Spectra Trading (Pty) Ltd

Reg No: 2025/525554/07

Integrated Circuit (IC) Types & Specifications

IC Type	Voltage Range	Pin Count	Function	Typical Applications
Analog ICs	3V – 30V	3 – 20 pins	Amplify, filter, regulate, or convert signals	Audio systems, sensors, power supplies.
Digital ICs	1.2V – 5V	8 – 100+ pins	Logic operations, data processing	Microcontrollers, memory chips, processors, digital
Mixed-Signal ICs	1.8V – 5V	10 – 100+ pins	Combine analog and digital functions	ADC/DAC converters, communication
Power Management ICs (PMIC)	2.5V – 20V	8 – 64 pins	Voltage regulation, battery charging	IoT devices, mobile electronics.
Microcontrollers (MCUs)	1.8V – 5V	8 – 100+ pins	Programmable control unit	Embedded systems, automation.
Memory ICs (RAM, ROM, Flash)	1.2V – 3.3V	8 – 64 pins	Data storage and retrieval	Computers, mobile devices, industrial
Operational Amplifiers (Op-Amps)	±5V – ±15V	3 – 8 pins	Signal amplification	Audio, instrumentation, analog signal
Timer ICs (e.g., 555)	4.5V – 15V	8 pins	Timing, pulse generation	Oscillators, LED blinkers, delay circuits
Voltage Regulators (e.g., LM317)	3V – 40V	3 – 5 pins	Maintain constant output voltage	Power supplies, battery chargers, embedded
Interface ICs (UART, SPI, I2C)	1.8V – 5V	8 – 32 pins	Communication between devices	Microcontroller peripherals, sensors, displays
Sensor ICs	1.8V – 5V	3 – 16 pins	Detect physical parameters	Temperature, pressure, motion, light sensing
Driver ICs (Motor/LED)	5V – 48V	8 – 40 pins	Control high-current loads	Motor control, LED arrays, relay switching