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Real Time Clock Modul · JR8901

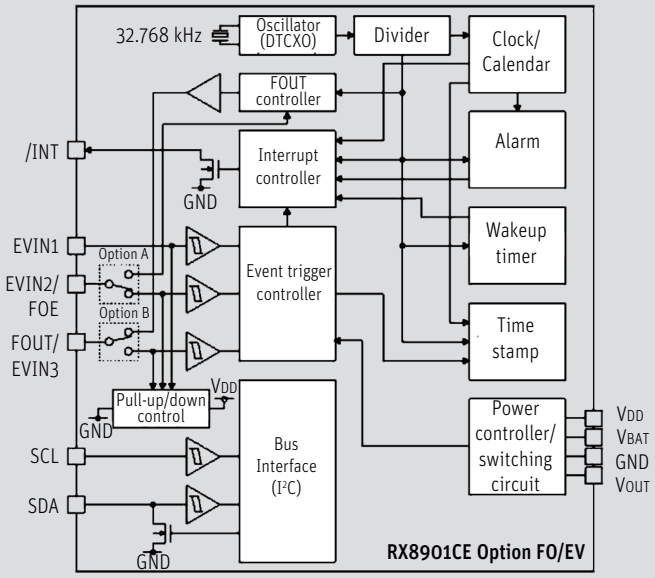
- RTC module with I²C interface, dimension 3.2 x 2.5 mm
- contains 32.768kHz crystal and temperature compensation
- wide supply voltage range 1.6 V - 5.5 V
- very low backup current consumption 240nA typ.
- seam sealad ceramic/metal package

RoHS compliant · Pb free · REACH compliant · Conflict mineral free

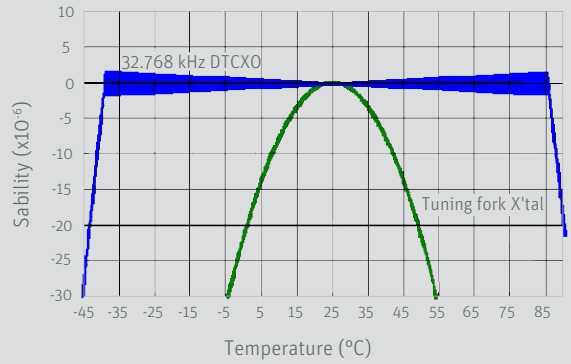
FEATURE LIST

TYPE	JR8901 temperature compensated RTC module with I²C I/F
RTC module with built-in 32.768 kHz crystal unit	interrupt output, configurable to every hour, every minute or every second
high frequency stability due to temperature compensation	alarm interrupt returns date / day / hour / minute / second
I²C-Bus interface with 400 kHz fast mode type	wakeup timer function, configurable range from 244 µs to 32 years
temperature compensated clock output selectable 1 Hz / 1024 Hz / 32768 Hz	up to 3 event inputs to detect multi anti-tampering attempts
low backup current 240 nA typ. at 3 V, temp. compensation every 2 seconds	timestamps can be triggered by event inputs, voltage drops or user command
automatic charging control for rechargeable battery / super capacitor / EDLC	up to 32 timestamp events can be stored
self-monitoring interrupt on oscillation stop / V_{BAT} low, V_{DD} low	guarantees a consistent time snapshot with mirror registers

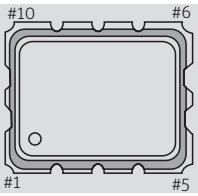
BLOCK DIAGRAM



TEMPERATURE COMPENSATION



PIN CONNECTION



# 1: V_{DD}		# 6: EVIN1	
# 2: V_{OUT}		# 7: SDA	
# 3: V_{BAT}		# 8: /INT	
# 4: EVIN3/FOUT		# 9: GND	
# 5: SCL		# 10: EVIN2	

PIN DESCRIPTION

Signal Name	Pin	I / O	Function	Information
V_{DD}	#1	-	power supply pin	V_{DD} supply voltage
V_{OUT}	#2	-	internal voltage output pin	connect a bypass capacitor of 1µF
V_{BAT}	#3	-	power supply pin for battery	to connect a primary or secondary battery, or a EDLC / super capacitor
FOUT*	#4	O	frequency output pin (CMOS)	according to frequency selection: 32.768 kHz, 1024 Hz, 1 Hz
EVIN3*		I	event input pin 3	with software controlled polarity and pull-up / pull-down selection, also operational in backup mode
SCL	#5	I	serial clock input pin	I²C serial clock input
EVIN1	#6	I	event input pin 1	with software controlled polarity and pull-up / pull-down selection, also operational in backup mode
SDA	#7	I / O	serial data input and output pin	I²C serial data input / output
/INT	#8	O	interrupt output	occurring at alarm, wakeup timer or time update events even in backup mode (N-channel open drain)
GND	#9	-	ground pin	
EVIN2	#10	I	event input pin 2	with software controlled polarity and pull-up / pull-down selection, also operational in backup mode

Jauch® THE PULSE OF PROGRESS

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please refer to the JR8901 manual for more functional details

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ORDER INFORMATION

JR	type	–	dimension	–	interface	–	frequency stability code	–	temp. range	–	connection option pin #4
Jauch RTC module	8901		32 = 3225		I2C		TS = ± 3.0 ppm in -40°C ~ +85°C ± 5.0 ppm in +85°C ~ +105°C TB = ± 5.0 ppm in -40°C ~ +85°C ± 8.0 ppm in +85°C ~ +105°C		T(-40/+105)		FO = FOUT EV = EVIN3

Example: JR8901-32-I2C-TS-T(-40/+105)-FO-LF (Suffix LF = RoHS compliant / Pb free)

OPERATING CONDITIONS

Type		JR8901
operating supply voltage V_{DD}		typ. 3.0V / 1.6V ~ 5.5V
temp. compensation voltage V_{TEMP}		typ. 3.0V / 1.6 V ~ 5.5 V
backup supply voltage V_{BAT}		typ. 3.0 V / 1.1 V ~ 5.5 V
falling edge delection of V_{DD}		typ. 1.45 V / 1.35 ~ 1.55 V
temperature range	operating	-40°C ~ +105°C
	compensation	-40°C ~ +105°C
frequency stability ref. to f at +25°C		two options, see order information
start-up time typ. / max. at +25°C		0.5 s / 1 s (if V_{DD} > 1.60 V)

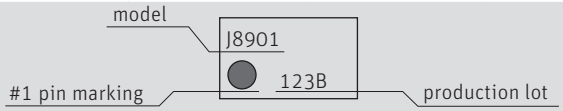
CURRENT CONSUMPTION

Item	Symbol	Conditions	Min.	Typ	Max.	Unit
current consumption I_{DD}	I_{BAT}	V_{BAT} = 3.0V; FSELO = FSEL1 = 1; /INT = Hi-Z; FOUT off; INIEN = 1 CHGEN = 0; SCL, SDA = L; temp. compensation interval 2 seconds	-	0.24	1.5	µA
	I_{32K}	V_{DD} = 3.0V; FSELO = FSEL1 = 1; /INT = Hi-Z; FOUT active; INIEN = 1 CHGEN = 0; SCL, SDA = H; temp. compensation interval 2 seconds	-	1.00	3.0	µA

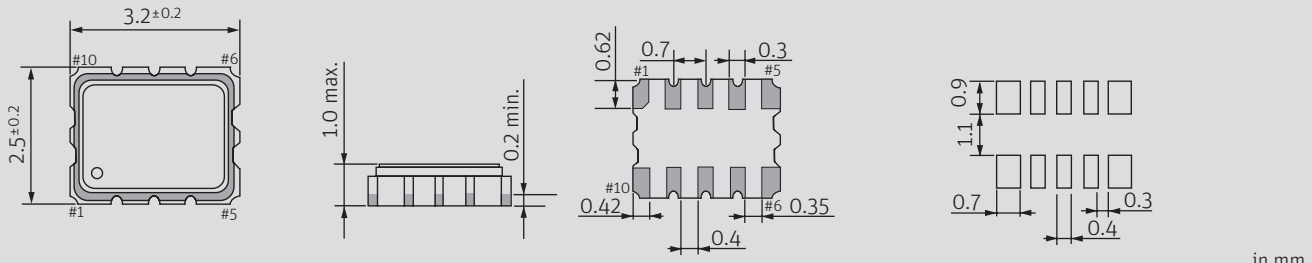
PACKAGING NOTE

standard packing unit is 2000 pieces per reel
250 pieces per reel optional

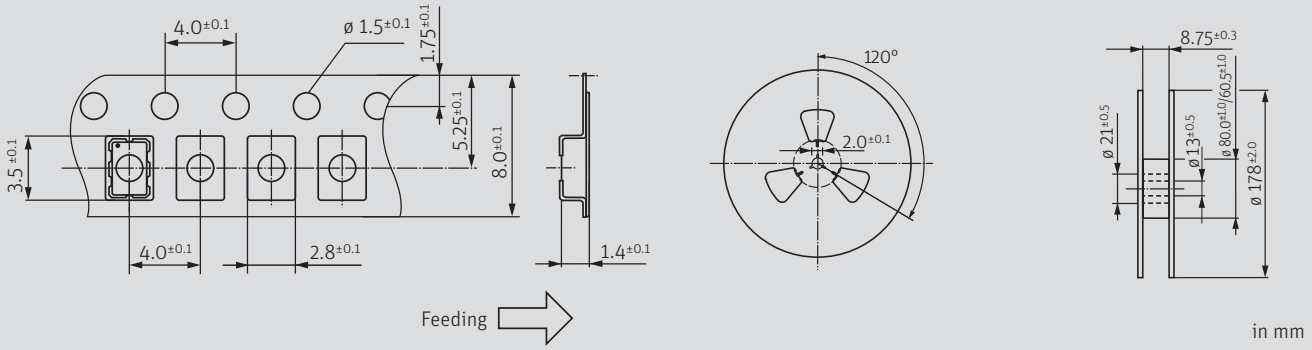
MARKING INFORMATION



DIMENSION



TAPING SPECIFICATION



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