

CA3130, CA3130A

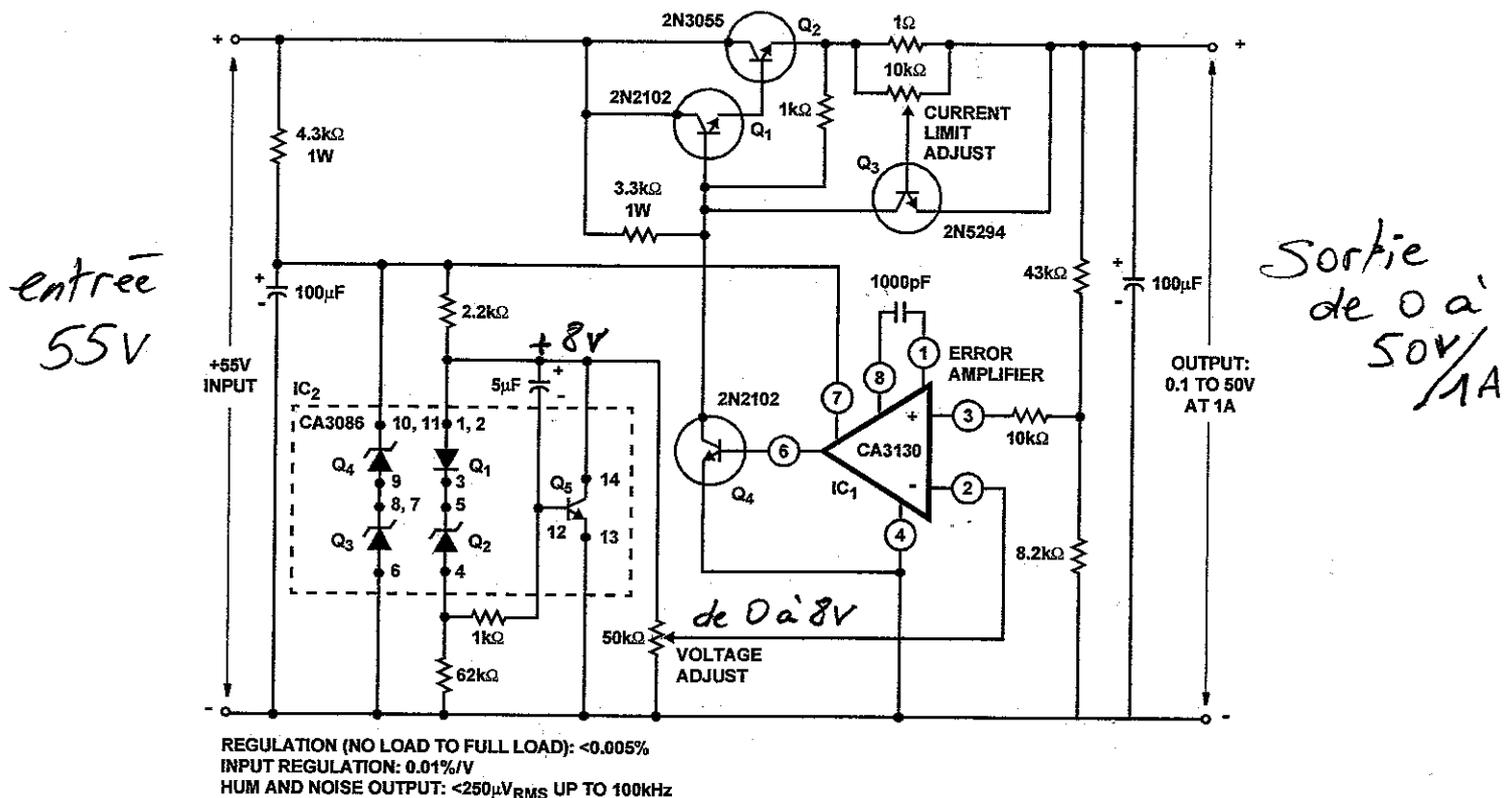


FIGURE 14. VOLTAGE REGULATOR CIRCUIT (0.1V TO 50V AT 1A)

Error-Amplifier in Regulated-Power Supplies

The CA3130 is an ideal choice for error-amplifier service in regulated power supplies since it can function as an error-amplifier when the regulated output voltage is required to approach zero. Figure 13 shows the schematic diagram of a 40mA power supply capable of providing regulated output voltage by continuous adjustment over the range from 0V to 13V. Q₃ and Q₄ in IC₂ (a CA3086 transistor-array IC) function as zeners to provide supply-voltage for the CA3130 comparator (IC₁). Q₁, Q₂, and Q₅ in IC₂ are configured as a low impedance, temperature-compensated source of adjustable reference voltage for the error amplifier. Transistors Q₁, Q₂, Q₃, and Q₄ in IC₃ (another CA3086 transistor-array IC) are connected in parallel as the series-pass element. Transistor Q₅ in IC₃ functions as a current-limiting device by diverting base drive from the series-pass transistors, in accordance with the adjustment of resistor R₂.

Figure 14 contains the schematic diagram of a regulated power-supply capable of providing regulated output voltage by continuous adjustment over the range from 0.1V to 50V and currents up to 1A. The error amplifier (IC₁) and circuitry associated with IC₂ function as previously described, although the output of IC₁ is boosted by a discrete transistor (Q₄) to provide adequate base drive for the Darlington-

connected series-pass transistors Q₁, Q₂. Transistor Q₃ functions in the previously described current-limiting circuit.

Multivibrators

The exceptionally high input resistance presented by the CA3130 is an attractive feature for multivibrator circuit design because it permits the use of timing circuits with high R/C ratios. The circuit diagram of a pulse generator (astable multivibrator), with provisions for independent control of the "on" and "off" periods, is shown in Figure 15. Resistors R₁ and R₂ are used to bias the CA3130 to the mid-point of the supply-voltage and R₃ is the feedback resistor. The pulse repetition rate is selected by positioning S₁ to the desired position and the rate remains essentially constant when the resistors which determine "on-period" and "off-period" are adjusted.

Function Generator

Figure 16 contains a schematic diagram of a function generator using the CA3130 in the integrator and threshold detector functions. This circuit generates a triangular or square-wave output that can be swept over a 1,000,000:1 range (0.1Hz to 100kHz) by means of a single control, R₁. A voltage-control input is also available for remote sweep-control.

Note trouve sur le NET chez ABC electronique.com le 25/06