

**DALLAS**  
SEMICONDUCTOR

## DS1287A Real Time Clock

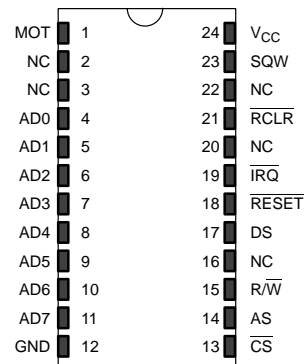
### FEATURES

- 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  $\mu\text{s}$  to 500 ms
  - End of clock update cycle

### DESCRIPTION

The DS1287A is identical to the DS1287 with the addition of the RAM clear pin. For a complete description of operating conditions, electrical and mechanical charac-

### 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
R/ $\overline{\text{W}}$	- 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 <sub>CC</sub>	- +5 volt supply
GND	- Ground
$\overline{\text{RCLR}}$	- RAM clear

teristics, bus timing, and pin descriptions see the DS12887A data sheet.