

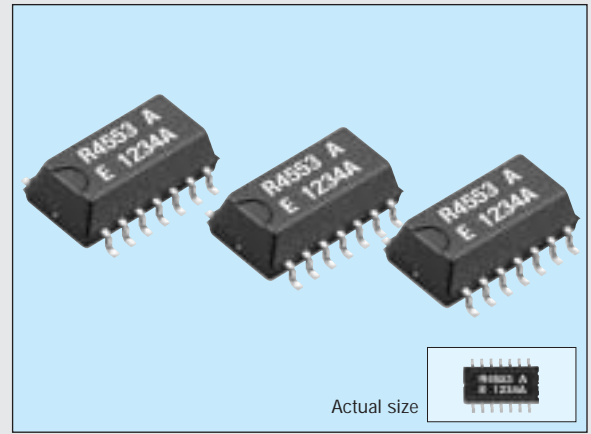
SERIAL-INTERFACE REAL TIME CLOCK MODULE WITH SRAM

RTC-4553

Product number (please refer to page 2)

Q4145535xxxxx00

- Built-in crystal unit allows adjustment-free efficient operation.
- Automatic calendar function (year, month, day, day of the week, hour, minute, second).
- Automatic leap year correction.
- Built-in 30 x 4-bit S-RAM.
- Reference pulse output. (1024 Hz, 1/10 Hz)



The details are mentioned in the application manual.

<http://www.epsondevice.com>

Specifications (characteristics)

Absolute Max. rating

Item	Symbol	Condition	Min.	Max.	Unit
Supply voltage	V _{DD}	V _{DD} to GND		+6.0	V
Input voltage	V _{IN}	S _{IN} , S _{CK} , WR, CS ₀ , CS ₁	-0.3	V _{DD} +0.3	
Output voltage	V _{OUT}	S _{OUT} , TP _{OUT}			
Storage temperature	T _{STG}	Stored as bare product after unpacking	-55	+125	°C

Operating range

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Power voltage	V _{DD}	—	2.7	5.0	5.5	V
Clock voltage	V _{CLK}	—	2.0	—	5.5	V
Operating temperature	T _{OPR}	No condensation	-30	—	+70	°C

Frequency characteristics

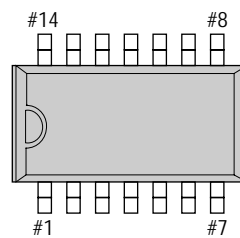
Item	Symbol	Condition	Range	Unit	
Frequency tolerance	Δf/f ₀	T _a =+25 °C, V _{DD} =5 V	AA	5±5	x 10 ⁻⁶
			A	5±10	
			B	5±20	
Oscillation start-up time	t _{STA}	T _a =+25 °C, V _{DD} = 3.0 V	3.0 Max.	s	
Frequency temperature characteristics	T _{OP}	T _a =-10 °C to +70 °C, V _{DD} =5 V Reference at +25 °C	+10 -120	x 10 ⁻⁶	
Frequency voltage characteristics	f/V	T _a =Fix, V _{DD} =2 V to 5.5 V Reference at 5 V	±5		
Aging	f _a	T _a =+25 °C, V _{DD} =5 V, first year		x 10 ⁻⁴ /year	

DC characteristics (GND=0 V, V_{DD}=5 V ± 10 %, T_a=-30 °C to +70 °C)

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Current consumption	I _{DD1}	S _{CK} =500 kHz	—	—	100	μA
	I _{DD2}	S _{CK} =0 Hz	—	1.0	3.0	
Output voltage	V _{OH}	I _{OH} =-400 μA	V _{DD} -0.4	—	—	V
	V _{OL}	I _{OL} =1.6 mA	—	—	0.4	
Off leak current	I _{OZH}	V _{OUT} =5.5 V	-2.0	—	2.0	μA
	I _{OZL}	V _{OUT} =0 V	—	—	—	
Input voltage	V _{IH}	—	4/5 V _{DD}	—	—	V
	V _{IL}	—	—	—	1/5 V _{DD}	
Input current	I _{IH}	V _{IN} =5.5 V	-2.0	—	2.0	μA
	I _{IL}	V _{IN} =0 V	—	—	—	

Terminal connection

RTC-4553



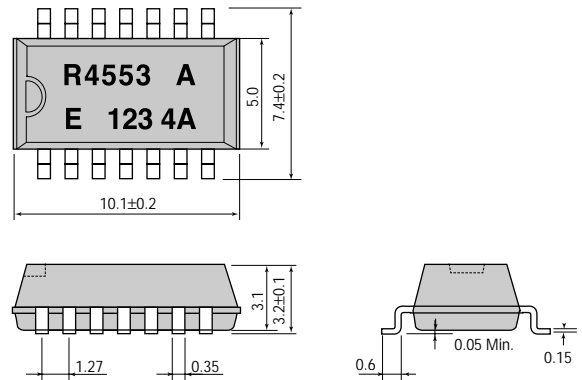
No.	Pin terminal	No.	Pin terminal
1	GND	14	TP _{OUT}
2	WR	13	S _{OUT}
3	S _{IN}	12	CS ₁
4	S _{CK}	11	CS ₀
5	L1	10	L5
6	L2	9	L4
7	L3	8	V _{DD}

L1 to L5 are test pin. Do not connect them to any terminals.

External dimensions

(Unit: mm)

RTC-4553 (SOP 14-pin)



Metal may be exposed on the top or bottom of this product. This won't affect any quality, reliability or electrical spec.

Block diagram

