

SMTmax QK854ESD Infrared Preheater



User Manual

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: Means Caution or Warning



: Means Electronic Shock

Caution

1. Before operation, make sure the input voltage of unit is accord to the power supply.
2. Put the unit on a safe working-desk, with a fireproof and heat resistant rubber pad.
3. When use the unit, keep it away from the flammable substance, such as alcohol, plastic, paper, wood.
4. The unit is operated with high temperature, so keep it safe and away from the children.
5. Operate with care, avoid scald, wear gloves and use heat resistant equipment to deal with PCB.
6. Replace the heat element assembly, examine and repair the unit the after the heat element assembly is completely cool down.
7. Suitable for unsoldering IC/BGA: Used when preheating is needed to unsolder the parts of PCB, select a temperature according to the character of things, test and write down the record, an then can be applied to practice. [Only can be used for preheating of PCB]
8. Never operate the unit when not familiar with this machine, avoid danger to the operator and damage to the unit.
9. When not in use for long time, please remove the power plug from the unit.



Care about electronic shock

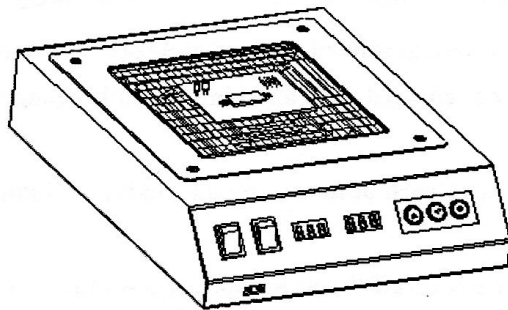
1. Make sure that the power supply is well grounded, and avoid danger of creepage.
2. Make sure that the power line is not covered with anything, avoid breakage of line and getting an electric shock.
3. Make sure the heater not impact with each other and avoid leaking of liquid (such as water, alcohol).
4. When checking or repairing, please turn off the power and remove the power plug of the unit.

I .Specification

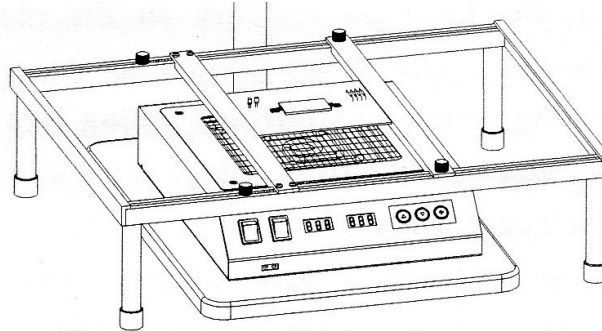
Heating Power:	400W
Plate Area:	130mmx1300mm
Plate Material:	CERAMIC
Temperature Sensor:	K Type Thermocouple
Range of Adjustable Temperature:	50°C ~350°C
Temperature Stability:	±1°C
Temperature Range:	Room Temperature~600°C
Precision:	+/-8°C
Ambient Temperature:	0~40°C
Outer Dimension:	255(W) × 200(L) × 63(H) mm
Weight:	2.5kg

II . Feature

1. Infrared ceramic heater, rapid heating, high efficiency, with a long service life.
2. K type thermocouple temperature control, closed loop with zero Voltage heater switching, digital display, easy to operate.
3. Two switches control power and heating separately. Also read the preheat plate temperature easily under the condition of un-heating.
4. Internal thermometer, convenient to test the temperature of PCB.
5. Put the parts to be preheated on the stainless steel net or fixture of heating window (arranged in addition).



Picture 1



Picture 2

III . Operation


1. Place the preheater and PCB fixture as require.
2. Insert the plug into the socket which aligns with standard.
3. Turn on the power switch.
4. The unit (TEMP) will display the temperature of Pre-heat plate after displaying the set temperature for the 2 seconds.
5. Adjust the button panel if need to change the setting temperature (Ref temperature Adjustment).
6. Turn on the heating switch (WARM Position), the unit begins to heat. It will reach the setting temperature several minutes later.
7. When the temperature is stable, lay the PCB to be heated above the heating window (stainless steel net or fixture).
8. Turn off heating switch once finishing working (COOL Position).
9. Turn off power switch when finishing working, and remove the power plug if the unit is unused for a long time.
10. If use internal thermometer to test temperature (Such as temperature of PCB), connect preheater with K type thermocouple 15 minutes before testing.



Caution:

- **K type thermocouple has the +&- polarity, be careful not to connect oppositely. When testing, if the display figure doesn't increase, please check whether they are connected oppositely.**

- Insert the K type thermocouple till the end, and connect firmly.

 **Warning:**

- Be aware of the high temperature on the plate and surrounding position at work.
- When operating, avoid small article falling into the unit. If so, turn off the power and take it out.

 **Care about electronic shock:**

Avoid leaking of liquid (such as water, alcohol) into the surface of heater, that may lead to damage, electronic shock or a fire.

IV. Comparison of setting temperature and preheating temperature of PCB

NO.	Temperature of Display Window	Test-Temperature of PCB placed on the steel net (10mm away from the heater)	Test-Temperature of PCB placed on the fixture (25mm away from the heater)
1	50°C	43°C	28°C
2	100°C	73°C	55°C
3	150°C	113°C	80°C
4	200°C	158°C	108°C
5	250°C	200°C	145°C
6	300°C	250°C	195°C
7	350°C	298°C	240°C

Note: Tested at 20°C, only for reference. When apply for practice, please test it yourself.

V. Modes of temperature adjustment

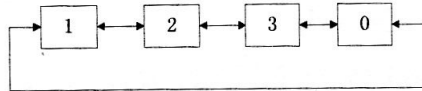
Two modes for setting temperature:

5.1 Regular setting

The heating element is powered off when setting regularly.

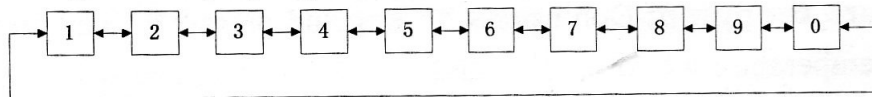
Press “*” key at least one second.

1. First, display the presetting temperature, then the digital position of 100 will flash. It indicates that it has entered into the setting mode of temperature. The digital position of 100 may be adjusted.
2. Choose the needed digital to replace the digital position of 100. Use “▲” or “▼” key to change the display digital. It is shown below.



When the needed digital displays, press the key of “*” at once. The middle digital (digital position of 10) begins to flash, it indicates that the digital position of 10 may be set.

3. Choose the needed digital to replace the digital position of 10. Use “▲” or “▼” key to change the display digital. It is shown below.



Press the key of “*”. The right digital position (digital position of 1) begins to flash. It indicates the digital position of 1 may be set.

4. Choose the needed digital to replace the digital position of 1. Use “▲” or “▼” key to change the display digital. Use the method shown above to choose the digital position of 10. Press the key of “*”.

Here, press the key of “*”

- a) Input the set temperature into inner memory;
- b) Display the set temperature.
- c) Begin to control heating elements.

Notes: if power supply is cut off when setting temperature, the set temperature will not be memorized.

- **If the time of pressing key is less than 1 second, the present set temperature will display 2 seconds. Then display the temperature of Pre-heat plate. When pressing the “*” key, the power supply of heating elements will be out off.**

- When the temperature is over the scope, the digital position of 100 will flash again. If the condition takes place, please input correct temperature value once again.

5.2 Set temperature on – line

In the work, if it is necessary to set temperature quickly and the electricity cannot be cut off, this way may be selected.

Temperature rising: Don't press "*" key and press "▲"key directly. If so, the setting temperature will raise 1°C and the display window will display the set temperature. When loose the "▲"key, the display window will relay the set temperature about 2 seconds. If within 2 seconds If press the "▲"key and not loose at least 1 second, the setting temperature will raise rapidly. Till the needed temperature reaches, then loose the "▲"key.

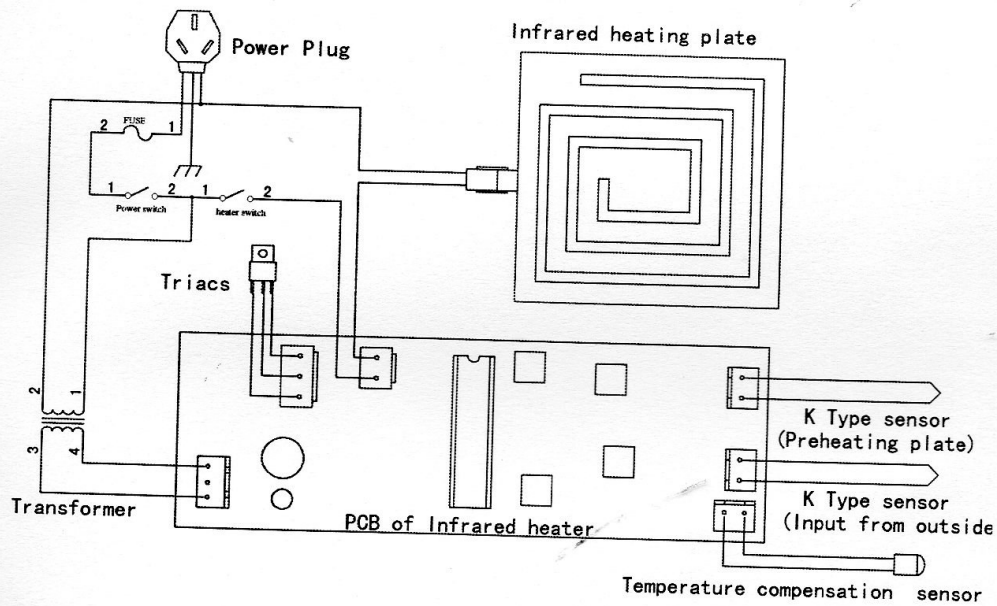
Temperature dropping: Don't press "*"key and press "▼" key directly. If so, the setting temperature will drop 1°C and the display window will display the set temperature. When loose the "▼" key, the display window will relay the set temperature about 2 seconds. If 2 seconds later, press the "▼" key again, the setting temperature will drop 1°C again. If press the "▼" key and not loose at least 1 second, the setting temperature will drop rapidly. Till the needed temperature reaches, then loose the "▼" key.

VI. Symbol explanation

1. Temperature display window shows "---", means: a) Sensor of thermometer is not connected. b) The sensor is disconnected. c) The temperature tested is over 600°C.
2. The temperature display window shows "S - E", means: There is something wrong with the sensor of preheater, and need to check and replace the sensor.
3. When operating, the temperature shows 50°C without increasing, means: There is something wrong with the heater of preheater, and need to check or replace the sensor of heater.

4. Last radix point of temperature display window indicates the heating condition: Light of the point means not reaching the set temperature, if not means exceeding the set temperature, if flashing, means reaching the set temperature.

VII. Internal connection picture



VII. Replaceable parts list

Item No.	Part Name
1	Infrared ceramic heater 400W/230V
2	Infrared ceramic heater 400W/110V
3	Fuse 5A/230V
4	Fuse 10A/110V
5	Controlling PCB
6	Triacs BTA16/600B
7	Rubber pad
8	K type sensor TP-01
9	Big size PCB fixture (Picture 2)