

Tips on attaching thermocouple sensors

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The purpose of thermal profiling

The heat capacity of components affects the solder melting temperatures, so the components of different capacity have different soldering temperatures. As the soldering temperature of the lead-free solders tends to be higher, the temperature of the solder joint should be controlled precisely.

Monitoring the re-melting of solder joint on PCBs



In the case of the Wave soldering process

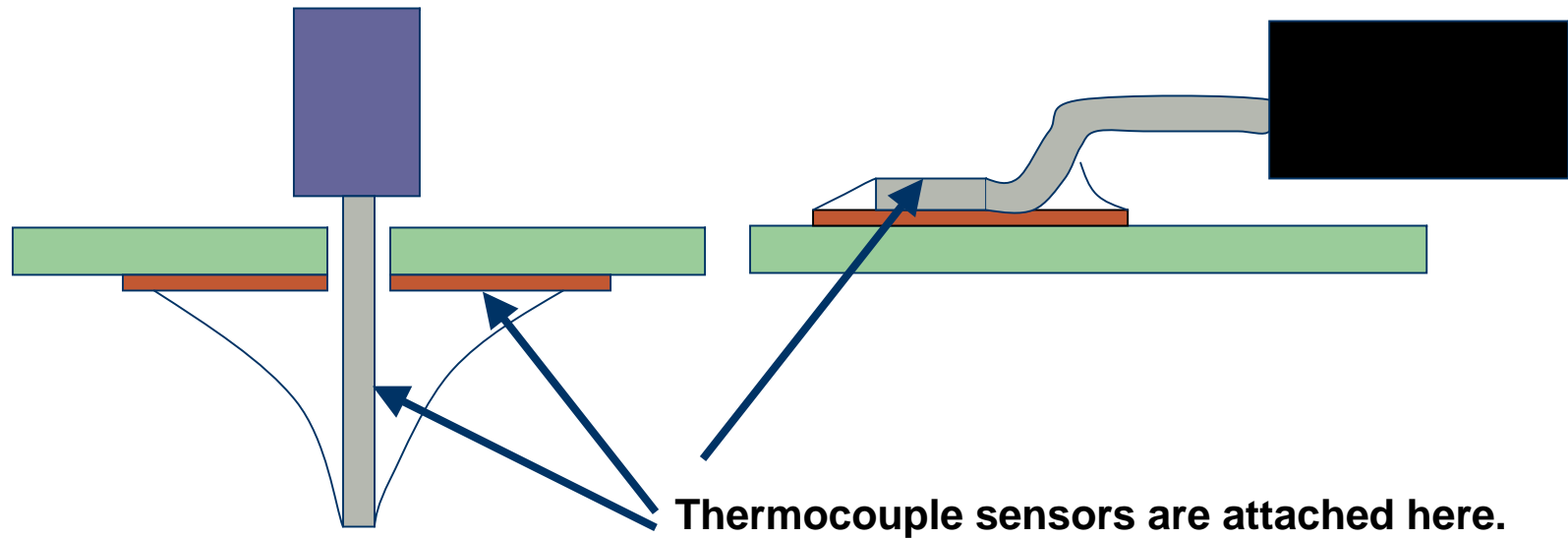


Temperature difference between solder bath and solder melting

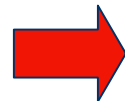
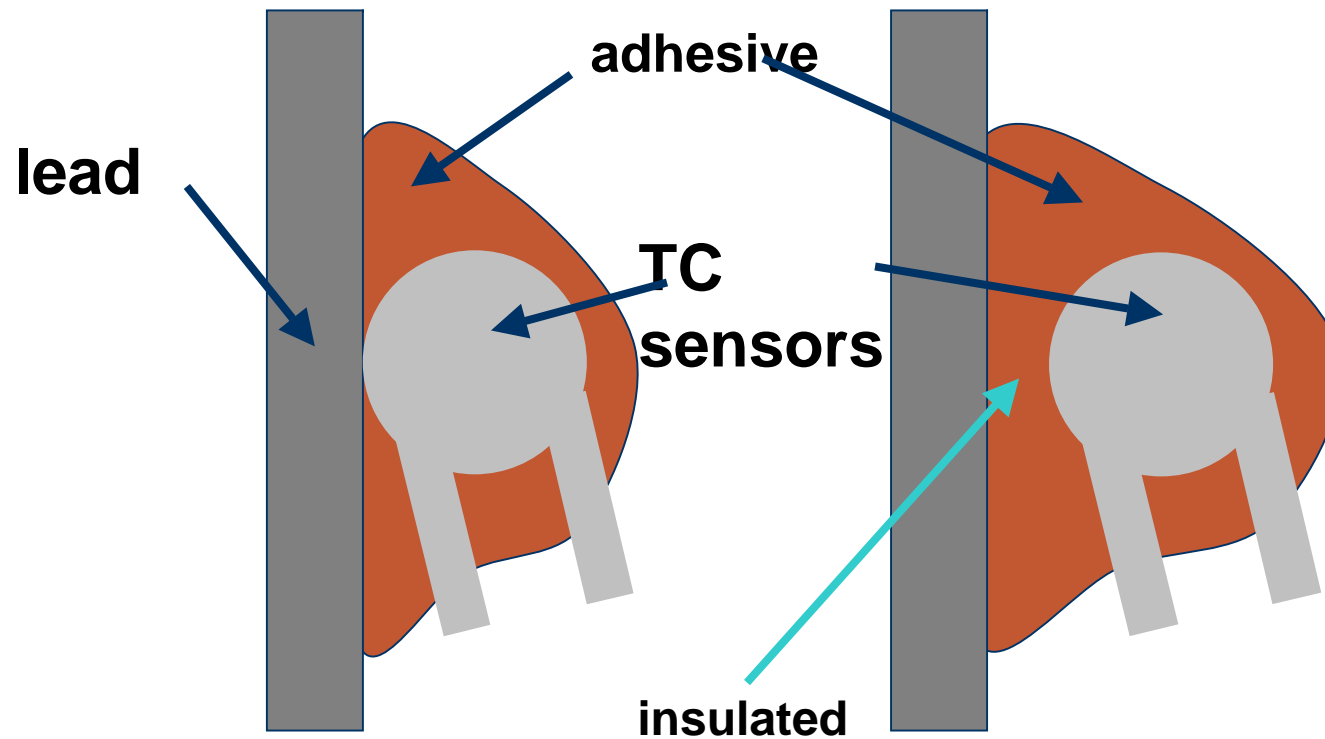
	(Set temperature)	(Melting point)	
Eutectic solder	250	~ 183	= 67
Sn-Ag-Cu Solder	250	~ 217	= 33
Sn-Cu Solder	250	~ 227	= 23

*Narrower temperature window
compared with eutectic solders.*

How to attach thermocouple sensors

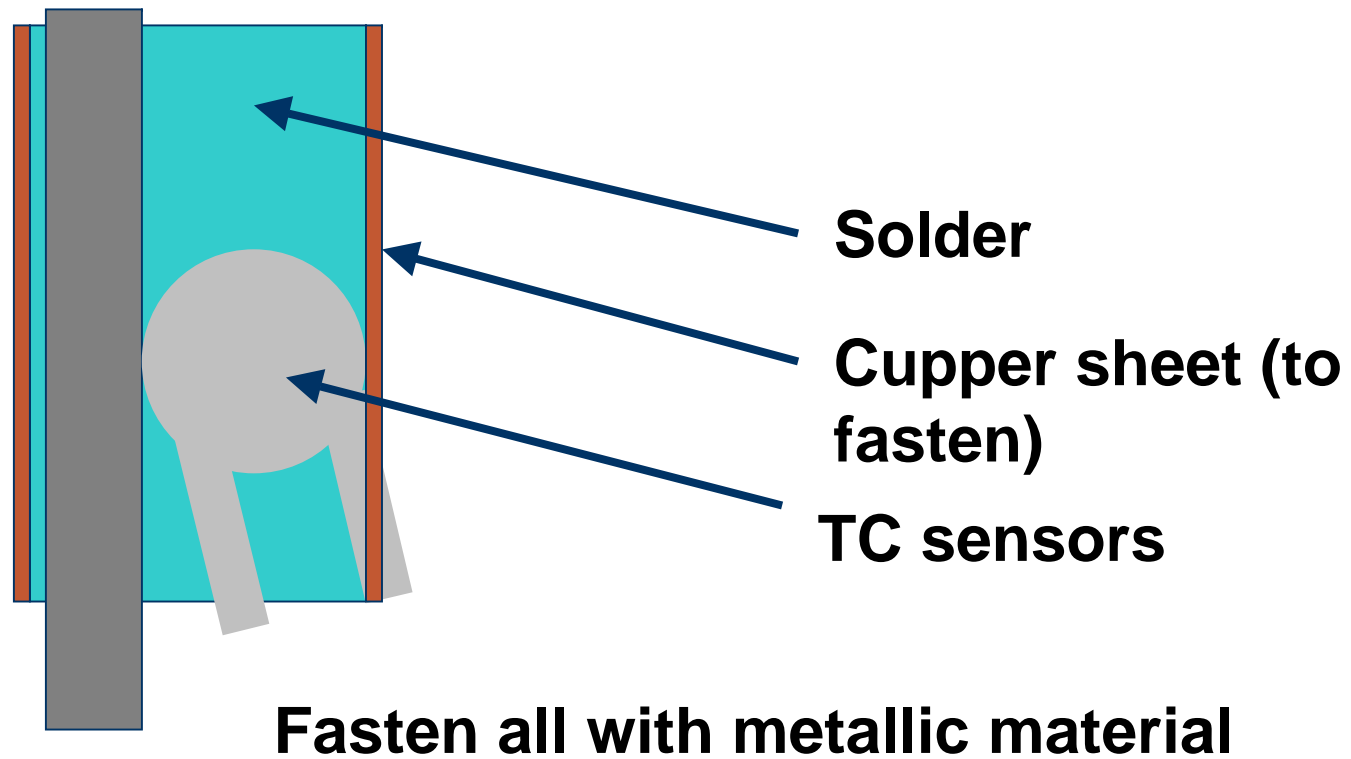


Tips on attaching thermocouple sensors with adhesive

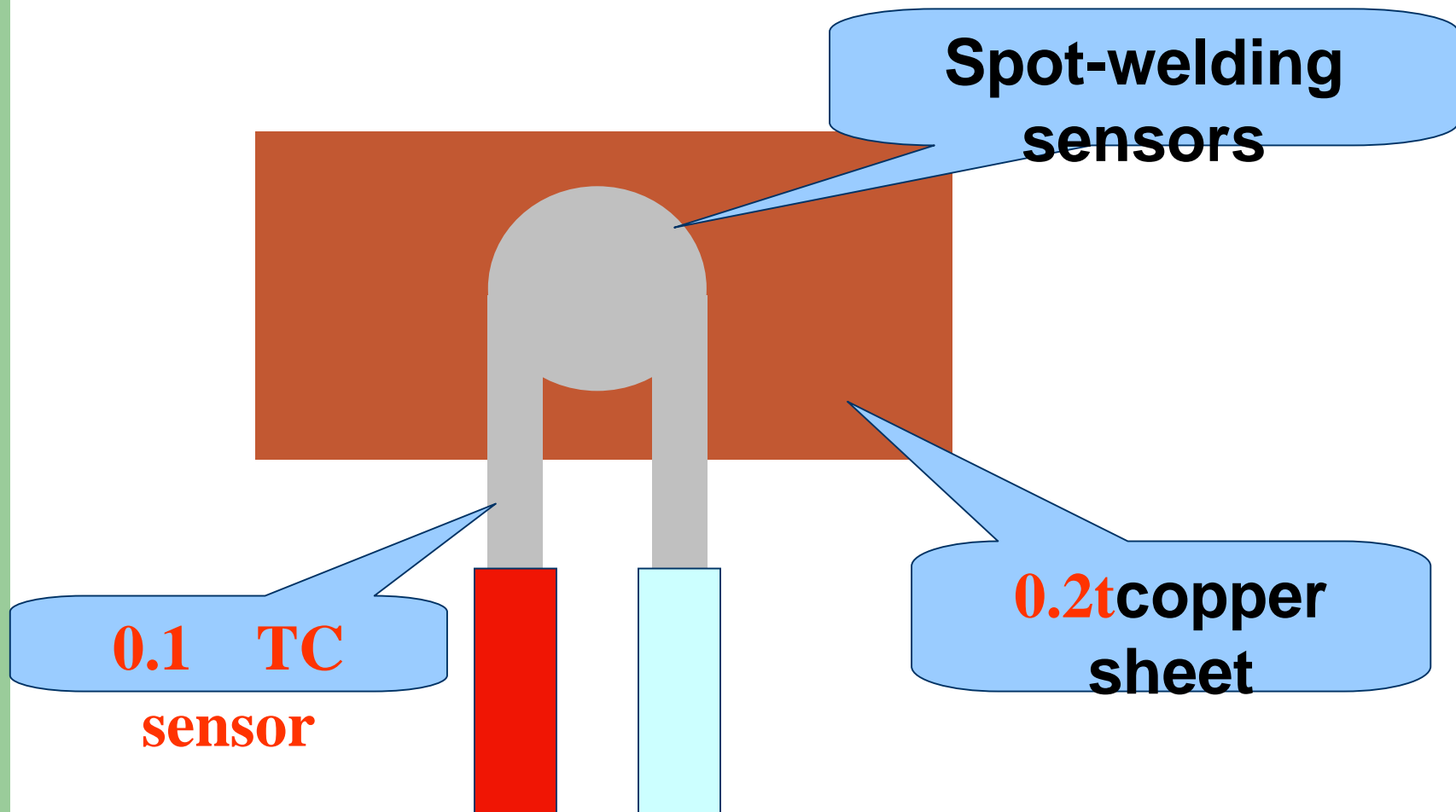


High temperature solder is preferable to adhesive

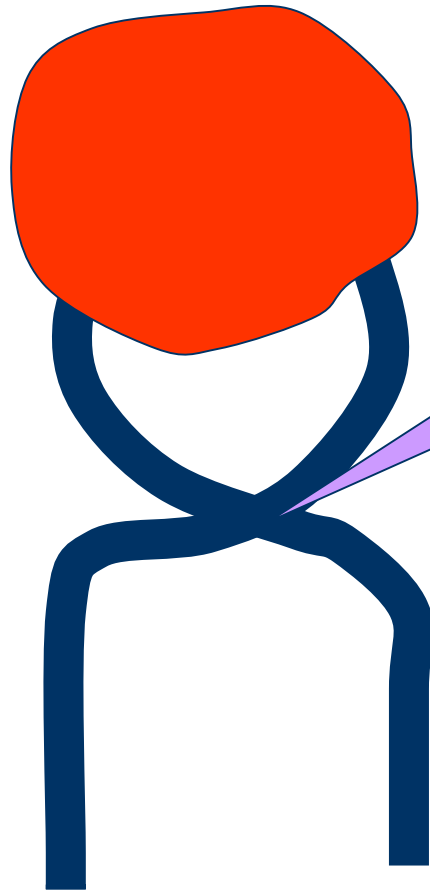
Tips on attaching thermocouple sensors



Usable thermocouple sensors

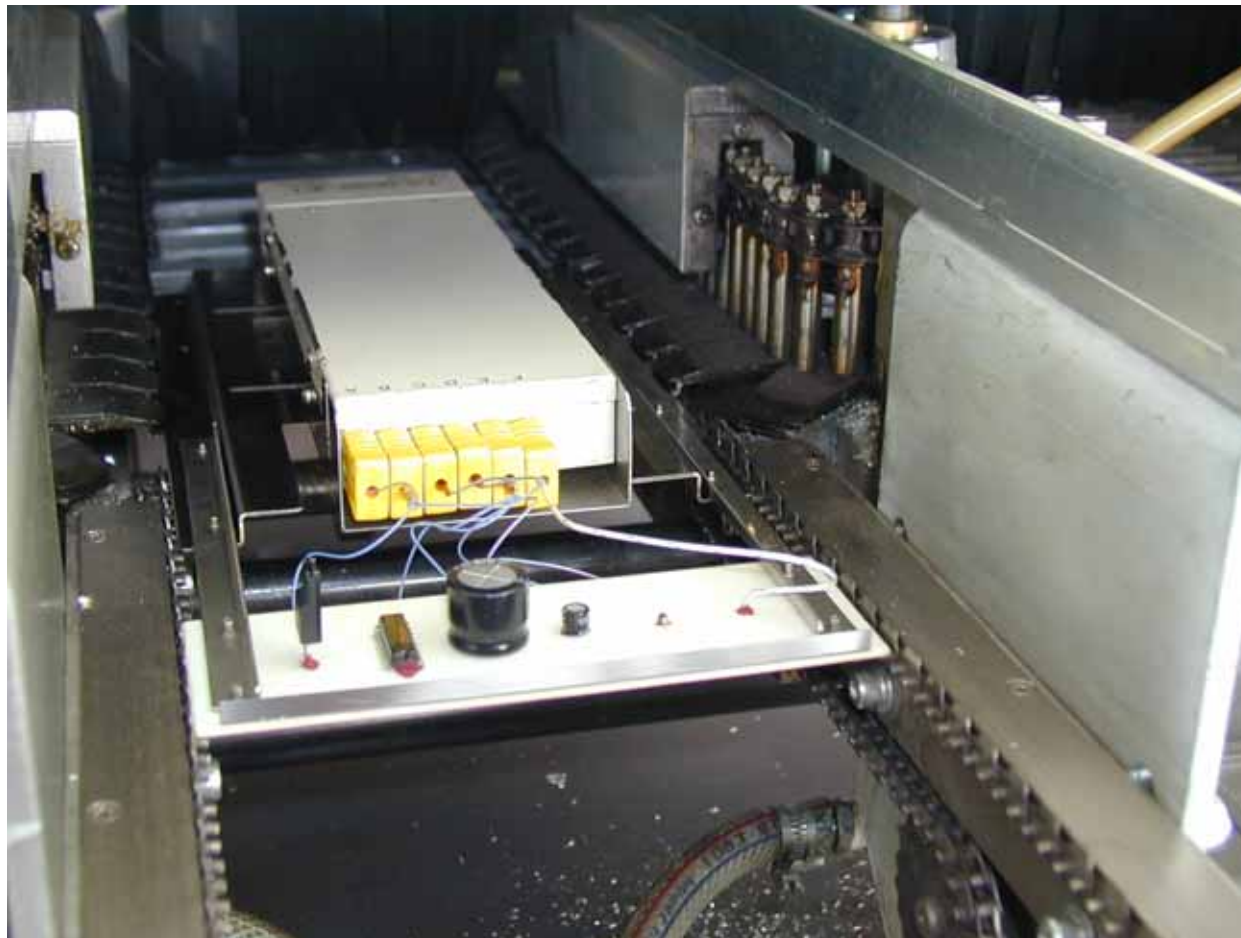


Tips on attaching thermocouple sensors



If conductive here, the spot (shown in red color) cannot be measured properly.

Benchmark PCB



Benchmark PCB

Three-terminal regulator

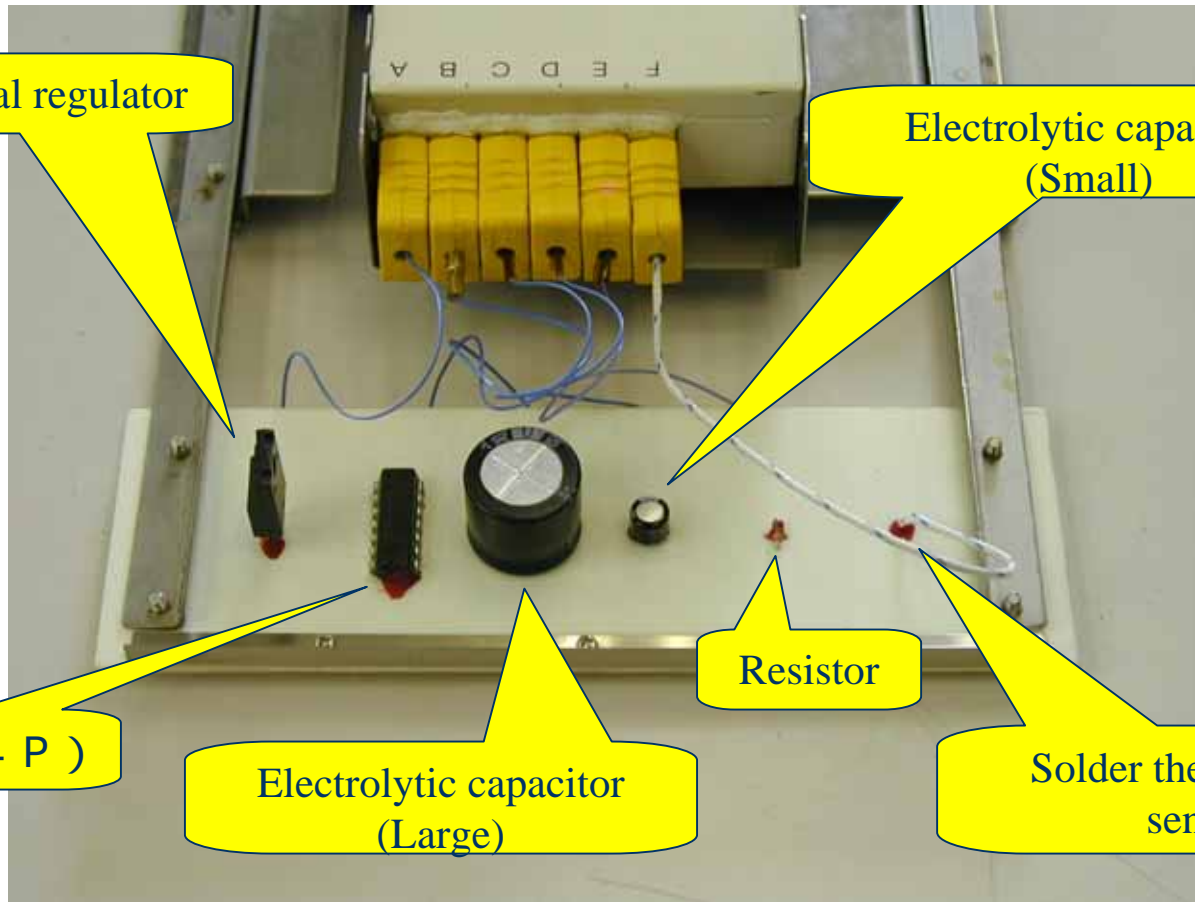
Electrolytic capacitor
(Small)

IC (14P)

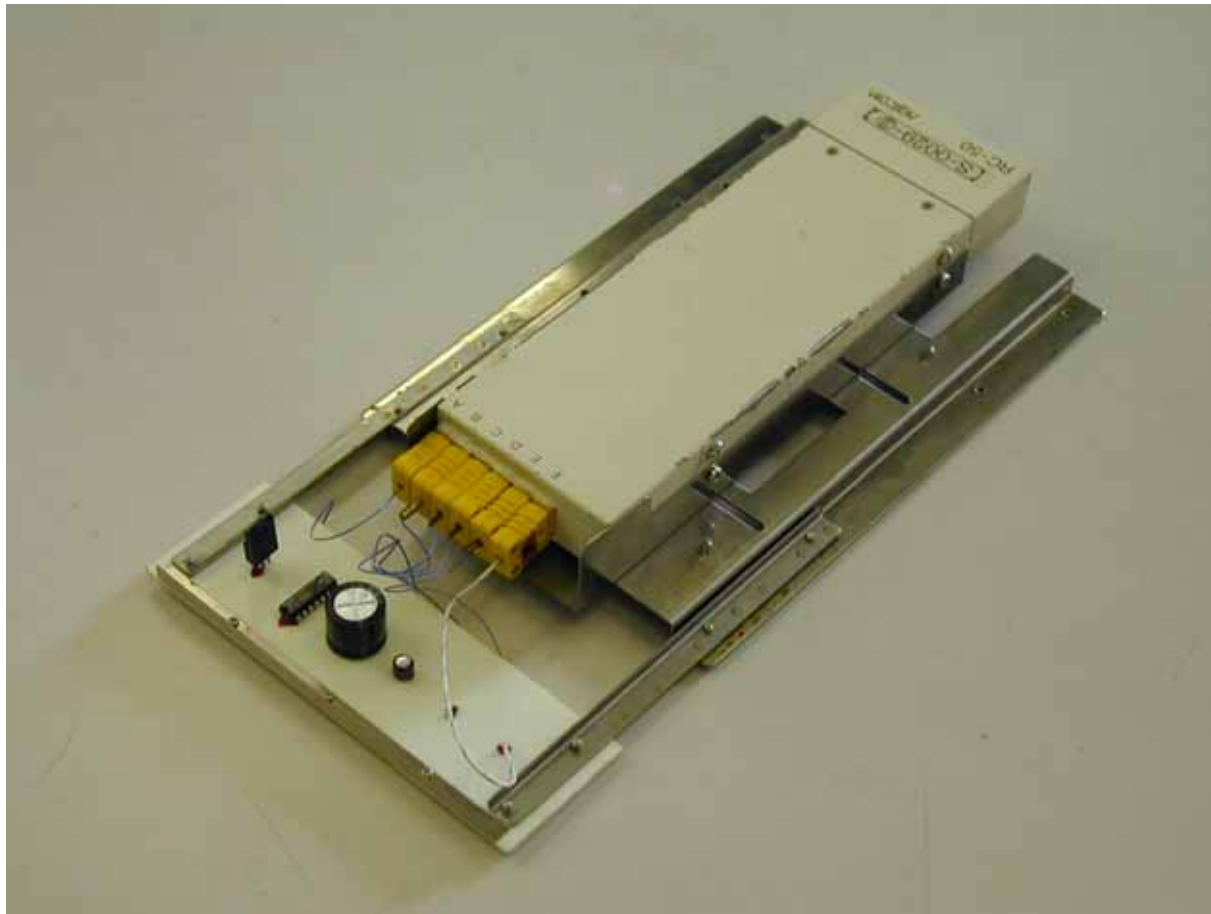
Electrolytic capacitor
(Large)

Resistor

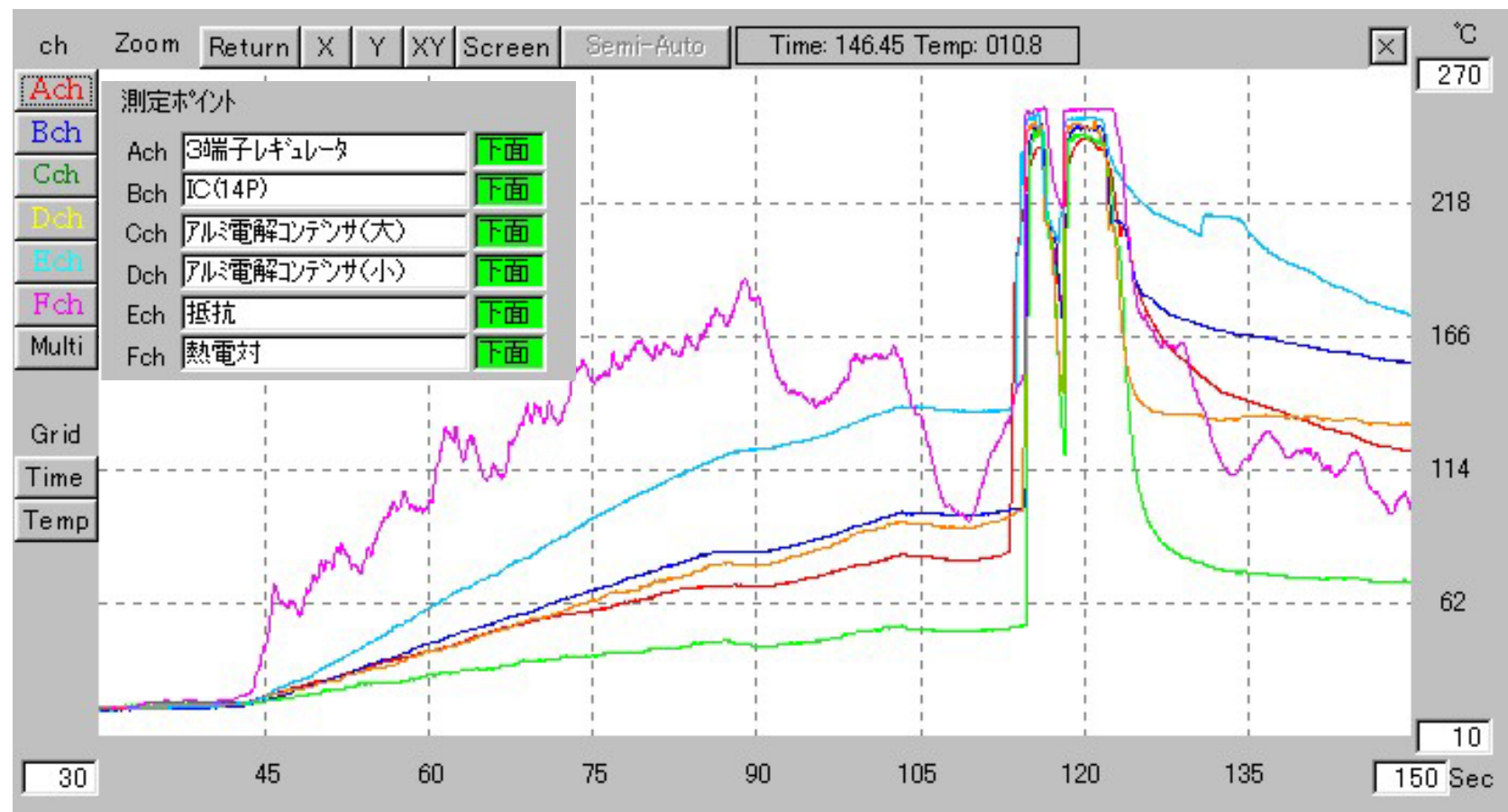
Solder thermometer
sensor



The Benchmark PCB set up onto RC-50



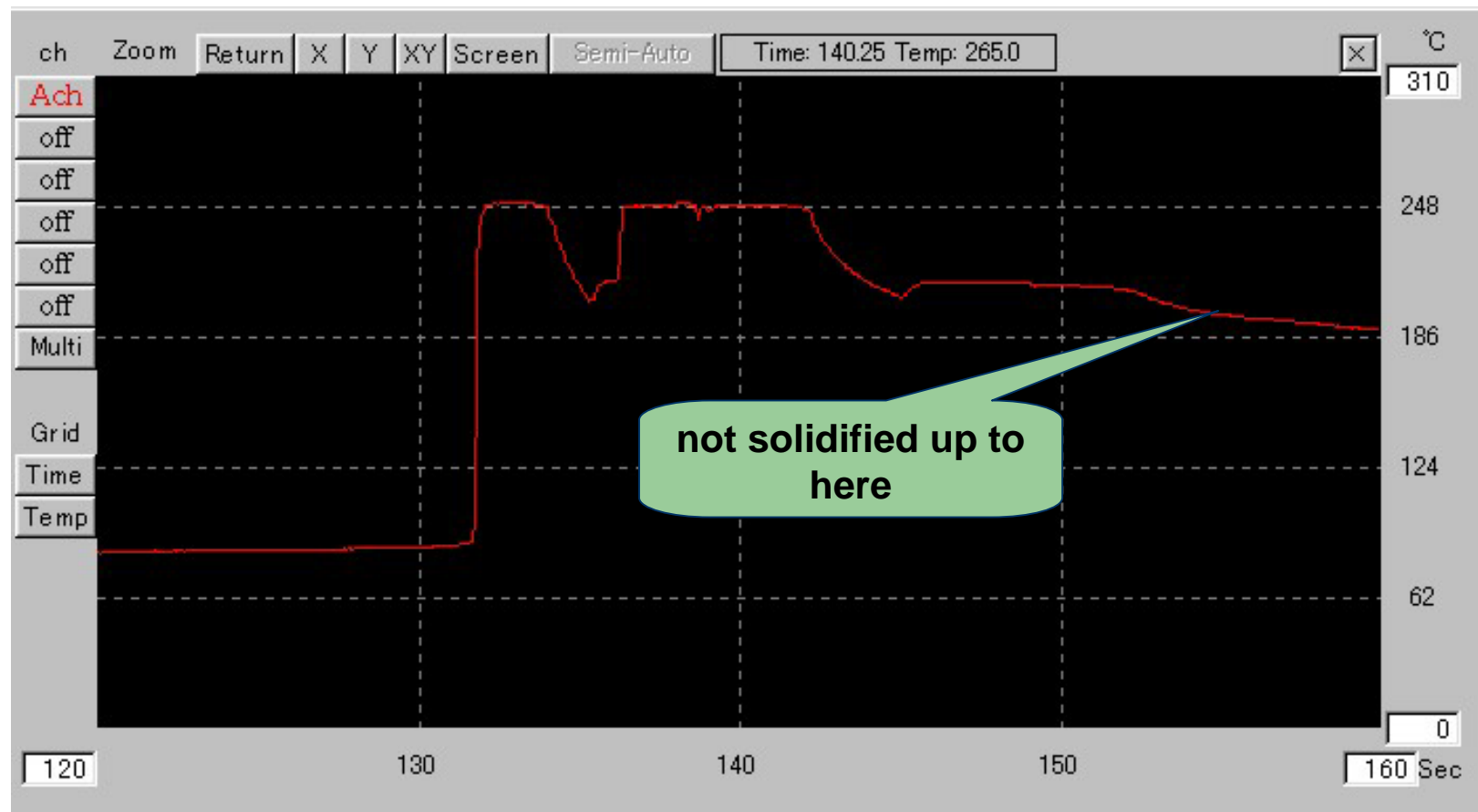
A measurement output with the Benchmark PCB



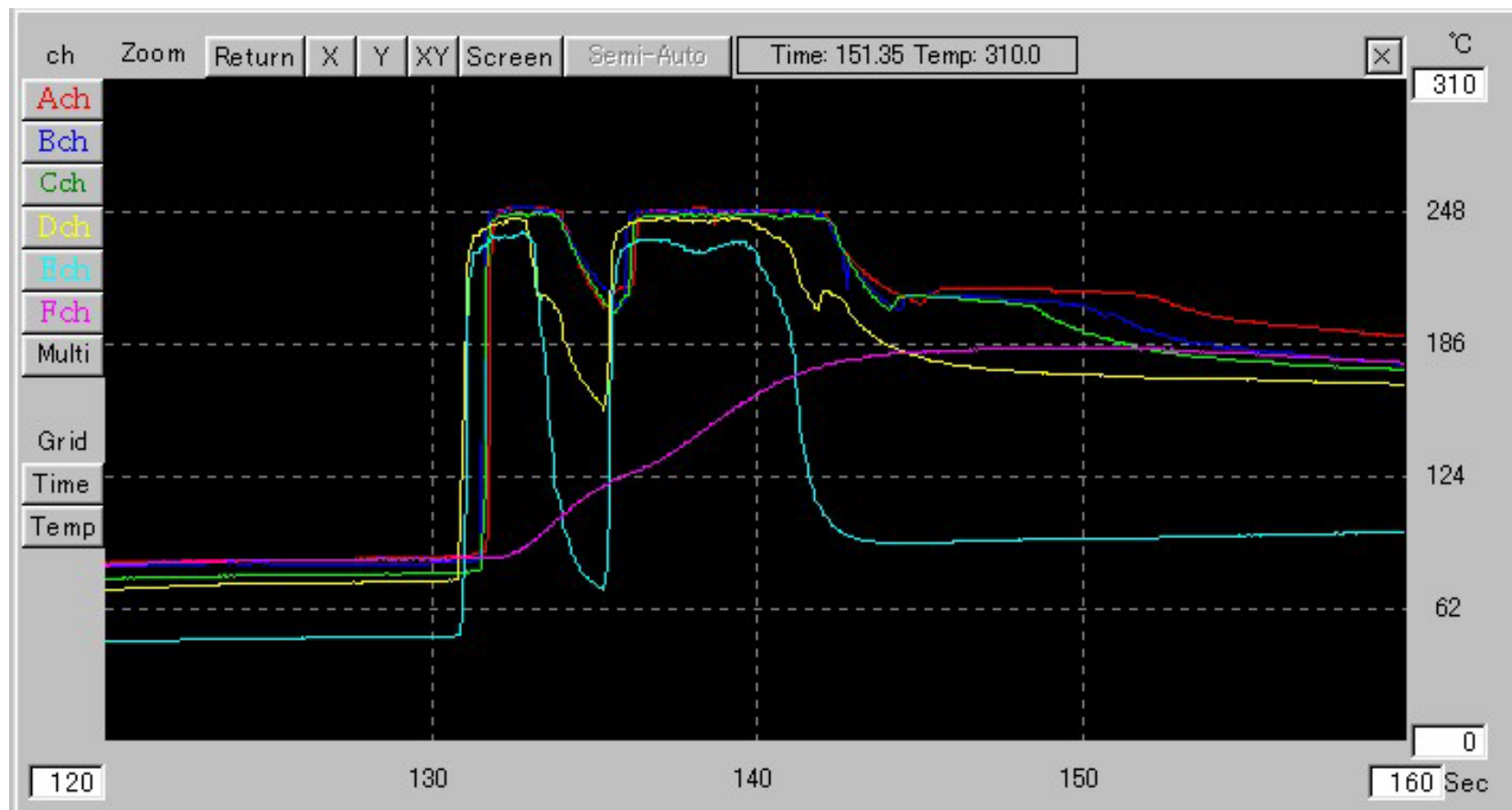
Enlarged Profile data taken as dipped into a Molten solder bath



A data output of the thermal profile measurement with the RC-50 - 1



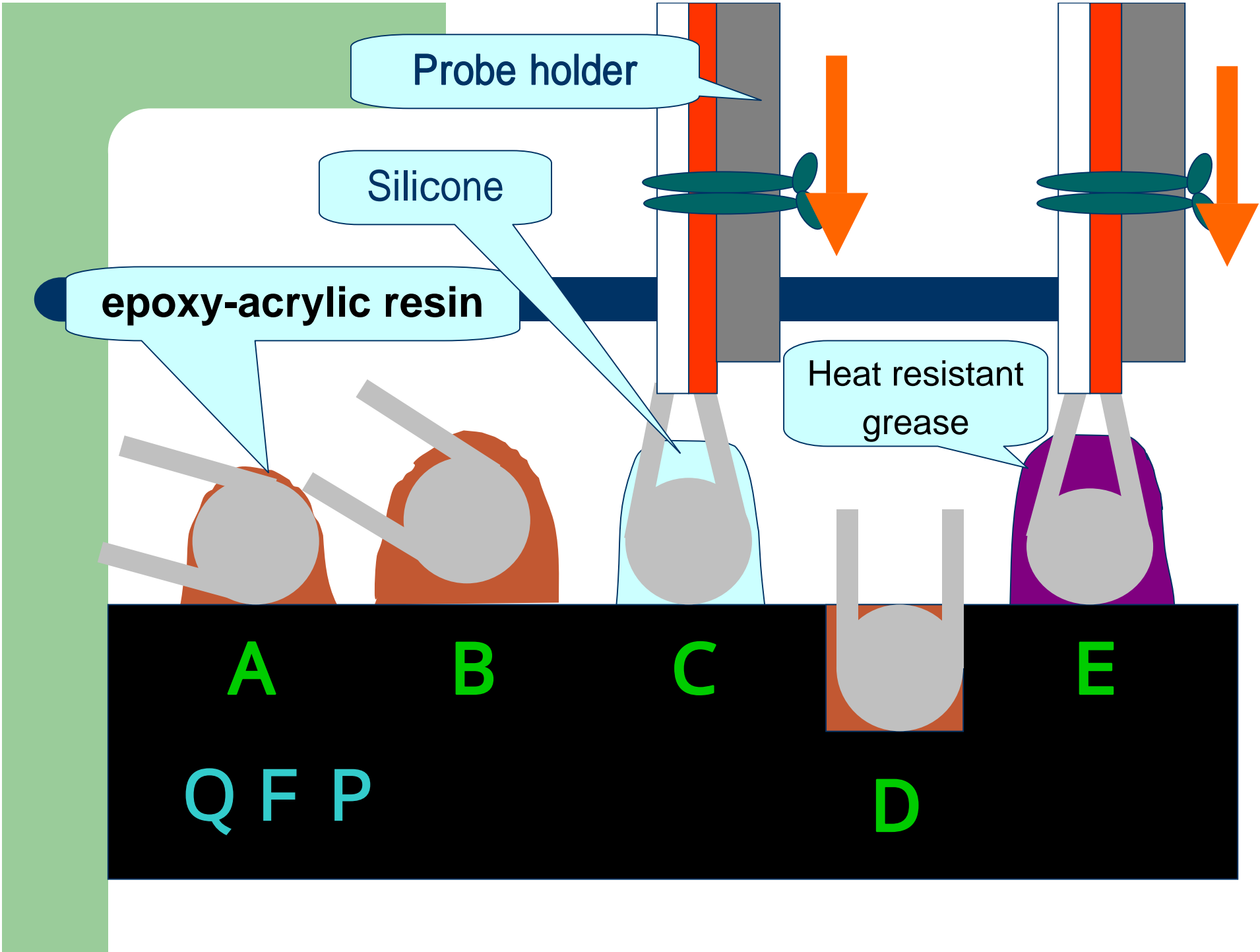
A data output of the thermal profile measurement with the RC-50 - 2



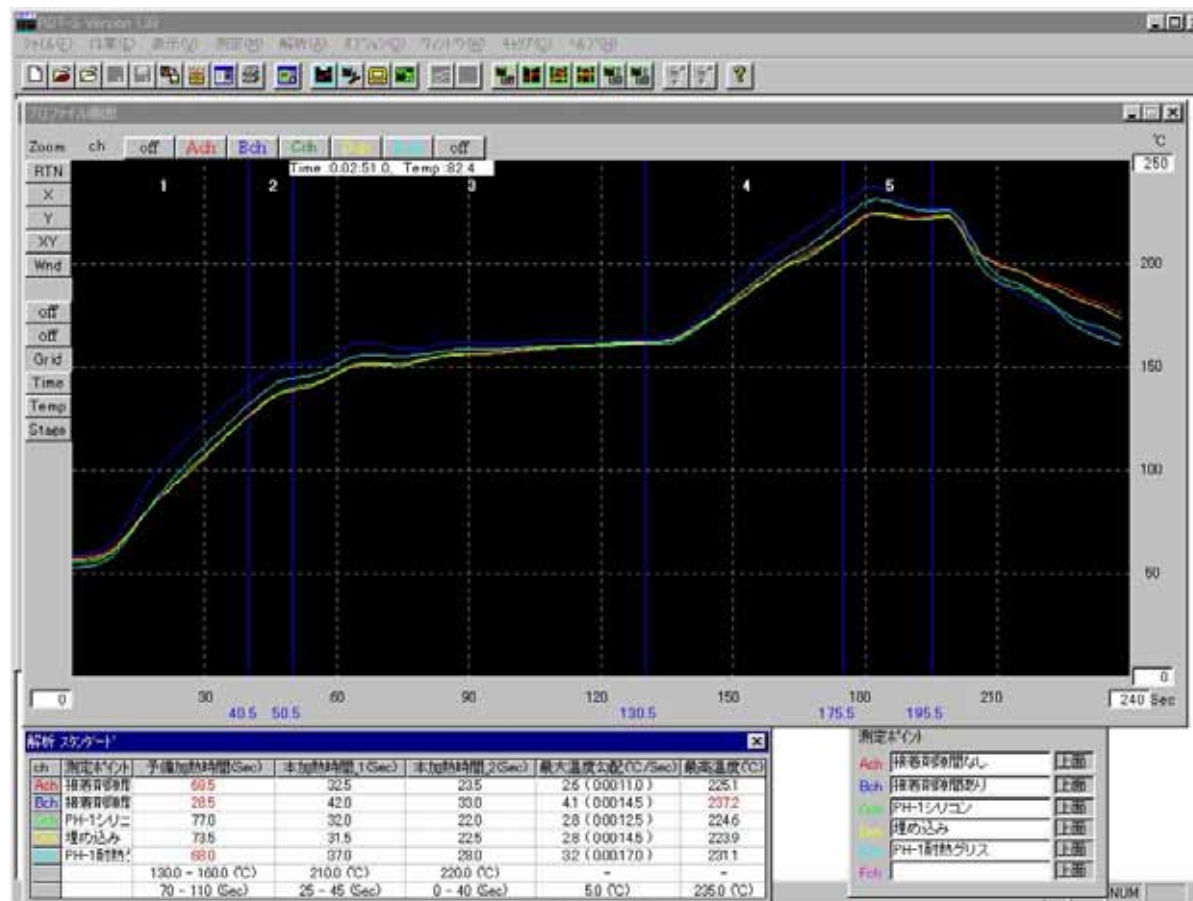


In the case of the Reflow soldering process





A measurement output



Enlarged data output

