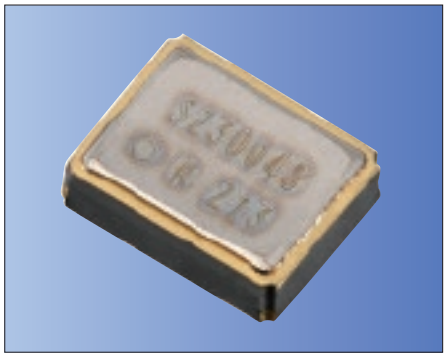
Real Time Clock Modules
Surface Mount Type Digital Temperature Compensated RTC Modules
KR3225Y Series

CMOS/ 3.0V Typ./ 3.2×2.5mm



RoHS Compliant

Features

- Miniature SMD type (3.2×2.5×1.0mm)
- Built-in 32.768kHz D-TCXO
- Excellent frequency stability : ±5.0x10^{-6}/ −40 to +85°C
- Low supply current : 0.6µA typ (V_{DD}=3.0V)
- Temperature compensated voltage range : 2.0V to 5.5V
- Time keeping voltage range : 1.3V to 5.5V
- I^2C-BUS interface voltage range : 1.5V to 5.5V
- I^2C-BUS serial interface type : 400kHz high speed type
- Frequency selection function : 32.768kHz, 1024Hz, 32Hz, 1Hz
- Voltage detection function : 2.0V temp. compensated voltage detection 1.5V Low Voltage Detection
- Various functions including full calender, alarm and timer

Applications

- High accuracy time references

How to Order

Frequency Tolerance (vs Temp.) : ±3.8×10^{-6}/ −10°C to 60°C

KR3225Y ① 32768 ② D ③ G ④ R ⑤ 30 ⑥ T ⑦ xx ⑧

Frequency Tolerance (vs Temp.) : ±5.0×10^{-6}/ −40°C to 85°C

KR3225Y ① 32768 ② E ③ A ④ W ⑤ 30 ⑥ T ⑦ xx ⑧

① Series

② Output Frequency

③ Frequency Stability

A	No Temp. Compensated
D	±3.8×10^{-6}
E	±5.0×10^{-6}

④ Lower Temperature

A	−40°C
G	−10°C

⑤ Upper Temperature

W	+85°C
R	+60°C

⑥ Supply Voltage

30	3.0V
33	3.3V
50	5.0V

⑦ Initial Frequency Tolerance

A	5±5×10^{-6}	B	0±5×10^{-6}	T	TCXO

⑧ Option Code

Packaging (Tape & Reel 3000 pcs./ reel)

Specifications

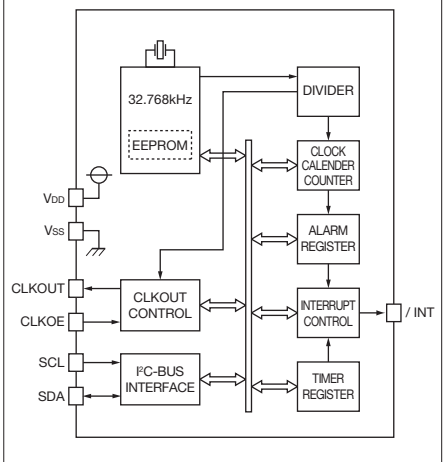
Item	Symbol	Conditions	Specification			Unit
			Min.	Typ.	Max.	
Nominal Frequency	f_nom		—	32.768	—	kHz
Time Keeping Voltage	V_{DD}	—	1.3	3.0	5.5	V
Temperature Compensation Voltage	V_{TEM}	—	2.0	3.0	5.5	V
Interface Voltage	V_{INT}	—	1.5	3.0	5.5	V
Operationg Temperature Range	T_use	No condensation	−40	+25	+85	°C
Frequency Stability vs. Temp.	fo-Tc	E : Ta=−40 to +85°C	−5.0	—	+5.0	×10^{-6}
Start up Time	t_str	Ta=25°C	—	—	1.0	sec
		Ta=−40 to +85°C	—	—	3.0	sec
Power Supply Current1	Icc1	SCL=SDA=/ INT=V_{DD}, CLKOE=V_{SS} CLKOUT Non-operating output V_{DD}=3V	—	0.6	2.0	µA
Power Supply Current2	Icc2	SCL=SDA=/ INT=V_{DD}, CLKOE=V_{DD} CLKOUT output 32.768kHz, V_{DD}=3V Output at no load	—	1.5	4.0	µA
		SCL=SDA=/ INT=V_{DD}, CLKOE=V_{DD} CLKOUT output 32.768kHz, V_{DD}=3V CL=15pF	—	2.7	5.5	µA
Low Voltage Detection Voltage	V_{DET}		1.3	1.4	1.5	V

* Please contact us for other specifications.

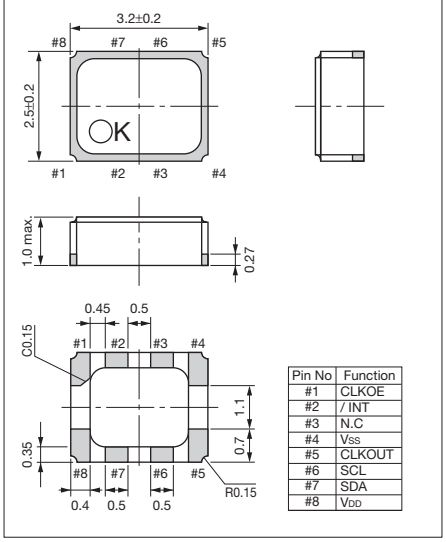
Pin Functions

Pin Name	I/ O	Function
CLKOE	I	Input to control the output mode of the CLKOUT
/ INT	O	Outputs for alarm signals, timer signals, timer update signals and other signals
V_{SS}	—	Pin connected to ground
CLKOUT	O	32.768kHz signal output (CMOS output)
SCL	I	Serial clock input for I^2C BUS communications
SDA	I/ O	Serial data input output for I^2C BUS communications
V_{DD}	—	This pin is connected to a positive power supply

Block Diagram

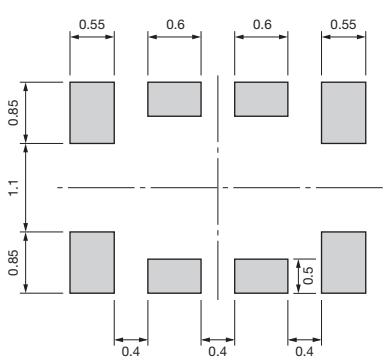


Dimensions (Unit: mm)



Pin No	Function
#1	CLKOE
#2	/ INT
#3	N.C
#4	V_{SS}
#5	CLKOUT
#6	SCL
#7	SDA
#8	V_{DD}

Recommended Land Pattern (Unit: mm)



Note: A capacitor of value 0.01µF between V_{DD} and GND is recommended.