

DALLAS

SEMICONDUCTOR

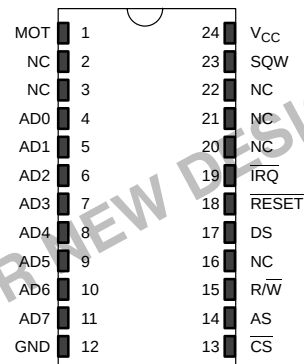
DS1287

Real Time Clock

FEATURES

- Drop-in replacement for IBM AT computer clock/calendar
- Pin compatible with the MC146818A
- Totally nonvolatile with over 10 years of operation in the absence of power
- Self-contained subsystem includes lithium, quartz, and support circuitry
- Counts seconds, minutes, hours, day of the week, date, month, and year with leap year compensation
- Binary or BCD representation of time, calendar, and alarm
- 12- or 24-hour clock with AM and PM in 12-hour mode
- Daylight Savings Time option
- Selectable between Motorola and Intel bus timing
- Multiplex bus for pin efficiency
- Interfaced with software as 64 RAM locations
 - 14 bytes of clock and control registers
 - 50 bytes of general purpose RAM
- Programmable square wave output signal
- Bus-compatible interrupt signals ($\overline{\text{IRQ}}$)
- Three interrupts are separately software-maskable and testable
 - Time-of-day alarm once/second to once/day
 - Periodic rates from 122 μs to 500 ms
 - End of clock update cycle

PIN ASSIGNMENT



24 PIN ENCAPSULATED PACKAGE

PIN DESCRIPTION

AD0–AD7	- Multiplexed address/data bus
NC	- No connection
MOT	- Bus type selection
$\overline{\text{CS}}$	- Chip select
AS	- Address strobe
$\overline{\text{R/W}}$	- Read/write input
DS	- Data strobe
$\overline{\text{RESET}}$	- Reset input
$\overline{\text{IRQ}}$ (drain)	- Interrupt request output (open drain)
SQW	- Square wave output
V_{CC}	- +5 volt supply
GND	- Ground

DESCRIPTION

The DS1287 Real Time Clock is designed to be a direct replacement for the MC146818A. For a complete description of operating conditions, electrical and

mechanical characteristics, bus timing, and pin descriptions see the DS12887 data sheet.