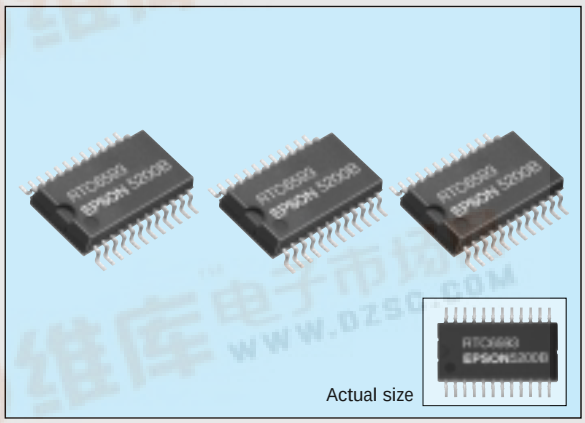
REAL TIME CLOCK MODULE FOR PC/AT *1

RTC-6593

- Builtin crystal unit allows adjustment-free efficient operation.
- Provides 114-bytes of backed-up RAM.
- Extended alarm function.
- Low current consumption.
- A builtin power supply switching circuit makes it possible to provide automatic power supply backup to both the RTC and extended RAM.



*1 PC/AT is a trademark of International Business Machines Corporation.

Specifications (characteristics)

Absolute Max. rating

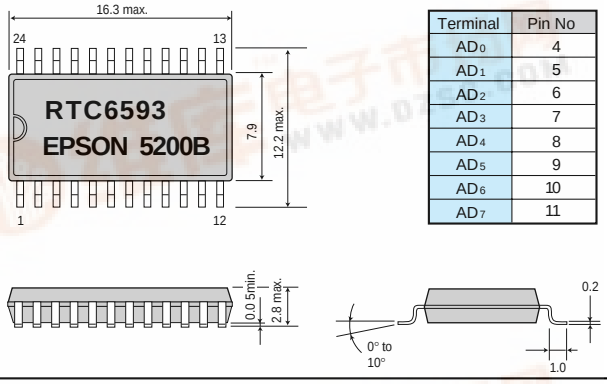
Item	Symbol	Condition	Rating	Unit
Supply voltage	V_{DD}	V_{DD}-GND	- 0.3 to + 7.0	V
Input voltage	V_{IN}	Input pin	- 0.3 to V_{DD} + 0.3	
Storage temperature	T_{STG}	—	- 55 to +125	˚C
Soldering conditions	T_{SOL}	Twice under 260˚C within 10 seconds or under 230˚C within 3 minutes		

Operating range, frequency and DC characteristics

Item		Symbol	Condition	Min.	Typ.	Max.	Unit
Supply voltage		V_{DD}	V_{DD} - GND	4.5	5.0	5.5	V
Operating temperature		T_{OPR}	—	-10		+70	˚C
Frequency tolerance		Δf/fo	Ta=25˚C, V_{DD}=5V			5±20	ppm
Temperature characteristics		Top	Ta=-10 to 70˚C 25˚C standard			+10 -120	
Voltage characteristics		fv	Ta=stable			±6	ppm/V
Aging		fa	Ta=25˚C, V_{DD}=5V First year			±5	ppm/Y
Input voltage	High level	V_{IH}	—	2.2		V_{DD}+0.3	V
	Low level	V_{IL}		-0.3		0.8	
Output voltage	High level	V_{OH}	V_{DD}=5V I_{LOAD}=-4mA	2.4			
	Low level	V_{OL}	V_{DD}=5V I_{LOAD}=+4mA			0.4	
Power supply current		I_{DD}	Output unloaded	—	3	10	mA
Battery supply current		I_{BAT}	V_{BAT}=3V V_{DD}= 0V		0.5	1.0	μA

External dimensions

(Unit: mm)



Terminal	Pin No
AD_0	4
AD_1	5
AD_2	6
AD_3	7
AD_4	8
AD_5	9
AD_6	10
AD_7	11

Terminal functions

Terminal	Function	Pin No.
MOT	Model select (input)	1
AD_0 to $_7$	Multiplexed bi-direction address/data buses	4 to 11
GND	Power supply (grand)	12
$\overline{RTC}$	Real time clock select (input)	13
AS	Address strobe (input)	14
R/$\overline{W}$	Read/Write (input)	15
DS	Data strobe (input)	17
$\overline{RESET}$	Reset (input)	18
$\overline{IRQ}$	Interrupt request (output)	19
V_{BAT}	Back-up power supply	20
$\overline{XIRQ}$	Extended alarm interrupt request (output)	21
$\overline{XALM}$	Extended alarm select (input)	22
SQW	Square wave output	23
V_{DD}	Power supply (+5V)	24
NC	Not connected internally	2,3,16