

AMS1117-3.3 – linear regulator 5 V → 3.3 V

generic · SOT-223 · LDO · ~\$0.1

WHAT IT IS

A simple linear regulator: gives a clean, quiet 3.3 V from the 5 V rail by acting as a smart variable resistor (burning the difference as heat). Quiet output = good for the logic + ADC references.

KEY SPECS (what matters to us)

1 A · ~1.1 V dropout · needs in/out caps · SOT-223 (tab = output)

SIGNALS / PINS WE USE

VI (5 V) · VO (3.3 V) · GND · tab = VO

ELECTRICAL · GOTCHAS

Burns $(V_{in} - V_{out}) \times I$ as heat → only OK because the buck already did the 12→5 heavy lift, so it only drops 5→3.3 (~1.7 V × small current).

WHY IT'S IN OUR SYSTEM

Logic + ADC want a QUIET 3.3 V; a switcher's ripple would hurt the ADC. The buck handles the efficient big step (12→5), the AMS1117 gives the clean final 3.3 V. Classic buck-then-LDO combo – best of both.