A Product Line of Diodes Incorporated

PT8A2511

Toaster Controller

Features

- Defrost mode for frozen bread
- Reheat mode
- Operating voltage: 3.5~5.5V
- Few external components
- Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)
- Halogen and Antimony Free. "Green" Device (Note 3)
- For automotive applications requiring specific change control (i.e. parts qualified to AEC-Q100/101/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please contact us or your local Diodes representative.
  https://www.diodes.com/quality/product-definitions/
- Packaging (Pb-free & Green):
  - 8-DIP (P)

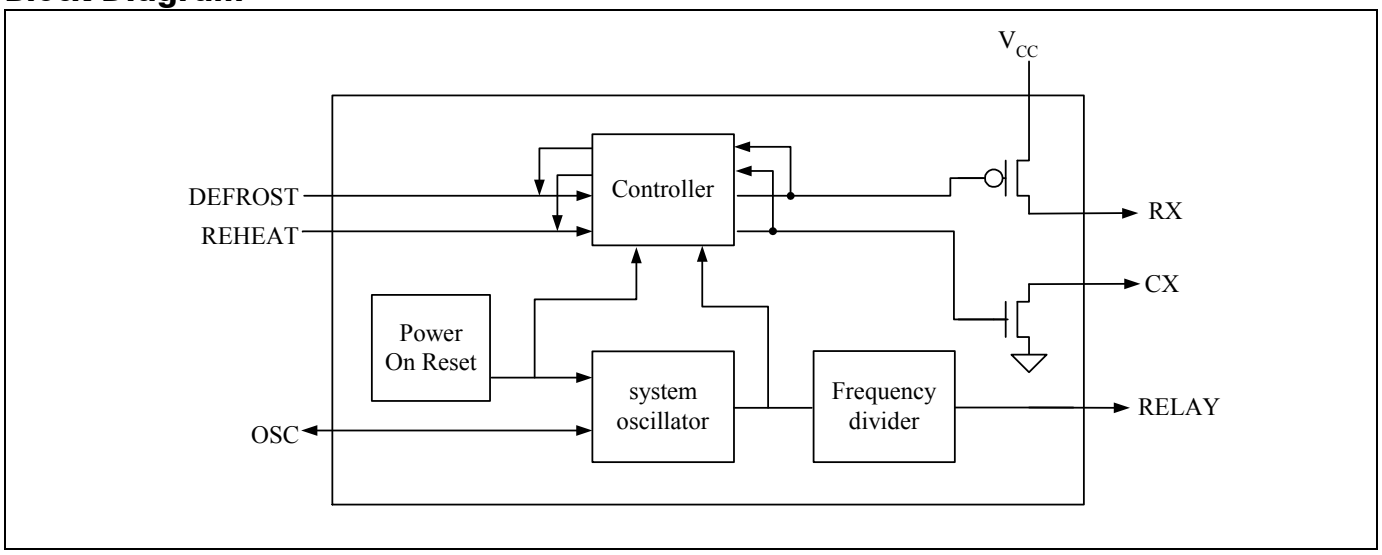
Description

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

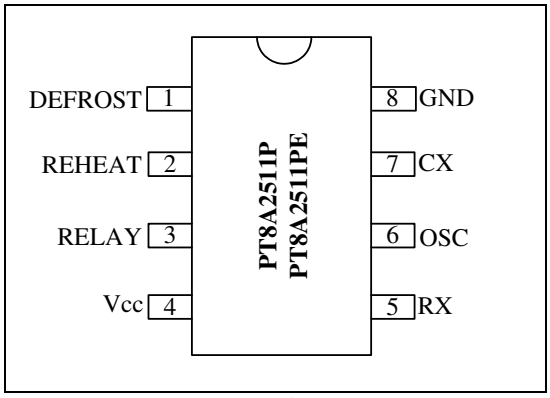
- Toaster

Block Diagram



Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant.
2. See https://www.diodes.com/quality/lead-free/ for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

Pin Configuration



(Top View)

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

Maximum Ratings

Storage Temperature ..... -40°C to +125°C
Supply Voltage to Ground Potential (Inputs & VCC Only)..... -0.5 to +6.5V
Supply Voltage to Ground Potential (Outputs & D/O Only) ..... -0.5 to +6.5V
DC Input Voltage..... -0.5 to +6.5V
DC Output Current 20mA
Power Dissipation 500mW
Junction Temperature .....125°C max

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.

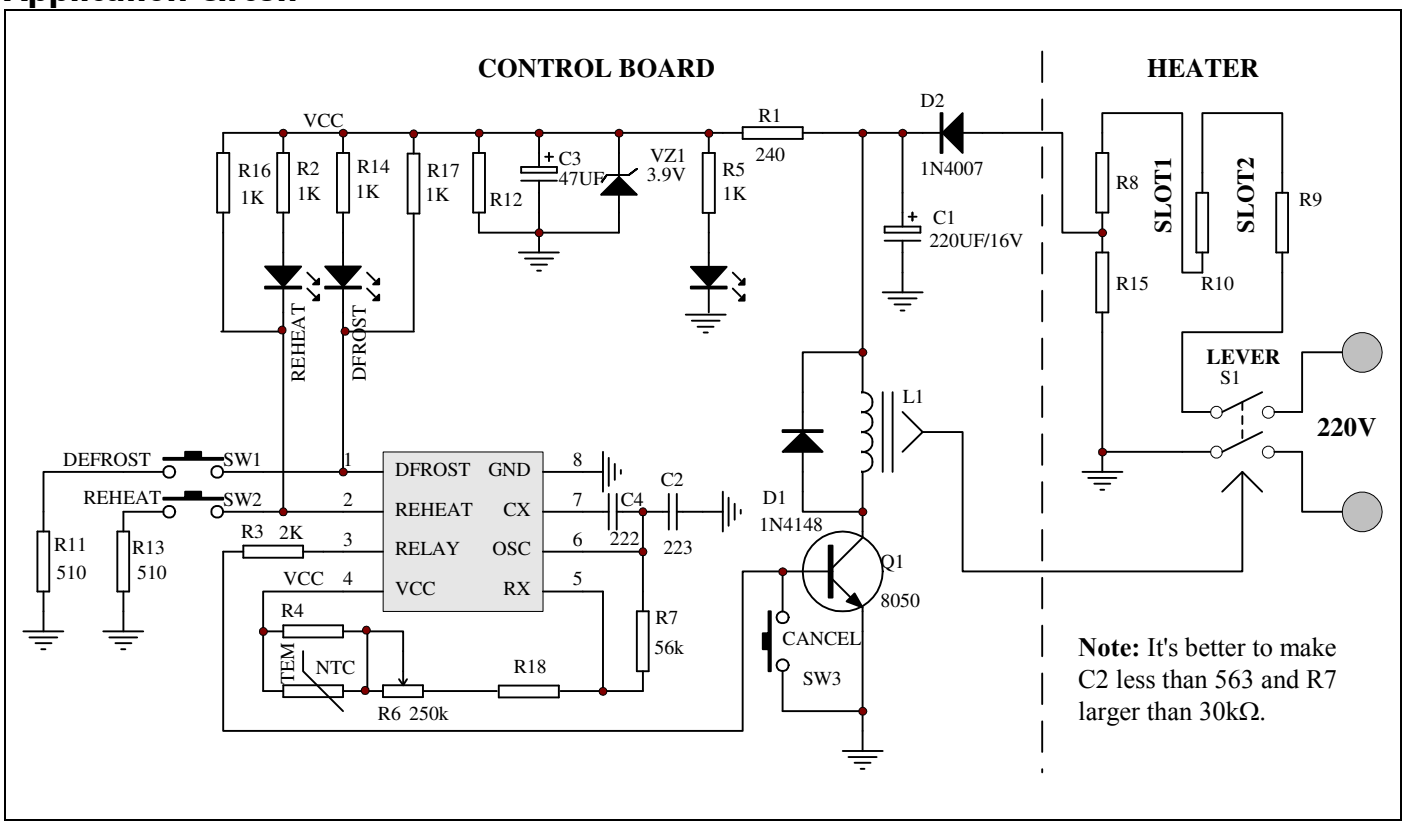
Recommended Operation Conditions

Symbol	Description	Min	Type	Max	Unit
T_A	Operation Temperature	0	25	+85	℃
V_{CC}	Supply voltage	3.5	4.0	5.5	V
V_{IH}	Input High Voltage	$0.8V_{CC}$	-	0	V
V_{IL}	Input Low Voltage	0	-	$0.35V_{CC}$	V

Electrical Characteristics (T_A = 0 ~ 85°C, unless otherwise noted)

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

Application Circuit



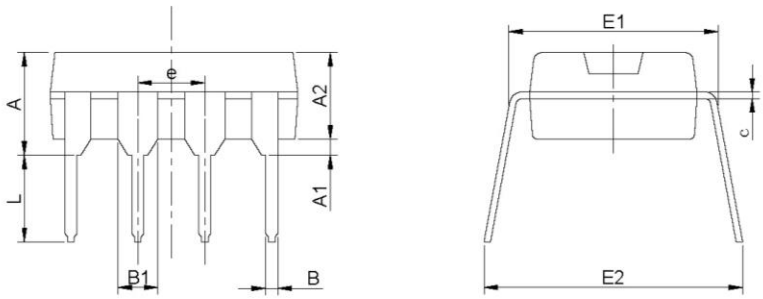
Part Marking

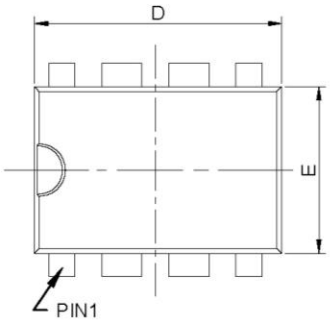
PT8A
2511PE
XYYWWJW

XYYWW: Die Rev/Year and Workweek of mold operation
J: Assembly Site Code
W: Wafer Fab Site Code

Packaging Mechanical

8-DIP- (P)





PKG. DIMENSIONS(MM)		
SYMBOL	Min	Max
A	3.71	4.31
A1	0.51	
A2	3.20	3.60
B	0.38	0.57
B1	1.52 BSC	
c	0.20	0.36
D	9.00	9.40
E	6.20	6.60
E1	7.32	7.92
e	2.54 BSC	
L	3.00	3.60
E2	8.40	9.00

Notes:
1. Refer JEDEC MS-001D/BA

PERICOM Enabling Serial Connectivity — DATE: 06/14/13

DESCRIPTION: 8-Pin, Dual InLine Plastic, DIP

PACKAGE CODE: P (P8)

DOCUMENT CONTROL#: PD-2134 — REVISION: --

13-0173

For latest package info.

please check: http://www.diodes.com/design/support/packaging/pericom-packaging/packaging-mechanicals-and-thermal-characteristics/

Ordering Information

Part Number	Package Code	Package Description
PT8A2511PEX	P	8-pin, Dual InLine Plastic (DIP)

Notes:

1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant.
2. See https://www.diodes.com/quality/lead-free/ for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
4. E = Pb-free and Green
5. X suffix = Tape/Reel

IMPORTANT NOTICE

1. DIODES INCORPORATED AND ITS SUBSIDIARIES ("DIODES") MAKE NO WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, WITH REGARDS TO ANY INFORMATION CONTAINED IN THIS DOCUMENT, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT OF THIRD PARTY INTELLECTUAL PROPERTY RIGHTS (AND THEIR EQUIVALENTS UNDER THE LAWS OF ANY JURISDICTION).

2. The Information contained herein is for informational purpose only and is provided only to illustrate the operation of Diodes products described herein and application examples. Diodes does not assume any liability arising out of the application or use of this document or any product described herein. This document is intended for skilled and technically trained engineering customers and users who design with Diodes products. Diodes products may be used to facilitate safety-related applications; however, in all instances customers and users are responsible for (a) selecting the appropriate Diodes products for their applications, (b) evaluating the suitability of the Diodes products for their intended applications, (c) ensuring their applications, which incorporate Diodes products, comply the applicable legal and regulatory requirements as well as safety and functional-safety related standards, and (d) ensuring they design with appropriate safeguards (including testing, validation, quality control techniques, redundancy, malfunction prevention, and appropriate treatment for aging degradation) to minimize the risks associated with their applications.

3. Diodes assumes no liability for any application-related information, support, assistance or feedback that may be provided by Diodes from time to time. Any customer or user of this document or products described herein will assume all risks and liabilities associated with such use, and will hold Diodes and all companies whose products are represented herein or on Diodes' websites, harmless against all damages and liabilities.

4. Products described herein may be covered by one or more United States, international or foreign patents and pending patent applications. Product names and markings noted herein may also be covered by one or more United States, international or foreign trademarks and trademark applications. Diodes does not convey any license under any of its intellectual property rights or the rights of any third parties (including third parties whose products and services may be described in this document or on Diodes' website) under this document.

5. Diodes products are provided subject to Diodes' Standard Terms and Conditions of Sale (https://www.diodes.com/about/company/terms-and-conditions/terms-and-conditions-of-sales/) or other applicable terms. This document does not alter or expand the applicable warranties provided by Diodes. Diodes does not warrant or accept any liability whatsoever in respect of any products purchased through unauthorized sales channel.

6. Diodes products and technology may not be used for or incorporated into any products or systems whose manufacture, use or sale is prohibited under any applicable laws and regulations. Should customers or users use Diodes products in contravention of any applicable laws or regulations, or for any unintended or unauthorized application, customers and users will (a) be solely responsible for any damages, losses or penalties arising in connection therewith or as a result thereof, and (b) indemnify and hold Diodes and its representatives and agents harmless against any and all claims, damages, expenses, and attorney fees arising out of, directly or indirectly, any claim relating to any noncompliance with the applicable laws and regulations, as well as any unintended or unauthorized application.

7. While efforts have been made to ensure the information contained in this document is accurate, complete and current, it may contain technical inaccuracies, omissions and typographical errors. Diodes does not warrant that information contained in this document is error-free and Diodes is under no obligation to update or otherwise correct this information. Notwithstanding the foregoing, Diodes reserves the right to make modifications, enhancements, improvements, corrections or other changes without further notice to this document and any product described herein. This document is written in English but may be translated into multiple languages for reference. Only the English version of this document is the final and determinative format released by Diodes.

8. Any unauthorized copying, modification, distribution, transmission, display or other use of this document (or any portion hereof) is prohibited. Diodes assumes no responsibility for any losses incurred by the customers or users or any third parties arising from any such unauthorized use.

www.diodes.com