

Ceramic Heating Controller (LCD)

Features

- High watt density Alumina Heaters
- Pulse trigger with high current for SCR
- Quickly Heat-Up and Quickly Lost-Heat Recover
- External adjustable to fit wide range heating plates
- External adjustable to fit TCR of sensors
- Full temperature compensation and insensitive to environment temperature
- Internal zener
- 11 heat temperature settings
- Auto power off for PT8A3351/3/5/7
- Backlights for indicating work status
- LCD screen for showing temperature setting
- Dual Temperature (Fahrenheit/Centigrade) Display
- Wet function: It will keep heating on state to level 2.
- Dual voltage (120V/240V) operations.
- Support 3 keys, on/off, up and down
- SOIC-24, QFN-24 and TSSOP-24 package

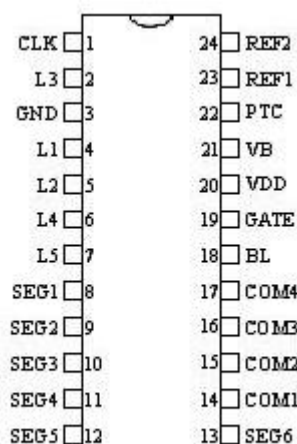
Description

The PT8A335xA/B is special designed for ceramic heating control with 11 temperature levels(show as below function comparison table). It can drive SCR directly and detect heater temperature by heater-self without extra temperature sensor. It has 3 keys for function setting. LCD displays and backlight indicate the working status. Build-in timer will be auto-power off after power on 1 hour for 60Hz or 1.2 hour for 50Hz.

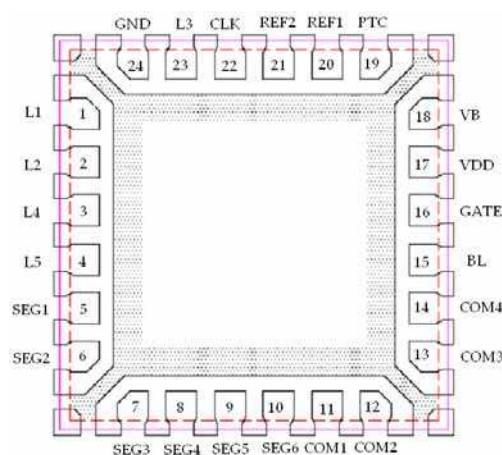
Applications

- Ceramic heating controller

Pin Configuration



SOIC-24/TSSOP-24



QFN-24

Pin Description

Name	Pin No.		Type	Description
	SOIC-24/TSSOP-24	QFN-24		
CLK	1	22	I	Clock input from power line and Detect operation voltage.
L3	2	23	I	Input to adjust Recovery Rate.
L1	4	1	I	Power on/off key inputs
L2	5	2	I	Up and down key inputs.
L4	6	3	I	High: LCD shows °F, Low : LCD shows °C.
L5	7	4	I	Supply LCD power.
SEG1,SEG2, SEG3,SEG4, SEG5,SEG6,	8,9,10,11,12,13	5,6,7,8,9,10	O	LCD digits control output.
COM1,COM 2, COM3,COM 4	14,15,16,17	11,12,13,14	O	LCD digits control output.
BL	18	15	O	Drive LCD backlight
GATE	19	16	O	SCR trigger output, active high
VB	21	18	O	PTC sampling power source
PTC	22	19	I	Temperature sensor input
REF1	23	20	I	Reference 1 for internal comparator
REF2	24	21	O	Reference 2 for internal comparator
GND	3	24	Power	Ground and Power
VDD	20	17		

The block diagram illustrates the internal architecture of the L30000 system, enclosed in a large rectangular frame. The system is powered by a CLK signal at the top. Key components and their interconnections are as follows:

- Power and Reset:** A POR (Power-On Reset) block receives a rst signal and provides a 50Hz signal to the Line Clk Sample block. The Line Clk Sample block outputs a 50Hz signal to the OSC (Oscillator) block.
- Oscillator and Timing:** The OSC block outputs an 80kHz signal to the Recover ADJ block and a stop signal to the Timing block. The Timing block receives a stop signal from the OSC and provides a stop signal to the KEY IN block.
- Control and Timing:** The Timing block outputs a stop signal to the KEY IN block and a stop signal to the LCD Driver block. The Timing block also outputs a stop signal to the CTRL block.
- Res Chain and CTRL:** The Res Chain block receives VB, REF1, and REF2 signals. It outputs a vbo signal to the CTRL block and a ptc signal to the CMP R1 block. The CTRL block outputs a LEVEL signal to the Level Set block and a LEVEL signal to the LCD Driver block.
- Level Set and KEY IN:** The Level Set block receives a LEVEL signal from the CTRL block and outputs a LEVEL signal to the KEY IN block. The KEY IN block outputs a BL signal and L1 (Up/Dn) and L2 (On/Off) signals.
- LCD Driver:** The LCD Driver block receives a LEVEL signal from the CTRL block and a LEVEL signal from the Level Set block. It outputs a Vlcd signal to the LCD Driver block and provides signals to the COM1, COM2, COM3, COM4, SEG1, SEG2, SEG3, SEG4, SEG5, and SEG6 outputs.
- Test and TIMER:** The Test block receives test1 through test6 signals and outputs a test signal to the TIMER block. The TIMER block outputs a Timer_rst signal to the CTRL block.
- Other Signals:** The PTC signal is connected to the CMP R1 block. The F_C select signal is connected to the LCD Driver block.

Storage Temperature	-55°C to +150°C
Ambient Temperature with Power applied.....	-20°C to +85°C
Supply Voltage to Ground Potential (Input & V _{DD} Only)	-0.5V to +6.5V
Supply Voltage to Ground Potential (Output s Only)	-0.5V to +6.5V
DC Input Voltage	-0.5V to +6.5V
Input/Output Current	50mA
Input/Output Current (Pin VDD, VB only).....	200mA
Power Dissipation	500mW

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.

Sym	Parameter	Pin	Min	Typ	Max	Unit
V _{DD}	Operating Voltage	VDD	4.0	-	V _Z	V
T _A	Operating temperature	-	-20	-	85	°C