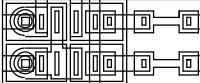


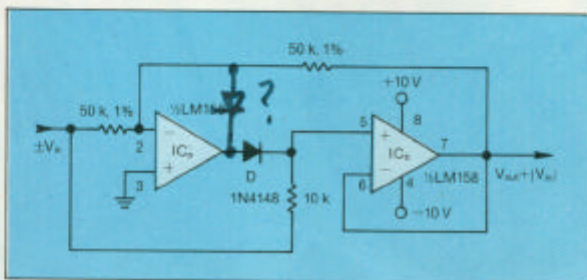
Simple Full Wave Rectifier (from Ideas for Design, Electronic Design, 11/25/82)

		ANALOG INNOVATIONS, Inc. 824 E. CATHEDRAL ROCK DRIVE PHOENIX, AZ 85048-6300 (480) 460-2350 FAX: (480) 460-2142	
Title: Simple Full Wave Rectifier (from Ideas for Design, Electronic Design, 11/25/82)			
Size A	FileName: ...FullWaveRectifier.sch		REV A
September 1, 2003, 2:11 PM		Sheet 1 of 1	

IdeasForDesign

Simple circuit yields absolute value

As attractive as a reduced parts count is to a designer, improved performance is even more desirable. The absolute-value circuit shown accomplishes its task with just five parts, three fewer than conventional designs, and represents its output as a positive voltage rather than the negative expression of previous designs. Since some of the eliminated parts are precision resistors, the circuit can do more for less.



The absolute value of an input voltage is always represented by a positive voltage in this simple dual op-amp circuit. Another benefit of this design is the low parts count.

When an input voltage is positive, the output of IC_a is negative and diode D does not conduct; hence the output of IC_b is positive. On the other hand, when the input is negative, the output of IC_a is positive and D will conduct, causing the absolute value, expressed as a positive voltage, to appear on the noninverting input of IC_b and on the circuit's output.

The circuit's dynamic range extends from zero to the point at which the operational amplifier saturates. The bandwidth is determined by the characteristics of the diode and the high-frequency performance of the op amp.

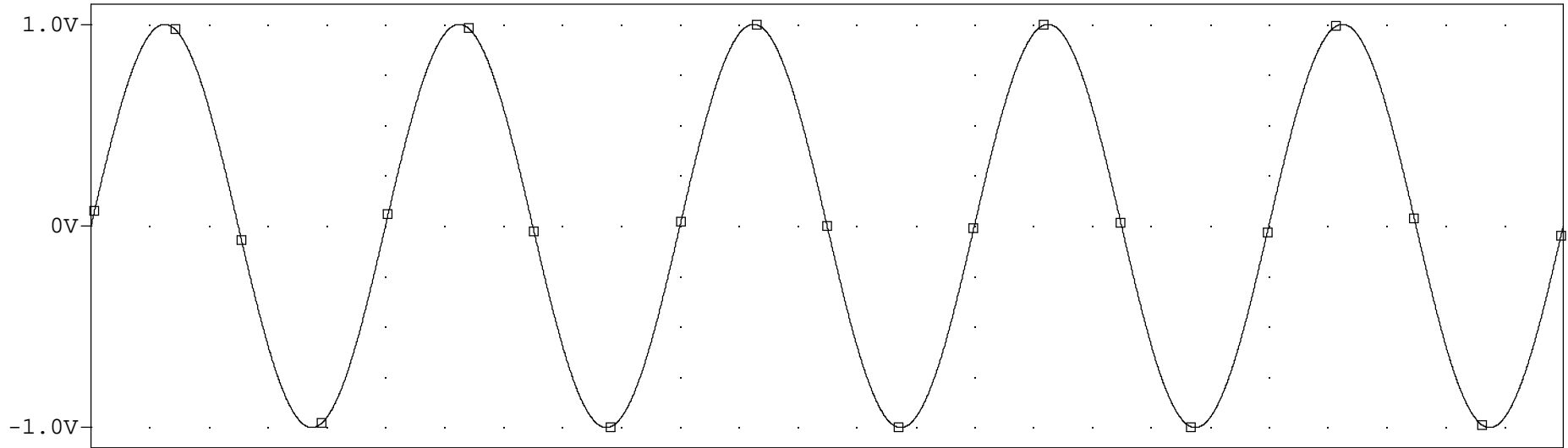
Stan Rubin, Senior Engineer, Ragen Data Systems Inc., 3 Oval Dr., Central Islip, N.Y. 11722.

Winner for October 28, 1982

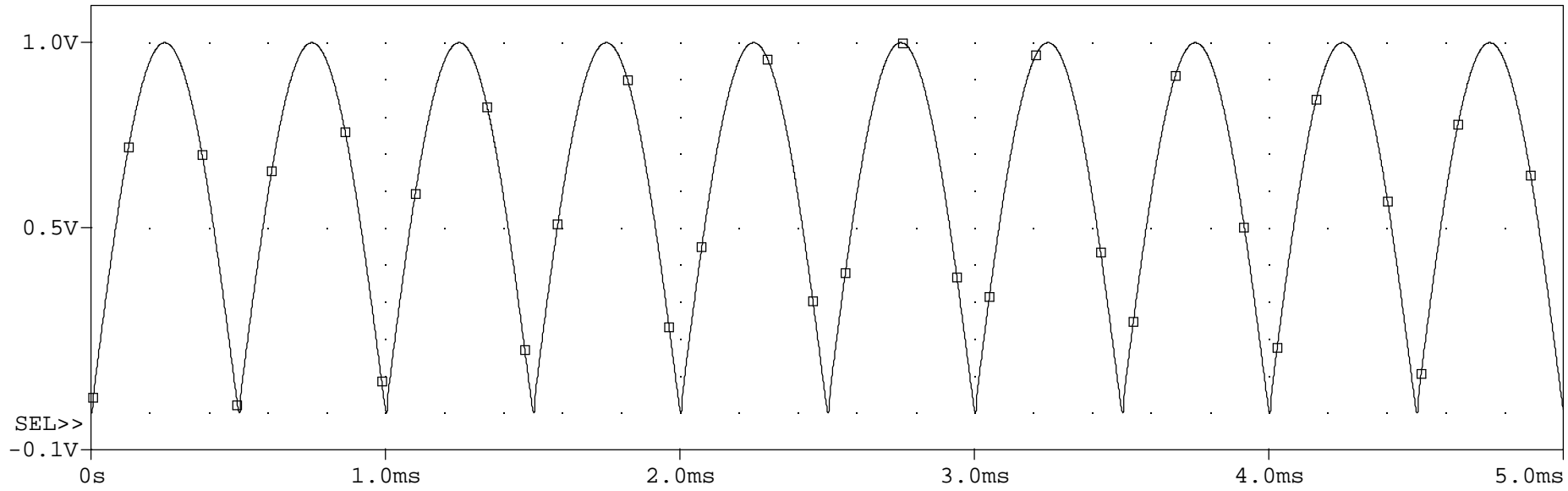
"Two analog switches convert op amp into logarithmic a-d converter"

C. Rameshu, Centre for Electronics Design Technology, India Institute of Science, Bangalore-560012, India.

Simple Full Wave Rectifier (from Ideas for Design, Electronic Design, 11/25/82)

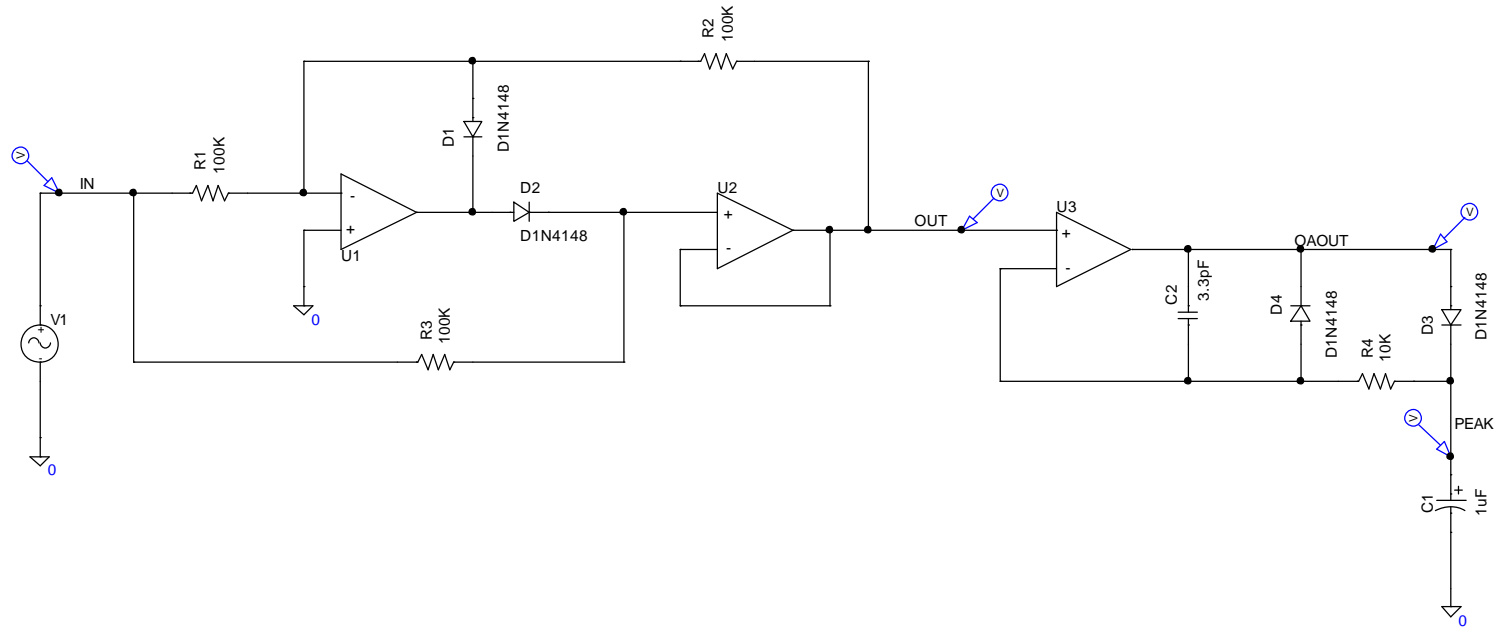


□ V(IN)

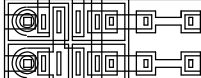


□ V(OUT)

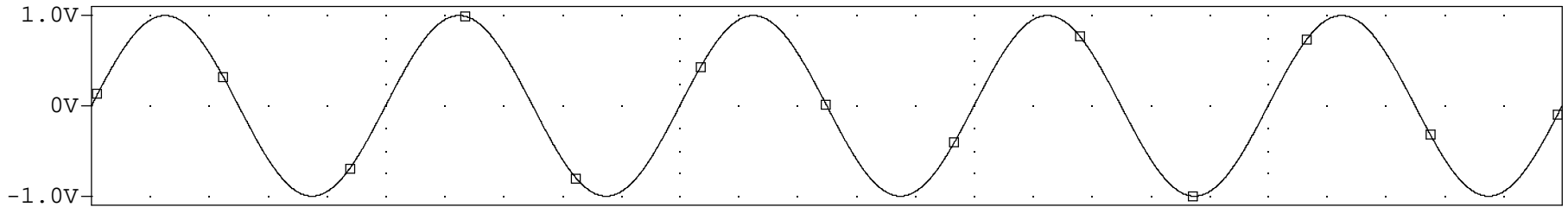
Time



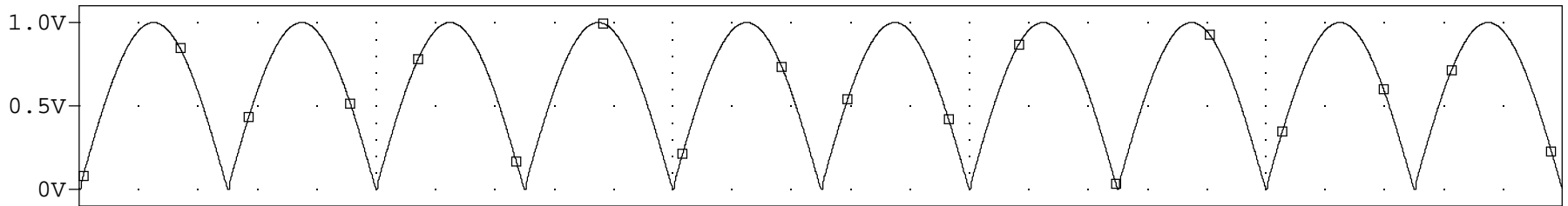
SMALL TIME CONSTANT
PURPOSELY USED TO
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Title: Simple Full Wave Rectifier with Peak Detector Added			
Size A	FileName: ...FullWaveRectifierWithPeakDetect.sch		REV A
September 2, 2003, 9:17 AM		Sheet 1 of 1	

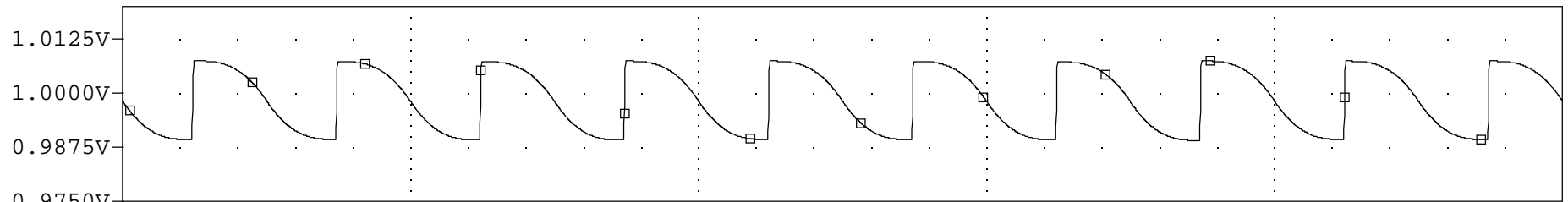
Simple Full Wave Rectifier with Peak Detector Added



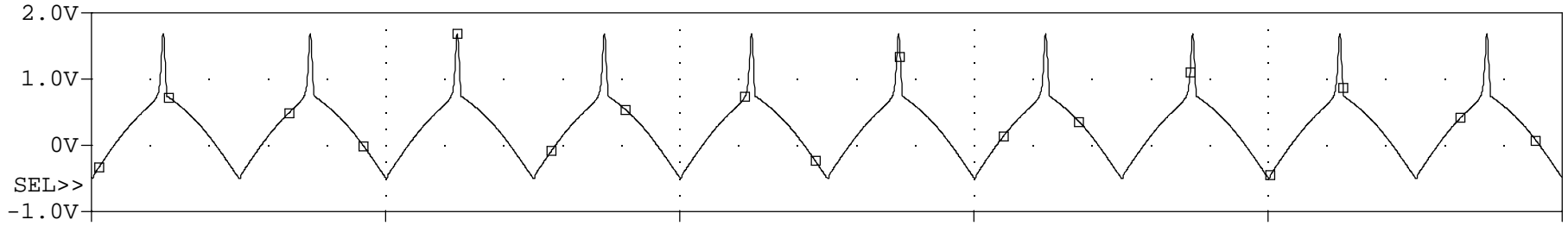
□ V(IN)



□ V(OUT)



□ V(PEAK)



□ V(OAOUT)

Time