

DC-DC Step Down Buck Converter

XL4015 5A



Features:

The TSL1401 Linear CCD Camera Module is a compact, high-resolution sensor designed for real-time grayscale image acquisition. It incorporates 128 photodiodes in a single line, enabling 1D image capture for advanced processing tasks. With an STM32-compatible interface, the module outputs analog gray-level data, making it highly suitable for embedded vision projects. Its wide 56° field of view, fast response time (~100 ms), and low sensitivity to ambient light fluctuations allow precise performance in line tracking, obstacle detection, and robotic navigation. Typical applications include smart vehicle path recognition, multi-channel line detection, and electronic image processing systems.

Specifications	
Model	TSL1401 Linear CCD Module
Working Voltage	DC 3.3V–5V
Output Signal	128 × 1 pixel linear CCD
Reaction Time	100 ms (typical test routine)
Lens	56° distortion-free
Detection Distance	5–40 cm
Resolution	1D, high resolution
Working Principle	Linear scan
Lighting Environment	Indoor and outdoor use
Tracking Speed	High-speed tracking
Application	Smart car path recognition, obstacle avoidance, line tracking
Size	28 × 26 × 40 mm
Weight	7.2 g (module only)
Applications	Battery charging, DIY PSU, car laptop adapters, industrial equipment

Pinouts:

Pin Name	Type	Description
GND	Power	Ground connection
VCC	Power	Power supply input (3.3V–5V DC)
AO	Analog	Output of gray value as analog voltage
CLK	Input	Clock pin, controls exposure and pixel data output
SI	Input	Start/Control pin for pixel acquisition



Product Pictures:



