-ch open drain pin during output.
8	VDD		This pin is connected to a positive power supply.

BLOCK DIAGRAM:



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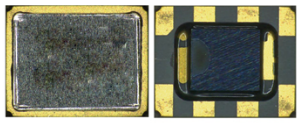

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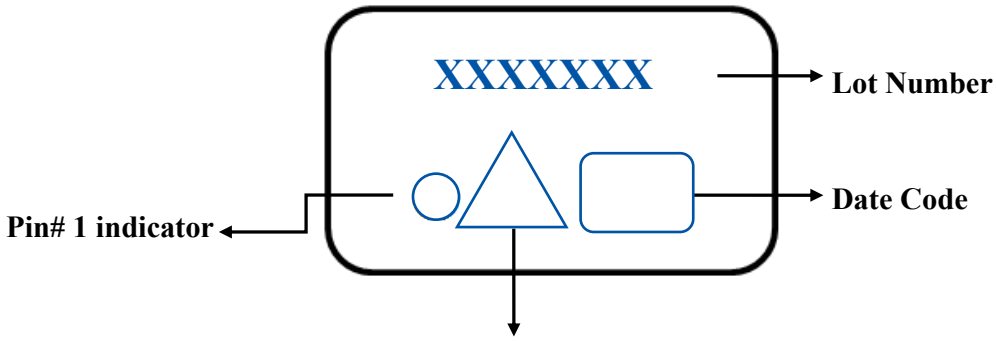
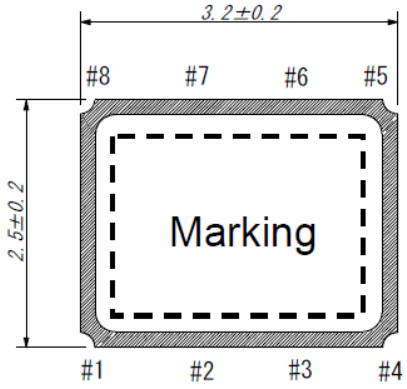
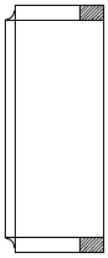
MARKING:

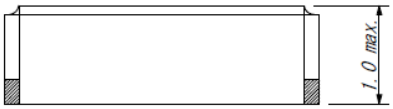


OUTLINE DRAWING:



Top View

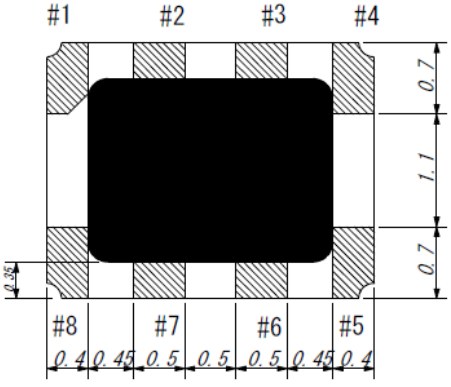




Side View

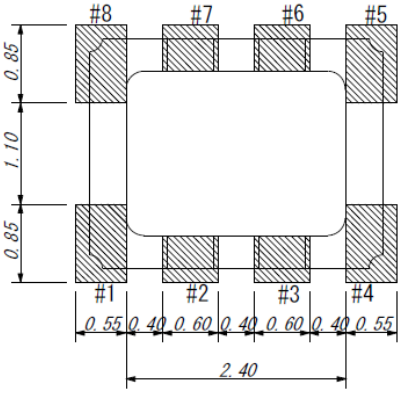
PIN / Function

#1 : CLKOE	#5 : CLKOUT
#2 : /INT	#6 : SCL
#3 : N.C.	#7 : SDA
#4 : VSS	#8 : VDD



Bottom View

Recommended Land Pattern



Dimension : mm

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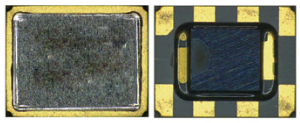

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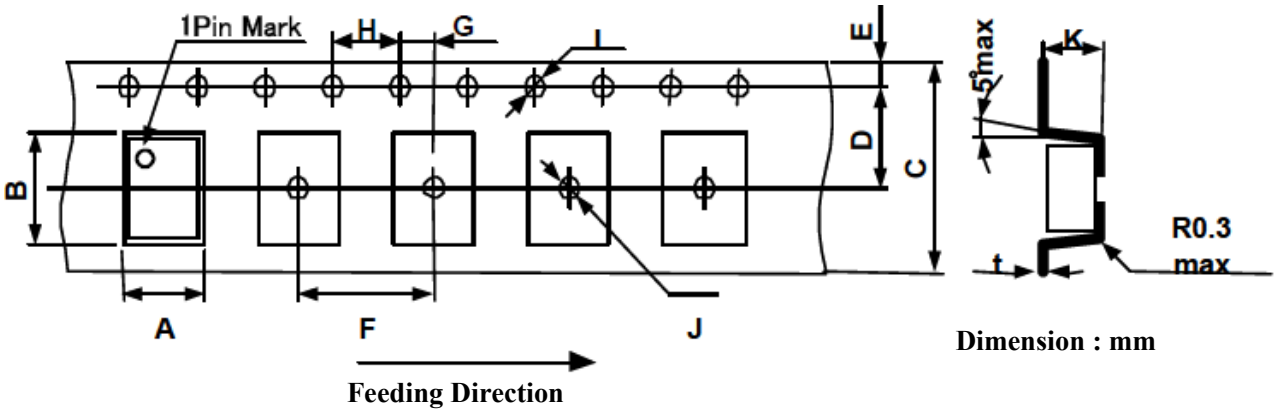
TAPE & REEL:

T: 1000pcs/reel
T3: 3000pcs/reel (standard reel quantity)

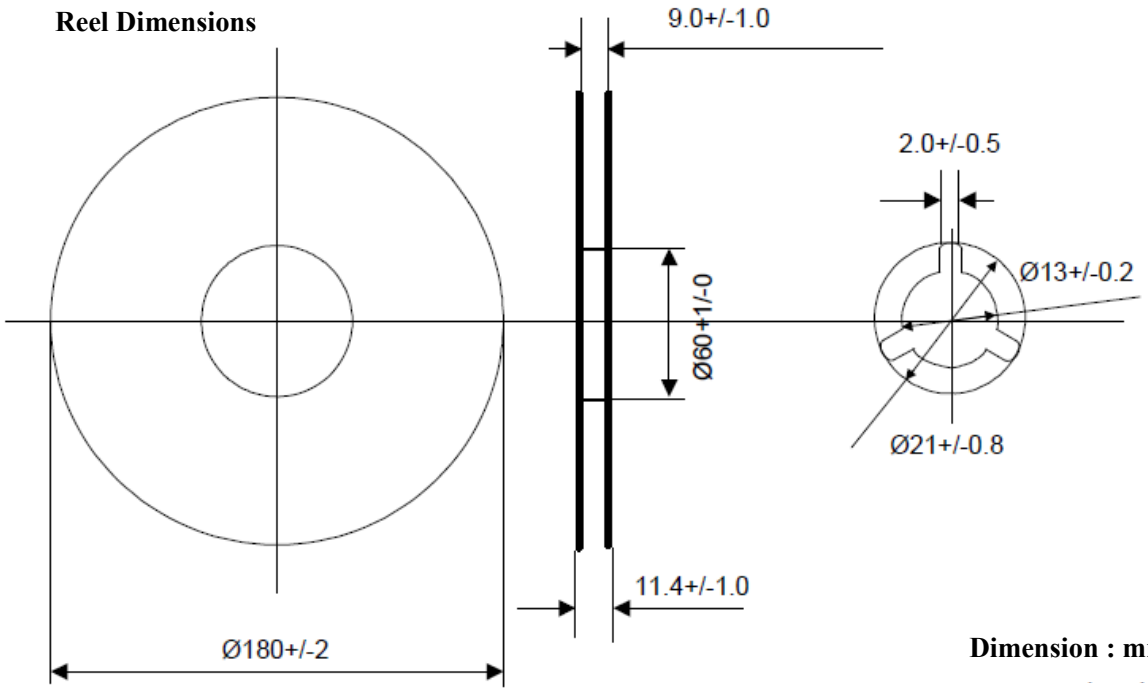


Feeding Direction

Dimension : mm

A	B	C	D	E	F
2.80 ± 0.1	3.50 ± 0.1	8.00 ± 0.3	3.50 ± 0.05	1.75 ± 0.1	4.00 ± 0.1
G	**H**	**I**	**J**	**K**	**T**
2.00 ± 0.05	4.00 ± 0.1	ø1.5 +1.0/-0	ø 1.5 +1.0/-0	1.10 ± 0.1	0.25 ± 0.05

Reel Dimensions



Dimension : mm

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Живое партнерство

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ИНН 7805602321 КПП 780501001 Р/С 40702810122510004610 ФАКБ "АБСОЛЮТ БАНК" (ЗАО) в г.Санкт-Петербурге К/С 30101810900000000703 БИК 044030703

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- *Специальные условия для постоянных клиентов.*
- *Подбор аналогов.*
- *Поставку компонентов в любых объемах, удовлетворяющих вашим потребностям.*

- *Приемлемые сроки поставки, возможна ускоренная поставка.*
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- *Комплексную поставку.*
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- *Формирование склада под заказчика.*

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- *Поставку компонентов, требующих военную и космическую приемку.*
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- *Наличие сертификата ISO.*

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- *Техническую поддержку проекта.*
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