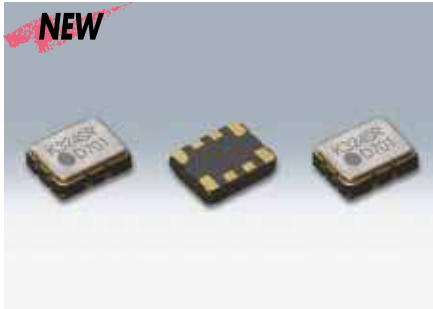


# SMD Real Time Clock Module

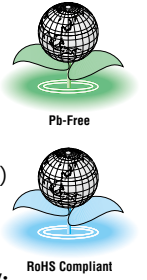
## DSK324SR



Actual size

### Features

- Digital temperature compensated type
- High precision:  $\pm 5.0 \times 10^{-6}$  ( $-40 \sim 85^{\circ}\text{C}$ )  
 $\pm 3.8 \times 10^{-6}$  ( $-10 \sim 60^{\circ}\text{C}$ )
- Low current consumption
- Low voltage operation:  $+2.0 \sim +5.5\text{V}$  (Temperature Compensated Operating)  
 $+1.3 \sim +5.5\text{V}$  (Clock Timing Operating)
- I<sup>2</sup>C-BUS serial interface: 400kHz fast-mode compatible
- Clock function: hour·minute·second,  
Calendar function with auto leap year adjustment: year·month·day·day of week
- Alarm interrupt function: day·day of week·hour·minute
- Fixed-cycle timer interrupt function:  $244\mu\text{s} \sim 255\text{min}$
- Time update interrupt function: minute·second
- Clock output function: 32.768kHz, 1024Hz, 32Hz, 1Hz
- Supply voltage detection function:  
 $+2.0\text{V}$  temperature compensation operating voltage detection  
 $+1.5\text{V}$  supply voltage undervoltage detection
- AEC-Q 100 compliant



### Applications

- High precision clock source

\*I<sup>2</sup>C-BUS\* is a registered trademark of NXP Semiconductor

### Standard Specification

Item	Legend	Spec.			Unit	Condition
		min.	typ.	max.		
Output Frequency	F0		32.768		kHz	
Supply Voltage Range	Vcc	+1.3	—	+5.5	V	(Clock Timing Operating)
	Vtem	+2.0	—	+5.5		(Temperature Compensated Operating)
	Vint	+1.5	—	+5.5		(Interface Operation) I <sup>2</sup> C-BUS
Frequency Tolerance	f_tol	-5.0	—	+5.0	$\times 10^{-6}$	$-40 \sim +85^{\circ}\text{C}$
		-3.8	—	+3.8		$-10 \sim +60^{\circ}\text{C}$
Current Consumption	Icc1	—	+0.6	+2.0	$\mu\text{A}$	Vcc = +3.0V, Temperature Compensation Interval: 30s, SCL = SDA = INTN = Vcc, CLKOE = GND (Output Off)
	Icc2	—	+1.5	+4.0	$\mu\text{A}$	Vcc = +3.0V, Temperature Compensation Interval: 30, No Load, SCL = SDA = INTN = CLKOE = Vcc (Output On)
Load Condition	L_cmos	—	—	15	pF	
Start Up Time	Tstart	—	—	1.0	s	Ta = +25°C, Vcc = +1.3V
		—	—	3.0		Ta = $-40 \sim +85^{\circ}\text{C}$ , Vcc = +1.3 ~ +5.5V
Power Supply Detection Voltage	VDET1*1	+1.8	+1.9	+2.0	V	Temperature Compensated Operation Detection Voltage
	VDET2*2	+1.3	+1.4	+1.5		Power Supply Undervoltage Detection
Packing Unit		2000pcs./reel ( $\phi 180$ )				

\*1: When Vcc falls below VDET1, the internal detection circuit operates, and the intermittent temperature compensating stops. At the same time, the current temperature compensating data value is retained. When Vcc rises above VDET1 again, the intermittent temperature compensating is enabled.

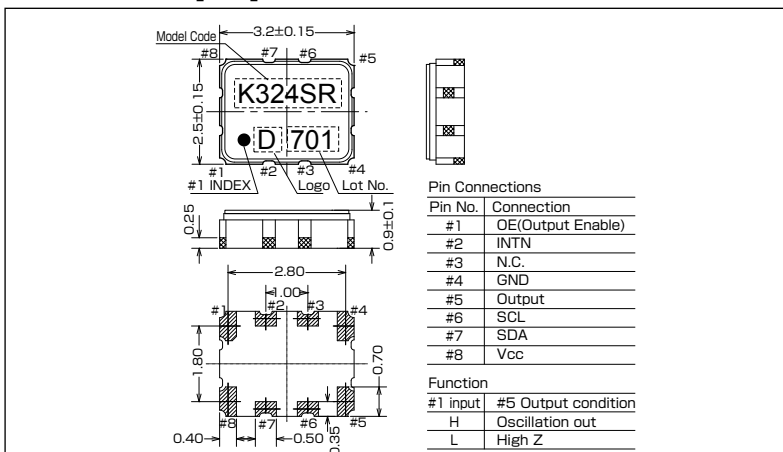
\*2: The Detection circuit operates at the temperature compensation interval.

Consult our sales representative for other specifications.

### Description

Pin No.	Name	I/O	Function
#1	OE	I	Output control enable input (L: High impedance, H: Clock output)
#2	INTN	O	1Hz signal, alarm interrupt signal, fixed-cycle timer interrupt signal, and time update interrupt signal, Nch open-drain output.
#3	N.C.	—	None connection
#4	GND	—	Ground connection.
#5	Output	O	Clock output connection.
#6	SCL	I	I <sup>2</sup> C-BUS serial interface clock input connection.
#7	SDA	I/O	I <sup>2</sup> C-BUS serial interface data input/output connection.
#8	Vcc	—	Supply Voltage

### Dimensions [mm]



### Recommended Land Pattern [mm]

