

## Toaster Controller

### Features

- Defrost mode for frozen bread
- Reheat mode
- Operating voltage: 3.5~5.5V
- Few external components
- DIP-8 and SOIC-8 package

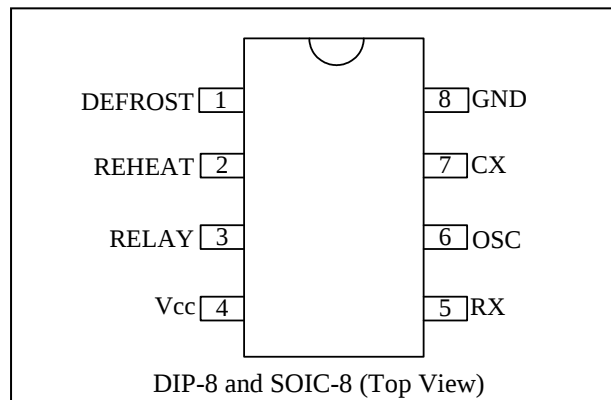
### Description

The PT8A2511 is a CMOS LSI chip designed for toaster. Besides normal heating, it also provides defrost and reheat work modes. It provides low cost solution for toaster.

### Applications

- Toaster

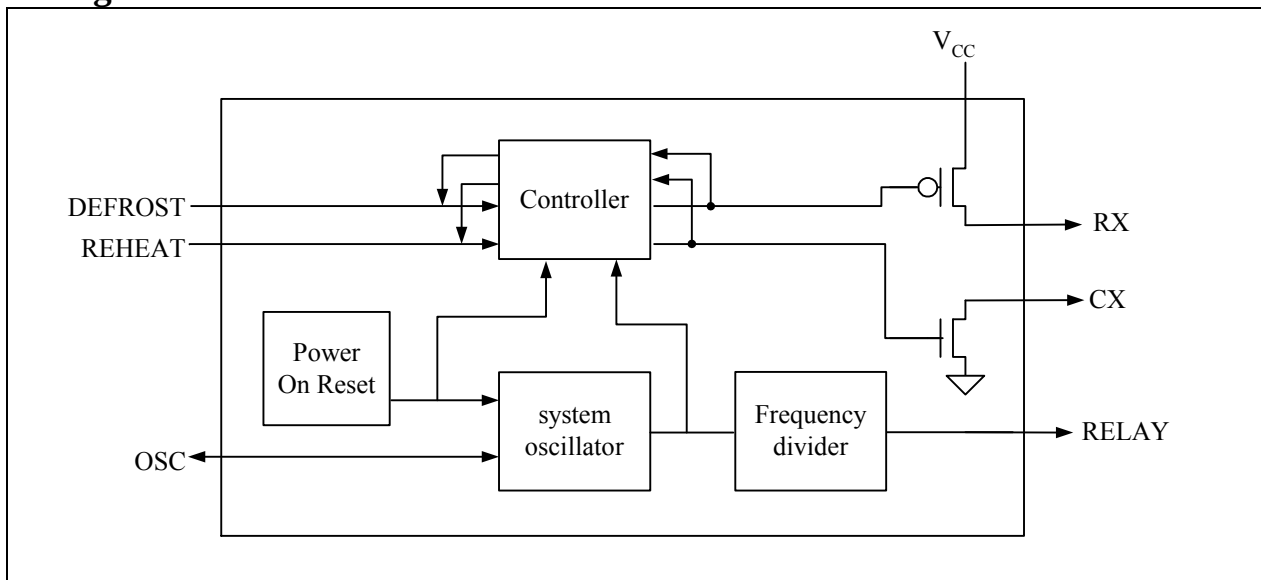
### Pin Configuration



### Pin Description

| Name    | Pin No. | Type | Description                                                                                                       |
|---------|---------|------|-------------------------------------------------------------------------------------------------------------------|
| DEFROST | 1       | I/O  | As input, requires a negative pulse to active "Defrost" function. As output, gives a "Defrost" function indicator |
| REHEAT  | 2       | I/O  | As input, requires a negative pulse to active "Reheat" function. As output, gives a "Reheat" function indicator   |
| RELAY   | 3       | O    | RELAY drive output. High active.                                                                                  |
| Vcc     | 4       | -    | Power supply                                                                                                      |
| RX      | 5       | O    | Shorts to VCC once an active negative pulse appears at Reheat                                                     |
| OSC     | 6       | I/O  | Oscillator input/output, oscillator's Frequency of 1024Hz with an external R1,C1                                  |
| CX      | 7       | O    | Shorts to GND once an active negative pulse appears at Defrost                                                    |
| GND     | 8       | -    | Power Ground                                                                                                      |

## Block Diagram



## Maximum Ratings

|                                                                          |                 |
|--------------------------------------------------------------------------|-----------------|
| Storage Temperature .....                                                | -40°C to +125°C |
| Ambient Temperature with Power Applied .....                             | 0 °C to +85 °C  |
| Supply Voltage to Ground Potential (Inputs & V <sub>CC</sub> Only) ..... | -0.5 to +5.5V   |
| Supply Voltage to Ground Potential (Outputs & D/O Only) .....            | -0.5 to +5.5V   |
| DC Input Voltage .....                                                   | -0.5 to +5.5V   |
| DC Output Current .....                                                  | 20mA            |
| Power Dissipation .....                                                  | 500mW           |

### Note:

Stresses greater than those listed under MAXIMUM RATINGS may cause permanent damage to the device. This is a stress rating only and functional operation of the device at these or any other conditions above those indicated in the operational sections of this specification is not implied. Exposure to absolute maximum rating conditions for extended periods may affect reliability.

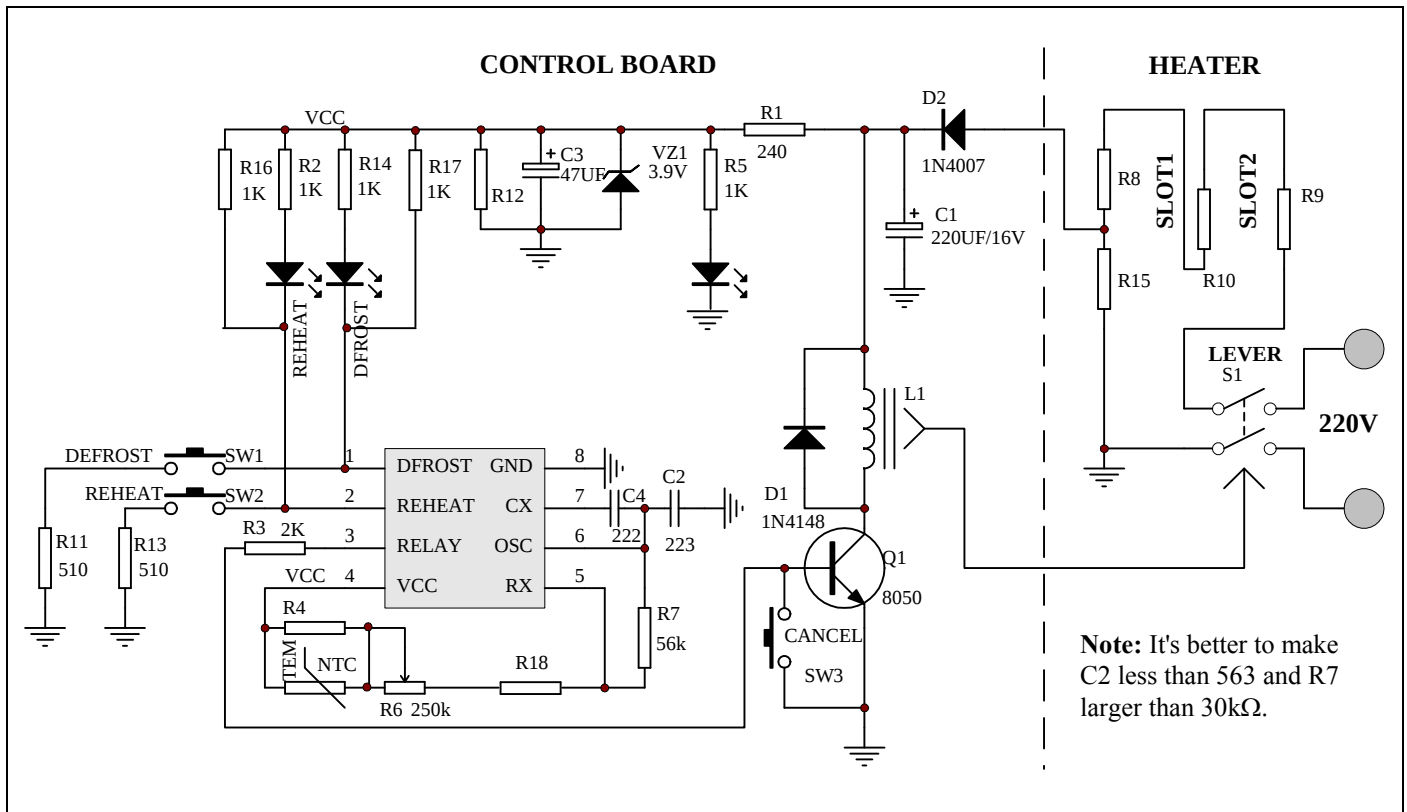
## Recommended operation conditions

| Symbol          | Description           | Min                | Type | Max                 | Unit |
|-----------------|-----------------------|--------------------|------|---------------------|------|
| T <sub>A</sub>  | Operation Temperature | 0                  | 25   | +85                 | °C   |
| V <sub>CC</sub> | Supply voltage        | 3.5                | 4.0  | 5.5                 | V    |
| V <sub>IH</sub> | Input High Voltage    | 0.8V <sub>CC</sub> | -    | 0                   | V    |
| V <sub>IL</sub> | Input Low Voltage     | 0                  | -    | 0.35V <sub>CC</sub> | V    |

## Electrical Characteristics (T<sub>A</sub> = 0 ~ 85 °C, unless otherwise noted)

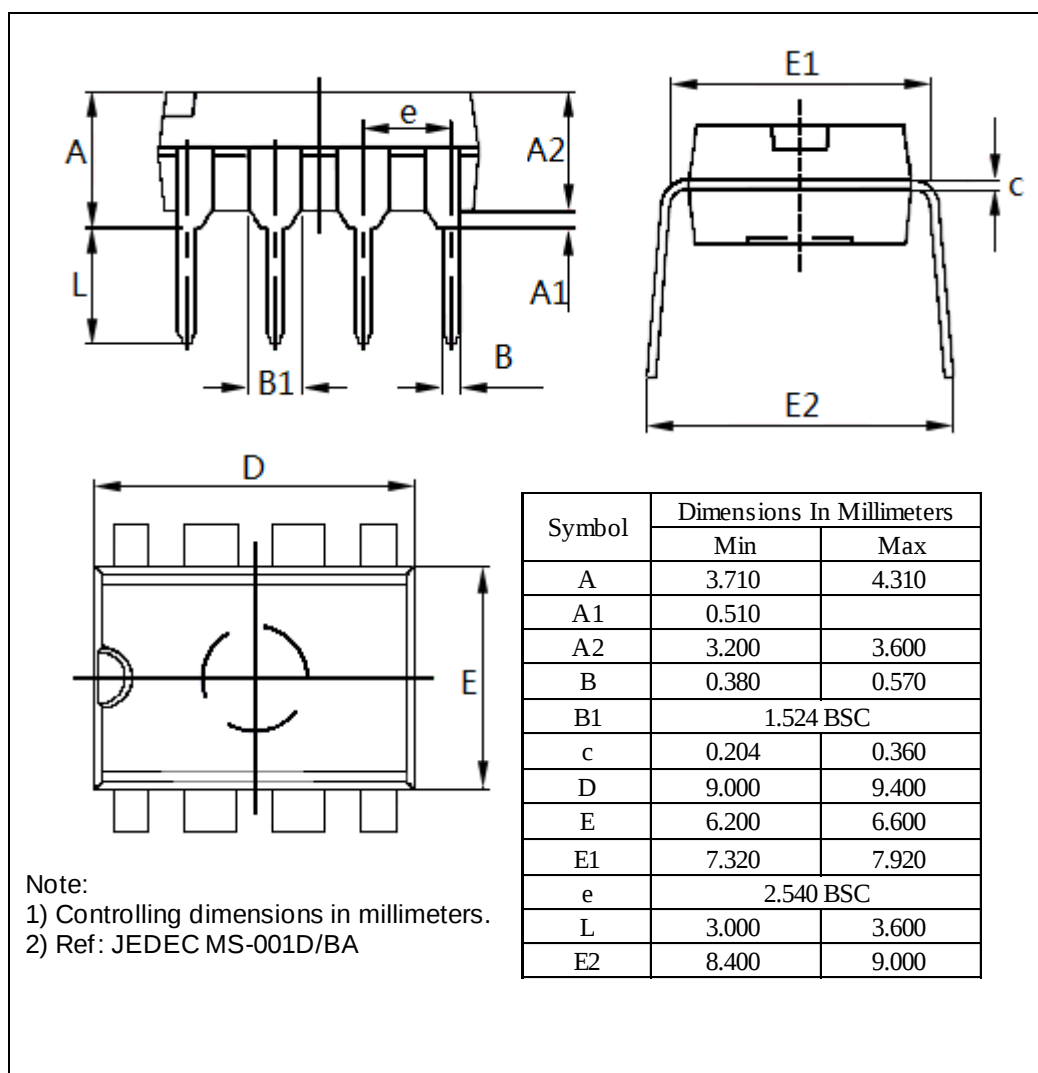
| Symbol          | Description                    | Test Conditions                                              |                                                  | Min  | Type | Max  | Unit |
|-----------------|--------------------------------|--------------------------------------------------------------|--------------------------------------------------|------|------|------|------|
| V <sub>IL</sub> | Input High Voltage             | PIN: DEFROST, REHEAT                                         | V <sub>CC</sub> = 4.0V                           | -    | -    | 2.0  | V    |
| I <sub>OH</sub> | Output Source Current          | PIN: DEFROST, REHEAT                                         | V <sub>CC</sub> = 3.5V<br>V <sub>OH</sub> = 3.0V | -2.0 | -    | -    | mA   |
| I <sub>OL</sub> | Output Sink Current            | PIN: DEFROST, REHEAT                                         | V <sub>CC</sub> = 3.5V<br>V <sub>OL</sub> = 0.5V | 4    | -    | -    | mA   |
| I <sub>OH</sub> | Output Source Current          | PIN: RELAY                                                   | V <sub>CC</sub> = 3.5V<br>V <sub>OH</sub> = 2.0V | -15  | -    | -    | mA   |
| I <sub>OL</sub> | Output Sink Current            | PIN: RELAY                                                   | V <sub>CC</sub> = 3.5V<br>V <sub>OL</sub> = 0.5V | 0.5  | -    | -    | mA   |
| I <sub>IH</sub> | Input High Leakage Current     | -                                                            | V <sub>CC</sub> = 4.0V<br>V <sub>IH</sub> = 3.5V | -    | -    | -1   | μA   |
| I <sub>IL</sub> | Input Low Leakage Current      | -                                                            | V <sub>CC</sub> = 4.0V<br>V <sub>IL</sub> = 0.5V | -    | -    | 1    | μA   |
| OSC             | Frequency of normal oscillator | V <sub>CC</sub> = 4.0V, R1=56kΩ, C1=223                      |                                                  | 952  | 1024 | 1096 | Hz   |
| I <sub>CC</sub> | Power supply Current           | V <sub>CC</sub> = 4.0V, R1=56kΩ, C1=223, all output floating |                                                  | -    | -    | 100  | μA   |

## Application Circuit

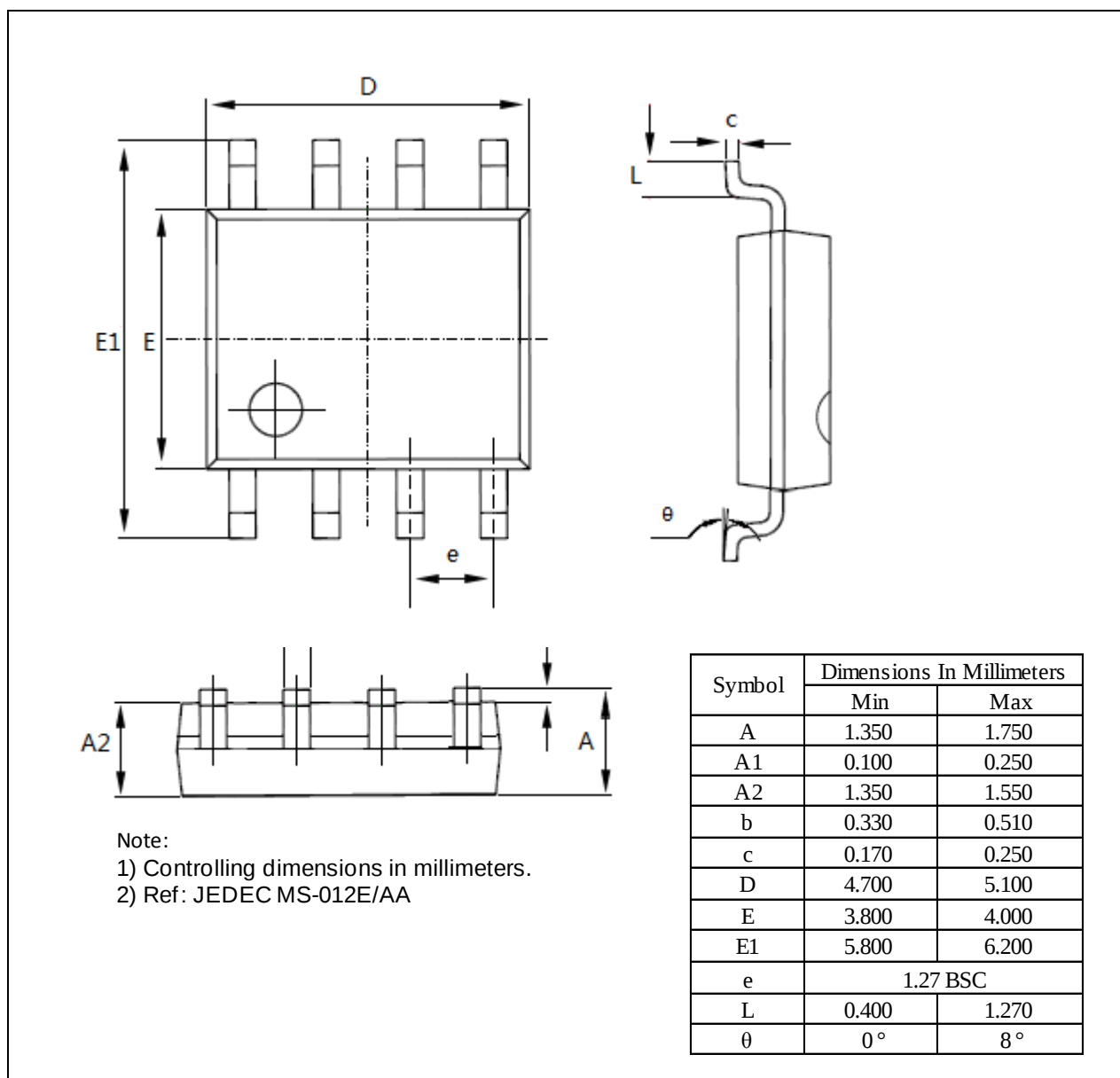


## Mechanical Information

PE (DIP-8)



WE (SOIC-8)



## Ordering Information

| Part No.   | Package Code | Package                        |
|------------|--------------|--------------------------------|
| PT8A2511PE | P            | Lead free 8-pin DIP            |
| PT8A2511WE | W            | Lead free and Green 8-pin SOIC |

### Note:

- E = Pb-free or Pb-free and Green
- Adding X Suffix= Tape/Reel

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