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# VFD Repairing Course

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Presented By

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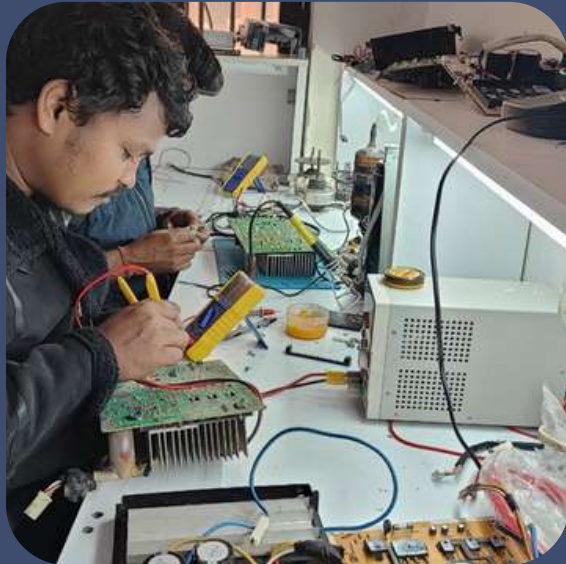
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# Course Overview



## Practical classes

- We provide practical class to students from Day 1
- Students are provided with PCB from institution without extra charge
- There is no time limit for students to use the practical class



## Theory Classes

- Trainers with over 23+ years of experience
- Doubt clearing sessions
- Classes use the modern facility

- What is VFD
- Difference between single & phase VFD board
- Difference between VFD & servo-drive
- How to identify VFD PCB
- All components (22 types)
- Identification & Damage checking of board
- Check supply on board
- PCB reading and tracing Fault finding by error codes
- Power supply, sensor, fan section, EPROM programme, communication section and much more etc.
- Tracing and repairing section
- Use of DSO in PCB repairing
- PCB matching, equivalent finding of all component
- IPM testing and working, IPM changing
- Micro controller testing & working
- PFC testing & working inverter section
- What is connector & its use



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# SYLLABUS

## Basic electronics

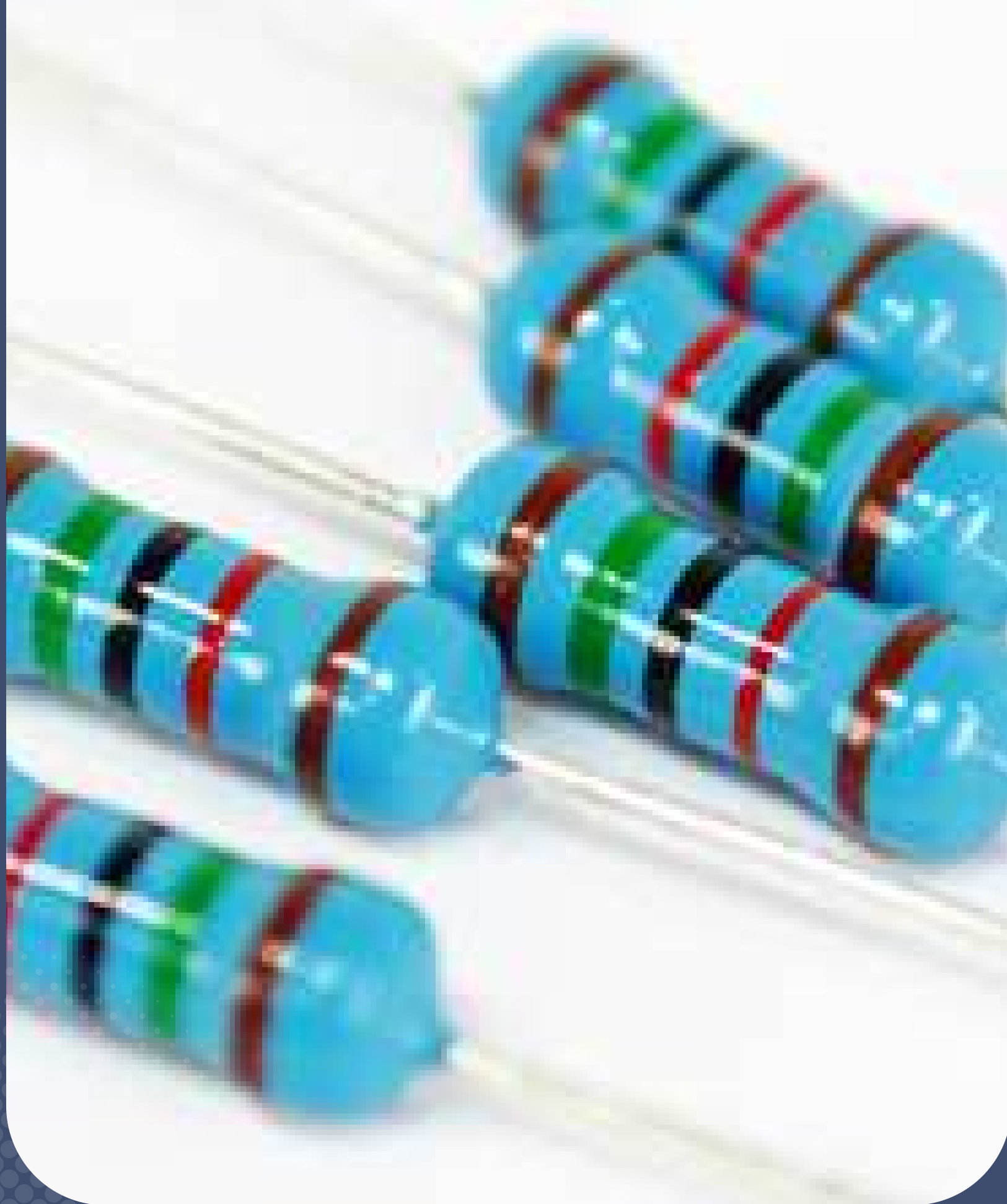
- Introduction of (Volt, current, watt)
- Introduction of (AC/DC)
- How to use digital multimeter

## Identification of electronics component

- Resistor, capacitor, transistor, mosfet, diode, crystal, IC, transformer, Fuse, Jumper, Thermistor, switch, Coil etc.







## resistor

- Denoting letter of resistor
- Identification & testing
- Color coding concept
- SMD resistor value
- Types of resistor

## capacitor

- Denoting letter of capacitor
- What is a Capacitor
- Types of capacitor
- Capacitor testing



## Diode

- Denoting letter and symbol of diode
- Working concept of diode
- Types of diode
- Bridge rectifier Diode
- concept Testing of Diode

## Transistor

- Denoting letter and symbol of transistor
- Working concept of transistor
- Types of Transistor
- SMD and normal transistor
- identification Testing of transistor





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## Mosfet

- Denoting letter and symbol of Mosfet
- Working concept of Mosfet
- Types of Mosfet
- Testing of Mosfet

## Coil

- Denoting letter and symbol of coil
- Looking concept of coil (Inductor)
- Types of coil
- Testing of all types of coil



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## IC/CHIP

- Identification of IC
- Working concept of IC
- Testing of IC on board

## Transformer

- Denoting letter and symbol of transformer
- Working concept of transformer
- Types of transformer
- Testing of transformer





### **Crystal**

- Symbol of crystal
- Working concept of crystal
- Testing of crystal

### **Fuse**

- Denoting letter and symbol of Fuse
- Working concept of fuse
- Workig of Fuse





## **Thermistor**

- Denoting letter and symbol of thermistor
- Working of thermistor
- Types of Thermistor
- Testing of Thermistor

## **Varistor**

- Denoting letter and symbol of Varistor
- Working of Varistor
- Testing of Varistor



**Thermistor**



## Battery

- Working concept of battery
- Testing of battery

## Switch

- Jumper
- Connector
- Regulator IC
- Opto coupler
- Relay



## VFD components and parts

- Compressor
- AC/DC motor
- Contractor
- Relay
- Regulator IC
- TRIAC
- SSR - Solid state Relay
- Biopolar liner IC
- 7 segment LED display
- Buck converter IC
- IGBT - Insolated Gate Biopolar Transistor
- IPM - Intelligent/Inverter Power Module
- Connector
- Gate driver circuit
- Keypad
- Micro-controller & many more components





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## **Soldering & De-soldering Practice**

- How to remove & sold all types of components in E-vehicle like ~ Resistor, Capacitor, Diode, Transistor, Mosfets, etc.

## **Basic of VFD**

- About details of VFD types
- What is HP in VFD system
- How to calculate VFD for load capacity
- Details of single phase and three phase VFD

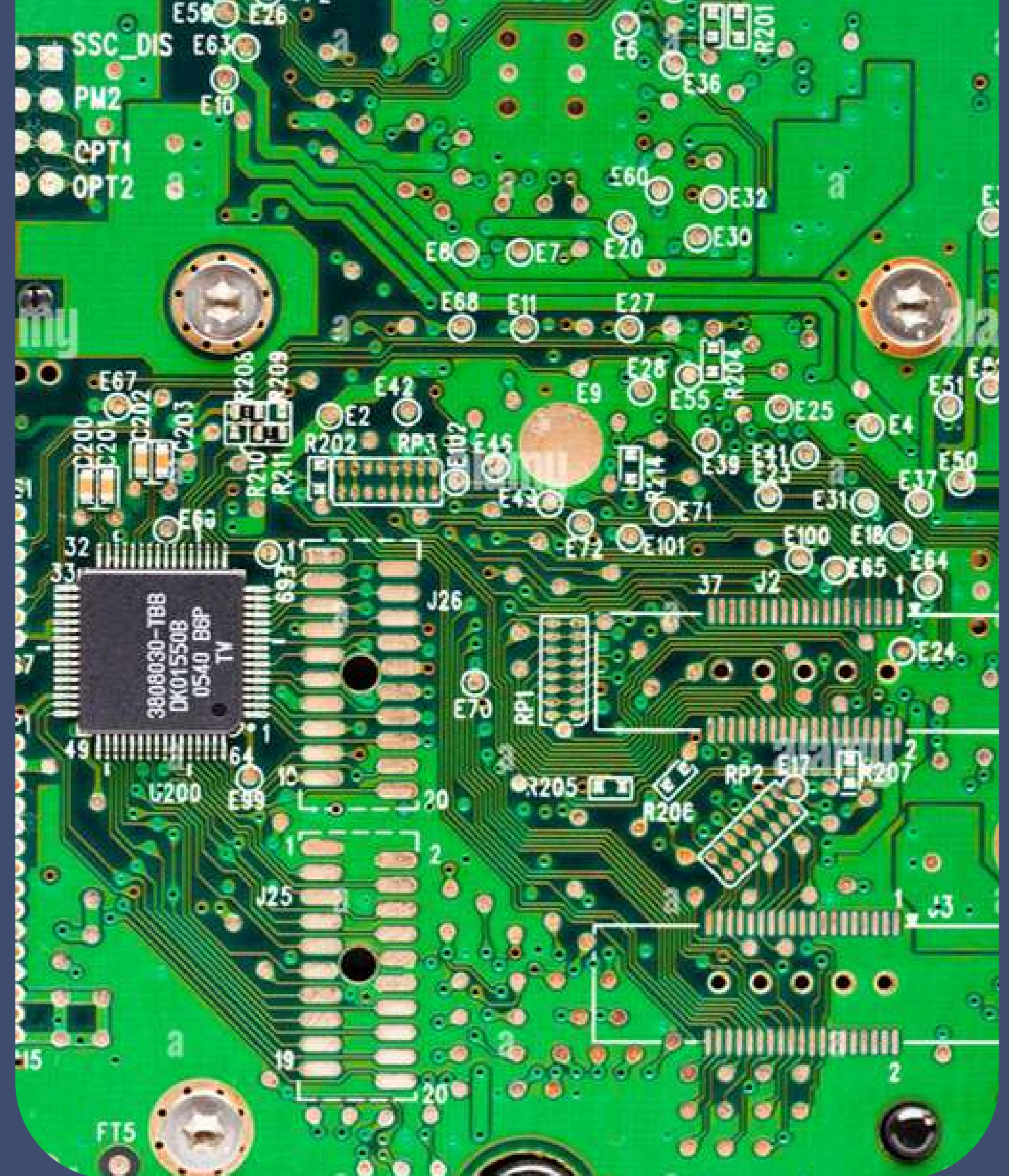




# Types of PCB

# What is the work of inverter PCB of IPM/IGBT

# What is the work of inverter PCB of fan motor





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**What is use of noise  
filter section**

**What is IPM/IGBT & its  
use**

**How to set wiring  
between all PCB**

**How to check separate  
PCB**

**check PCB with 3 phase  
supply**



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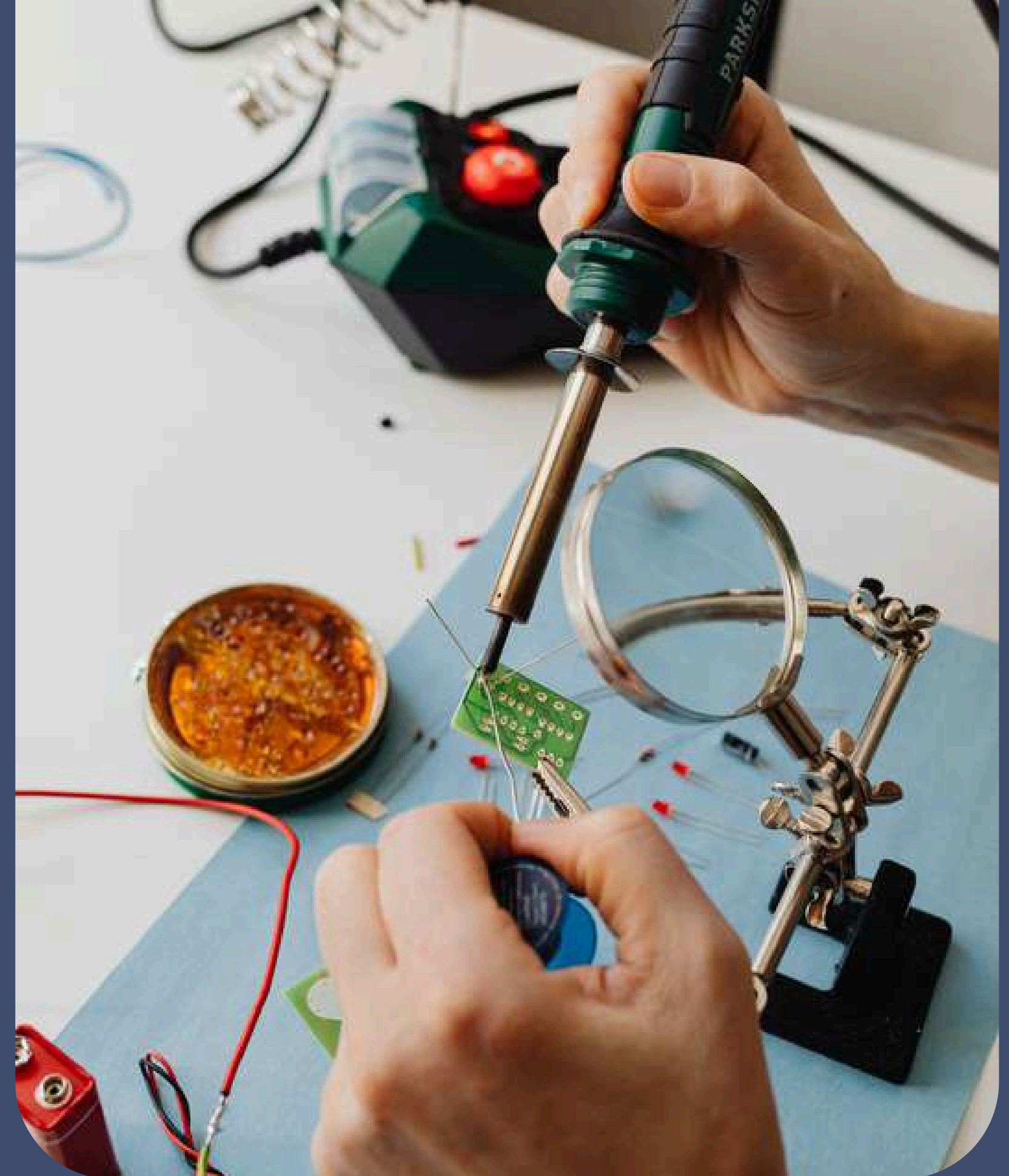
check PCB with single  
phase supply

How to check voltage

Check on board testing  
of test point

Check signal by DSO  
machine

Check signal by  
multimeter





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**Check signal in  
communication  
between PCB**

**Check all section step  
by step**

**how to find the error  
code**

**How to diagnose the  
fault in section**

**Understanding working  
concept of all section**





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Check all parts

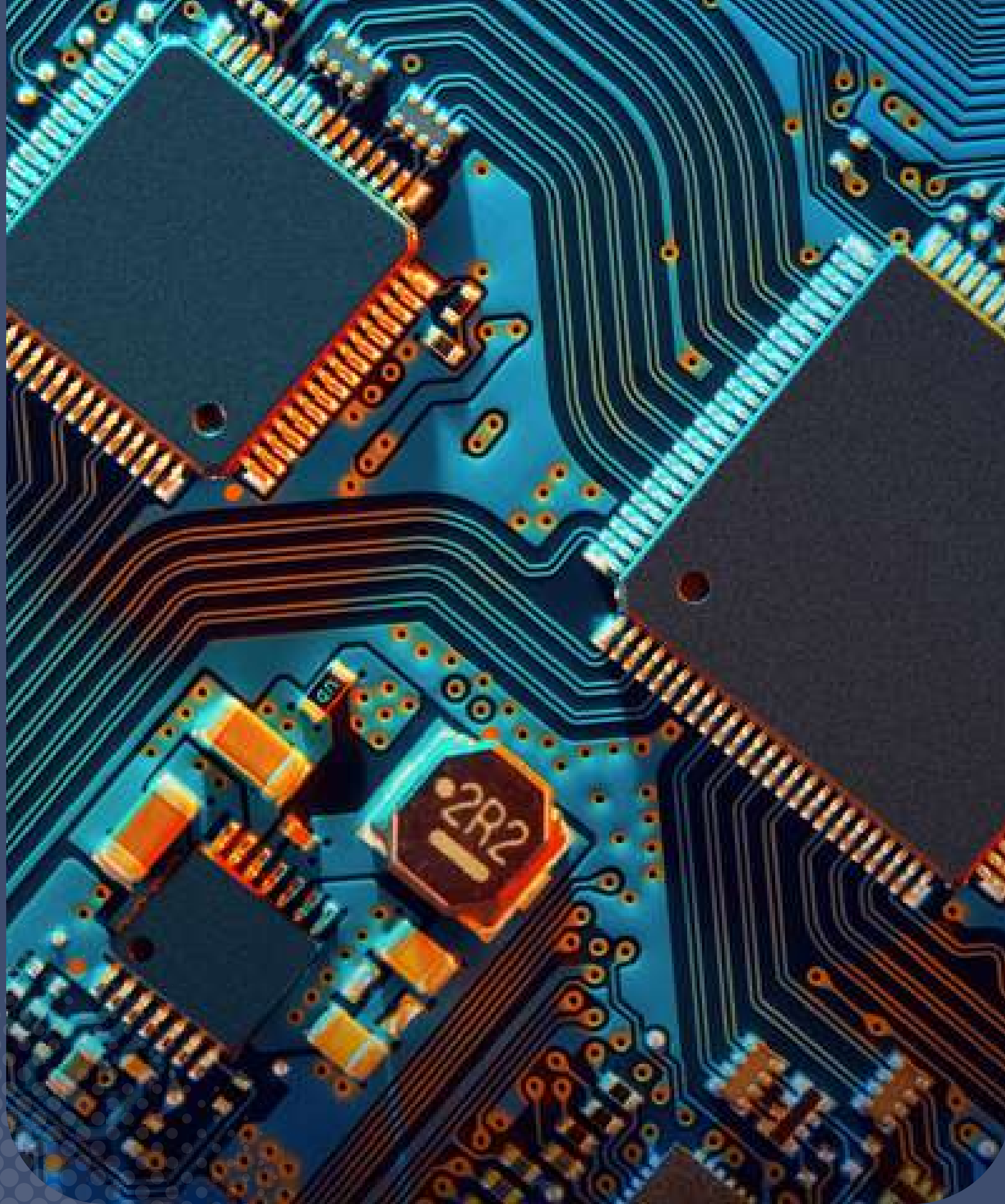
How to change  
IPM/IGBT

Replace  
parts/components

connection of  
communication

Increase or decrease  
motor speed by setting





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**Check display PCB  
main PCB and inverter  
PCB**

**Check IPM/IGBT input &  
output signal**

**Check voltage on  
IPM/IGBT signal**

**What is VFO/FO of  
IPM/IGBT**

**Identification of PCB &  
company**





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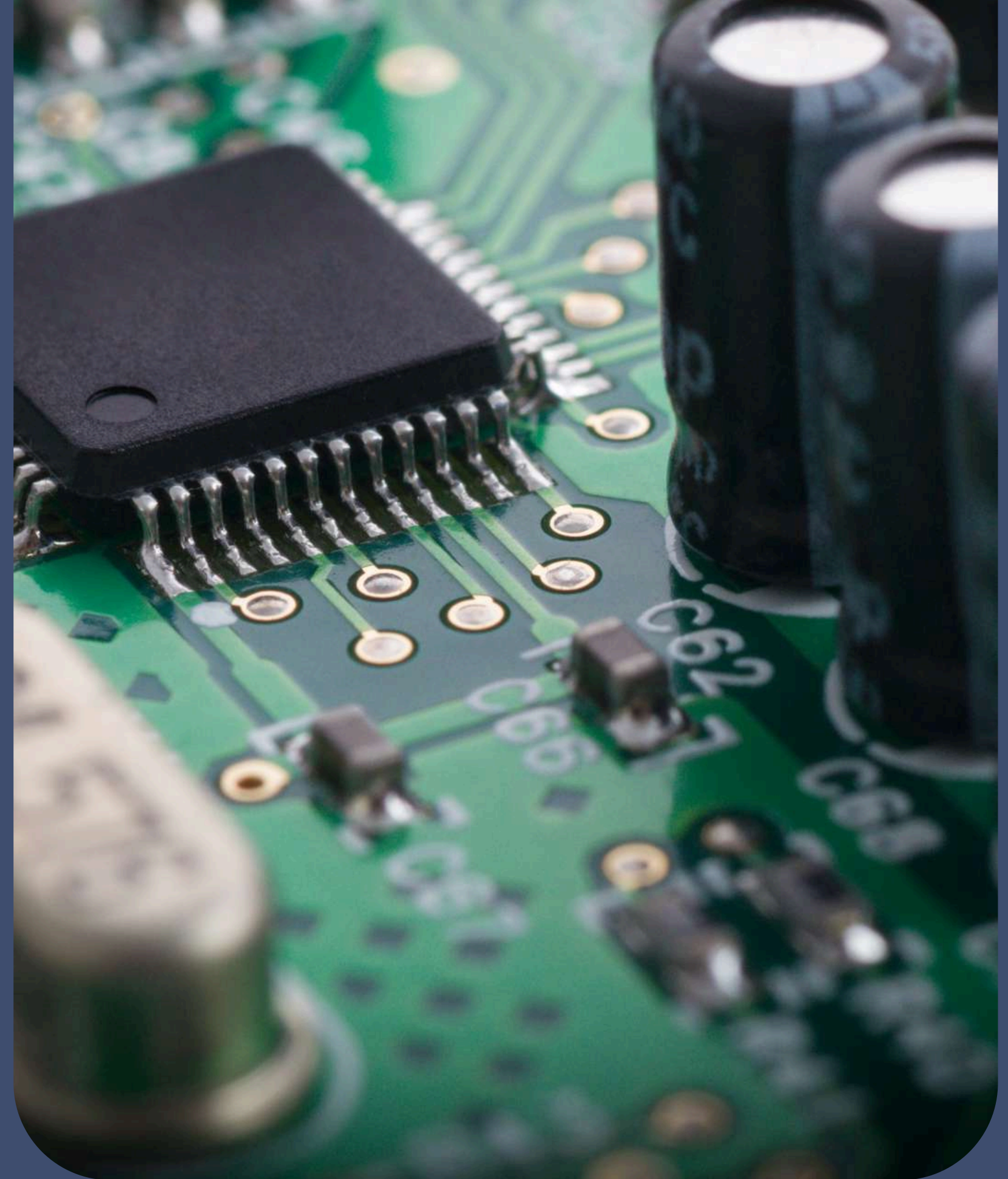
**Details of every  
connector of PCB**

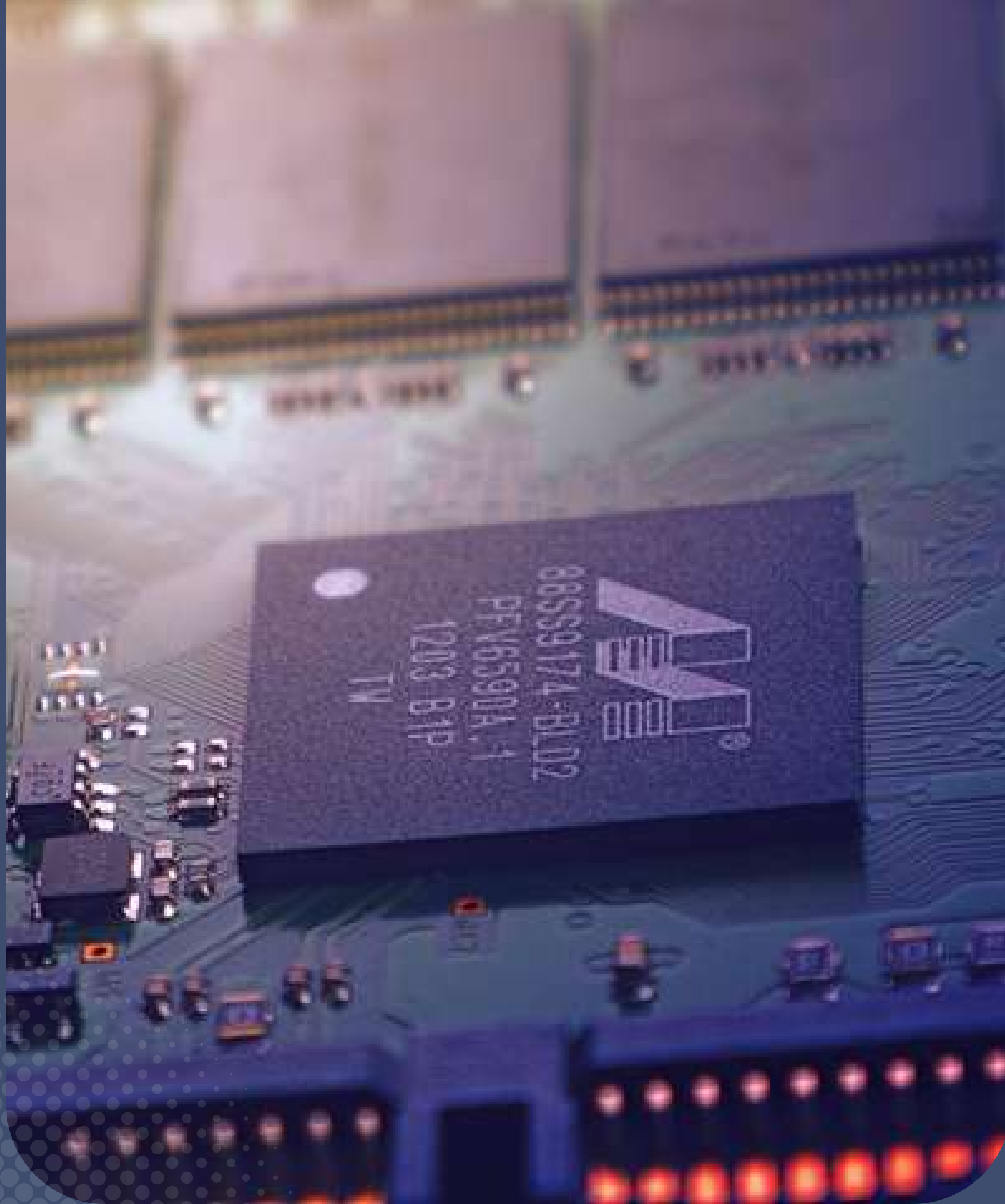
**Full detail about all  
sensor**

**Full detail about all  
section**

**What is over current  
circuit**

**Check fan motor**





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**About high/low voltage  
protection**

**About high/low current  
protection**

**How to repair power  
supply**

**How to bypass power  
supply**

**How to check board in  
shorting in circuit**

**Multi type PCB of VFD**





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## Improving employability skills

- VFD PCB resume writing skills
- VFD PCB interview skills empowering
- VFD PCB empowering of interpersonal relationship
- VFD PCB stress management
- VFD PCB positive attitude development
- VFD PCB self motivation
- VFD PCB sentence formation
- VFD PCB presentation skills
- VFD PCB roles & responsibilities of design engineers





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# Call for DEMO

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Instagram

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