

Here are condensed versions of the 12 Circuit Designs that you chose as best of the issue in 1964. For the details of circuit operation, see the respective issues in which they appeared. Your votes alone determine which of these circuit designers receives the \$1000 U.S. Savings Bond.

Vote Twice!

- ☐ For the Grand Prize Award
- ☐ For the best February Circuit
- ☐ Place letter and number side by side in the ballot box on inquiry card.

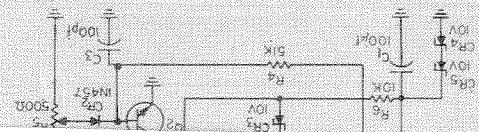


Zener Stabilizes Phase-Shift Oscillator
By G. Richwell, Reflectone Electronics Inc.
Entry E
A low-voltage zener diode has a rounded knee characteristic with ordinary diodes. In the circuit shown, diode CR₂ detects current through CR₁ when output amplitude is too large, thus increasing the dynamic impedance of CR₁ to reduce the gain of Q₁.
See May EEE.

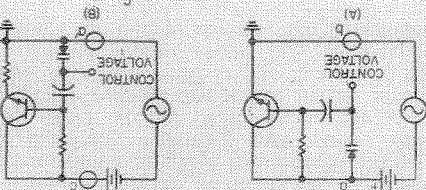
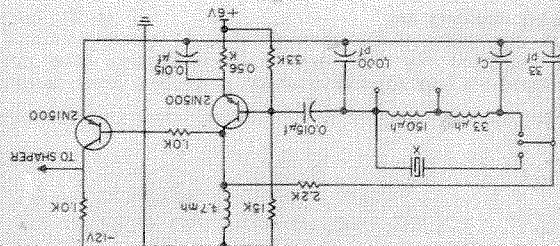
Inexpensive Short-Proof Voltage Regulator
By Davis E. Wilson, Lockheed Missiles & Space Co. Entry F
This 24-v regulator turns itself off when the load is short-circuited, and gives 1-percent regulation from no load to 500 ma with inputs from 26 to 35 v. Re-starting either can be automatic when the short is removed, or manual. Total parts cost for automatic re-start is \$16, for manual, \$10. In the circuit, when the load resistance drops too low, Q₂ cuts off, turning the regulator off. Q₁ and CR₁ may be mounted on the same small heat sink, since it is necessary to dissipate only about 2 w.
See June EEE.

One-Stage Semiconductor Noise Generator
By G. Richwell, Reflectone Electronics Inc. Entry G
If a zener diode's noise current, instead of its noise voltage, is used as a source of noise, a much more efficient circuit is possible, since the amplifying transistor is primarily a current-amplifying device. With a nominal current gain of 75, the generator shown supplies a 15-v peak-to-peak noise signal. Note that the zener also serves to stabilize the transistor operating point.
See July EEE.

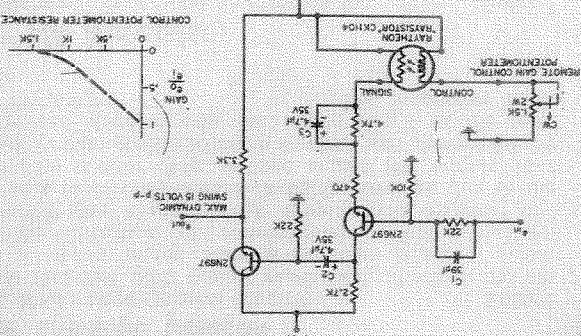
B — Adjustable overload protection.



C — Crystal-or-capacitor oscillator.



D — Variable-C diodes make tunable filter elements.



H — Amplifier with remote gain control.