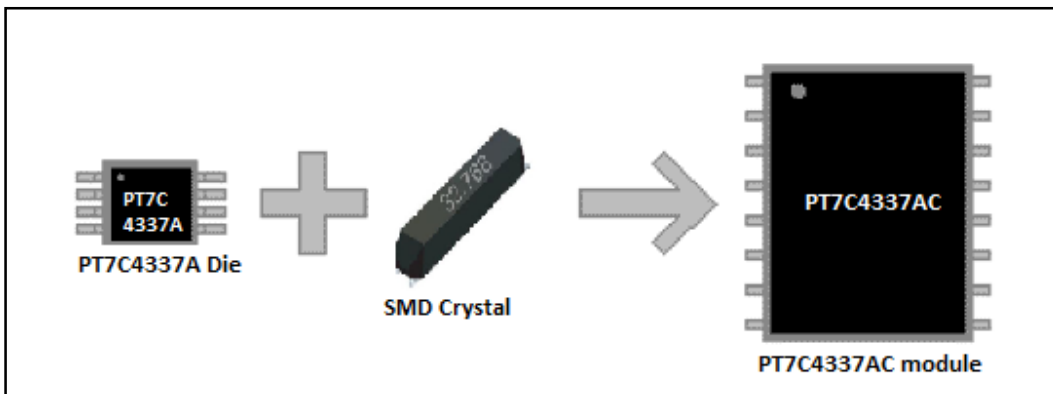
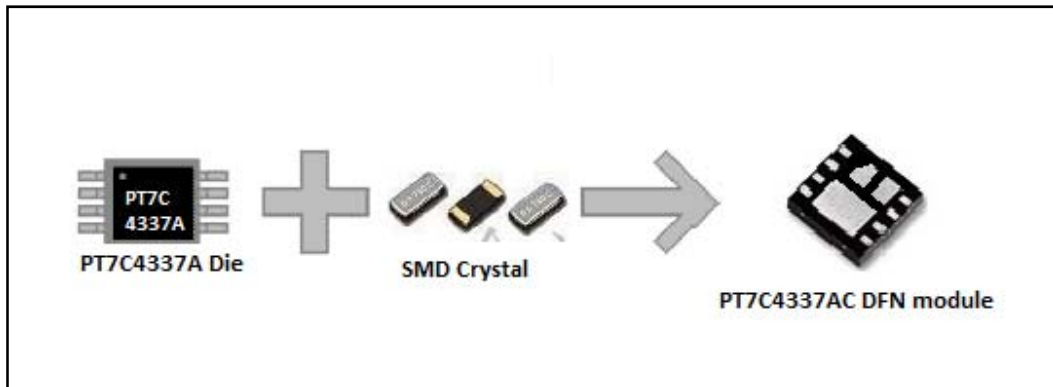


## FAQ: About the Integrated-Crystal Package Real Time Clock Module

### Introduction:

Pericom offers integrated-crystal package options for selected stand-alone, real-time clock (RTC) products. The new package combines a serial interface (I<sup>2</sup>C) RTC device with a compatible 32.768 kHz quartz crystal into a single 8-pin DFN4x4 or 16-pin SOIC package.



We list some of them frequently asked questions about the new integrated-crystal package option in the following pages.

## What Real-Time Clocks are Available in 8-pin DFN4x4 Package?

Available timekeeping devices with 8-pin DFN4x4 package options are the **PT7C4337AC**, **PT7C4339C** and **PT7C43390C**. More devices in this package option will be available in the future.

## What Real-Time Clocks are Available in 16-pin SOIC Package?

Available timekeeping devices with 16-pin SOIC package option are the **PT7C4337AC**. More devices in this package option will be available in the future.

## What are the Dimensions of the Package?

16-pin SOIC package is a standard 300-mil-wide, 16-pin SOIC. The dimensions of the 16-pin package are 400 mils x 300 mils x 100 mils. The dimensions of the 8-pin DFN4x4 package are 4mm x 4mm x 1mm.

## What are the Benefits of this New Package Options?

The benefits offered by these new package options include:

- Guaranteed operation of the RTC and crystal (proper load capacitance and ESR)
- Elimination of crystal procurement responsibilities
- No concerns of crystal in printed circuit board (PC board) layout
- No extra manufacturing step requirement for adding a through-hole crystal

## Is there an Improvement in Timekeeping Accuracy?

There are possible minor improvements in accuracy due to reduced parasitic capacitance, reduced PCB leakage from contaminants, and proper crystal load capacitance. The device data sheets specify the expected crystal accuracy at nominal VCC and room temperature (25°C).

## Are there any Special Handling Issues?

The packages contain a quartz tuning-fork crystal. Pick-and-place equipment may be used, but precautions should be taken to ensure that excessive shocks are avoided. Ultrasonic cleaning should be avoided.

Moisture-sensitive packages are shipped from the factory dry-packed. Handling instructions listed on the package label must be followed to prevent damage during reflow. Refer to the IPC/JEDEC J-STD-020 standard for moisture-sensitive device (MSD) classifications.

## Are there any Special Requirements for Solder Reflow of this Package?

The packages may be reflowed using a reflow profile that complies with JEDEC J-STD-020.

## How many times can the Package go through Reflow?

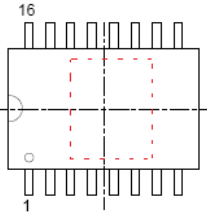
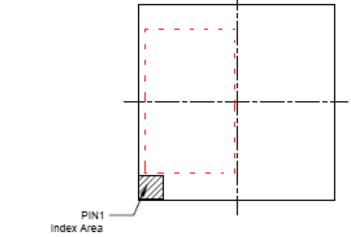
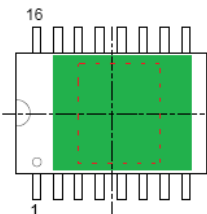
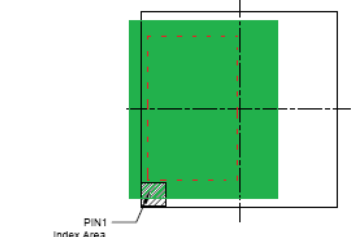
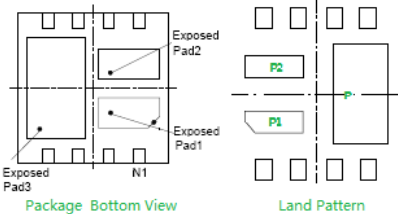
Exposure to reflow is limited to three times (max).

## Is the Package RoHS-Compliant or Lead-Free (Pb-Free)?

The package has been qualified as an RoHS 5/6-compliant part, which has an exemption for lead in a piezoelectric device. For details, see our lead-free information page.

### Are there any Guidelines for PC-Board Layout?

It is recommended that no signal traces run under the package unless a ground plane is placed between the package and the signal line. All NC (no connect) pins must be connected to ground.

RTC SPECIAL PACKAGE APPLICATION INSTRUCTION			
Package		SOIC16L(300MIL)--S16	DFN4X4-8L(P0.8T1.0)--ZSA8
<b>Top Visial Inspeicton</b>	<b>Drawing</b>		
	<b>Note</b>	The crystal metal case maybe visitable in the red broken lines area of package top, but it has no effect on the device's characteristics.	
<b>GND Pattern</b> <Not exposed>	<b>Drawing</b>		
	<b>Note</b>	The green shaded area indicates a GND pattern instead of any other signal trace or without pattern.	
<b>Land Pattern</b>	<b>Drawing</b>	N/A	
	<b>Note</b>	N/A	For "P", it need connect "GND". For "P1" and "P2", they connect the crystal two pins by Exposed Pad1 and Exposed Pad2 of package, so can't connect "GND". And "GND pattern" need under of "P1" and "P2".