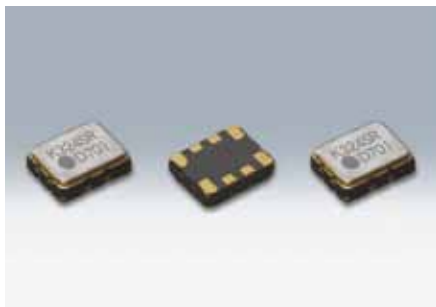


SMD Real Time Clock Module

DSK324SR



Actual size

■ Features

- Digital temperature compensated type
- High precision : $\pm 5.0 \times 10^{-6}$ (−40 to +85°C)
 $\pm 3.8 \times 10^{-6}$ (−10 to +60°C)
- Low current consumption
- Low voltage operation : +2.0 to +5.5V(Temperature Compensated Operating)
+1.3 to +5.5V(Clock Timing Operating)
- I²C-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 : 244μs to 255min
- Time update interrupt function : minute·second
- Clock output function : 32.768kHz, 1024Hz, 32Hz, 1Hz
- Supply voltage detection function :
+2.0V temperature compensation operating voltage detection
+1.5V supply voltage undervoltage detection
- AEC-Q100/AEC-Q200 compliant



■ Applications

- High precision clock source

¹I²C-BUS[®] is a registered trademark of NXP Semiconductor

■ Standard Specification

Item	Legend	Spec.			Unit	Condition
		min.	typ.	max.		
Output Frequency	f ₀	—	32.768	—	kHz	
Supply Voltage Range	V _{cc}	+1.3	—	+5.5	V	(Clock Timing Operating)
	V _{tem}	+2.0	—	+5.5		(Temperature Compensated Operating)
	V _{int}	+1.5	—	+5.5		(Interface Operation) I ² C-BUS
Frequency Tolerance	f _{tol}	−5.0	—	+5.0	× 10 ^{−6}	−40 to +85°C
		−3.8	—	+3.8		−10 to +60°C
Current Consumption	I _{cc1}	—	+0.6	+2.0	μA	V _{cc} = +3.0V, Temperature Compensation Interval:30s, SCL=SDA=INTN=V _{cc} ,CLKOE=GND (Output Off)
	I _{cc2}	—	+1.5	+4.0	μA	V _{cc} = +3.0V, Temperature Compensation Interval:30, No Load, SCL=SDA=INTN=CLKOE=V _{cc} (Output On)
Load Condition	L _{CMOS}	—	—	15	pF	
Start Up Time	T _{start}	—	—	1.0	s	T _a = +25°C, V _{cc} = +1.3V
		—	—	3.0		T _a = −40 to +85°C, V _{cc} = +1.3 to +5.5V
Power Supply Detection Voltage	V _{DET1} (1)	+1.8	+1.9	+2.0	V	Temperature Compensated Operation Detection Voltage Power Supply Undervoltage Detection
	V _{DET2} (2)	+1.3	+1.4	+1.5		
Packing Unit (3)		2000pcs./reel (φ 180)				

(1) When V_{cc} falls below V_{DET1}, the internal detection circuit operates, and the intermittent temperature compensating stops. At the same time, the current temperature compensating data value is retained. When V_{cc} rises above V_{DET1} again, the intermittent temperature compensating is enabled.

(2) The Detection circuit operates at the temperature compensation interval.

(3) Moisture prevention packing is unnecessary.

Moisture Sensitivity Level : Level 1 (IPC/JEDEC J-STD-033)

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 ² C-BUS serial interface clock input connection.
#7	SDA	I/O	I ² C-BUS serial interface data input/output connection.
#8	V _{cc}	—	Supply Voltage

[mm]

■ Dimensions

■ Recommended Land Pattern

<Top View>

Pin Connections

Pin No.	Connection
#1	OE(Output Enable)
#2	INTN
#3	N.C.
#4	GND
#5	Output
#6	SCL
#7	SDA
#8	V _{cc}

Function

#1 Input	#5 Output condition
H	Oscillation out
L	High Z