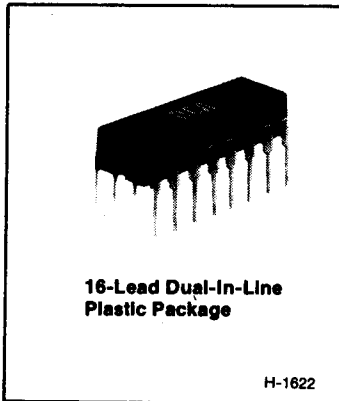




TV Horizontal Oscillator

For Color and Monochrome Receivers

Features:

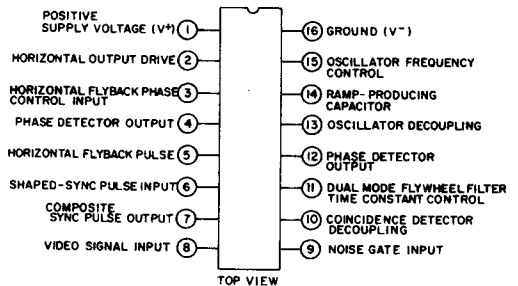
- Sync separator
- Noise gate input
- Internal precision timing ramp
- Dual-time-constant phase-locked loop
- Output suitable for transistor or thyristor deflection systems
- Reduced power dissipation

The RCA-CA920AE is a silicon monolithic integrated circuit intended for use in the horizontal stages of color and monochrome television receivers. This device performs the functions of a sync separator, noise gate, and horizontal oscillator with dual-time-constant switching in the fly-wheel loop. It also generates automatic phase control between horizontal flyback pulses and the horizontal oscillator frequency and provides fast edge switching drive for transistor or thyristor horizontal output stages.

The CA920AE is compatible with the industry type TBA920 in both lead arrangement and electrical operation, although the CA920AE features reduced operating current.

The CA920AE is supplied in the 16-lead dual-in-line plastic package.

TERMINAL ASSIGNMENT



92CS-27479

•Formerly Dev. Type No. TA6773.

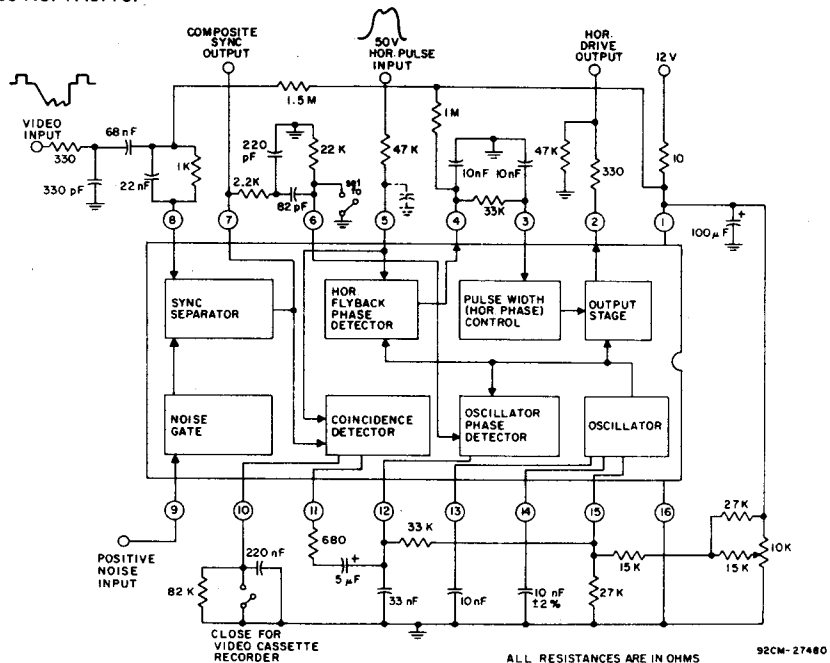


Fig. 1 - Functional block diagram of the CA920E with typical peripheral circuitry.

Linear Integrated Circuits
CA920AE

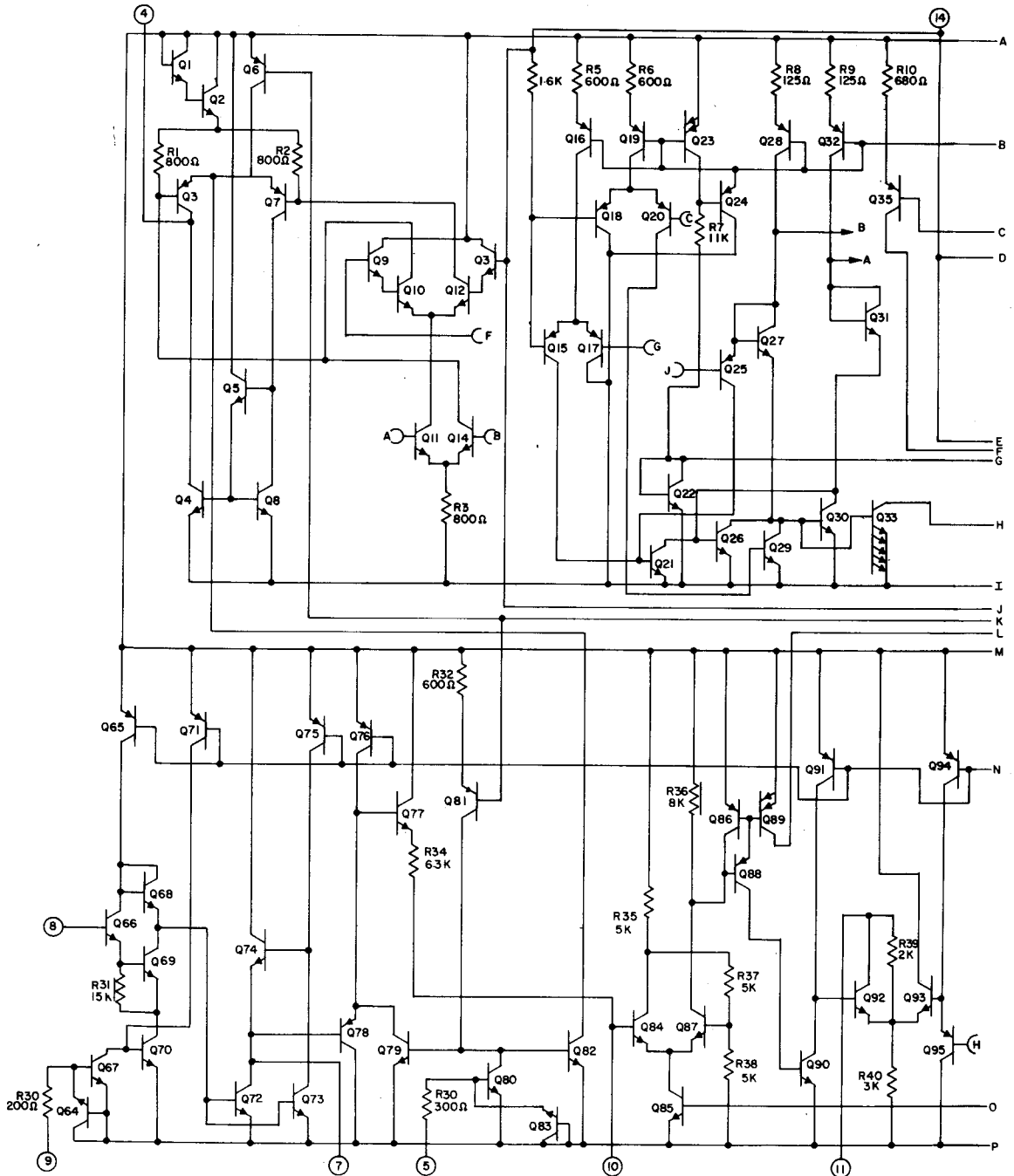


Fig. 2 - Schematic diagram of the CA920AE (cont'd on next page).

TV/CATV Circuits

CA920AE

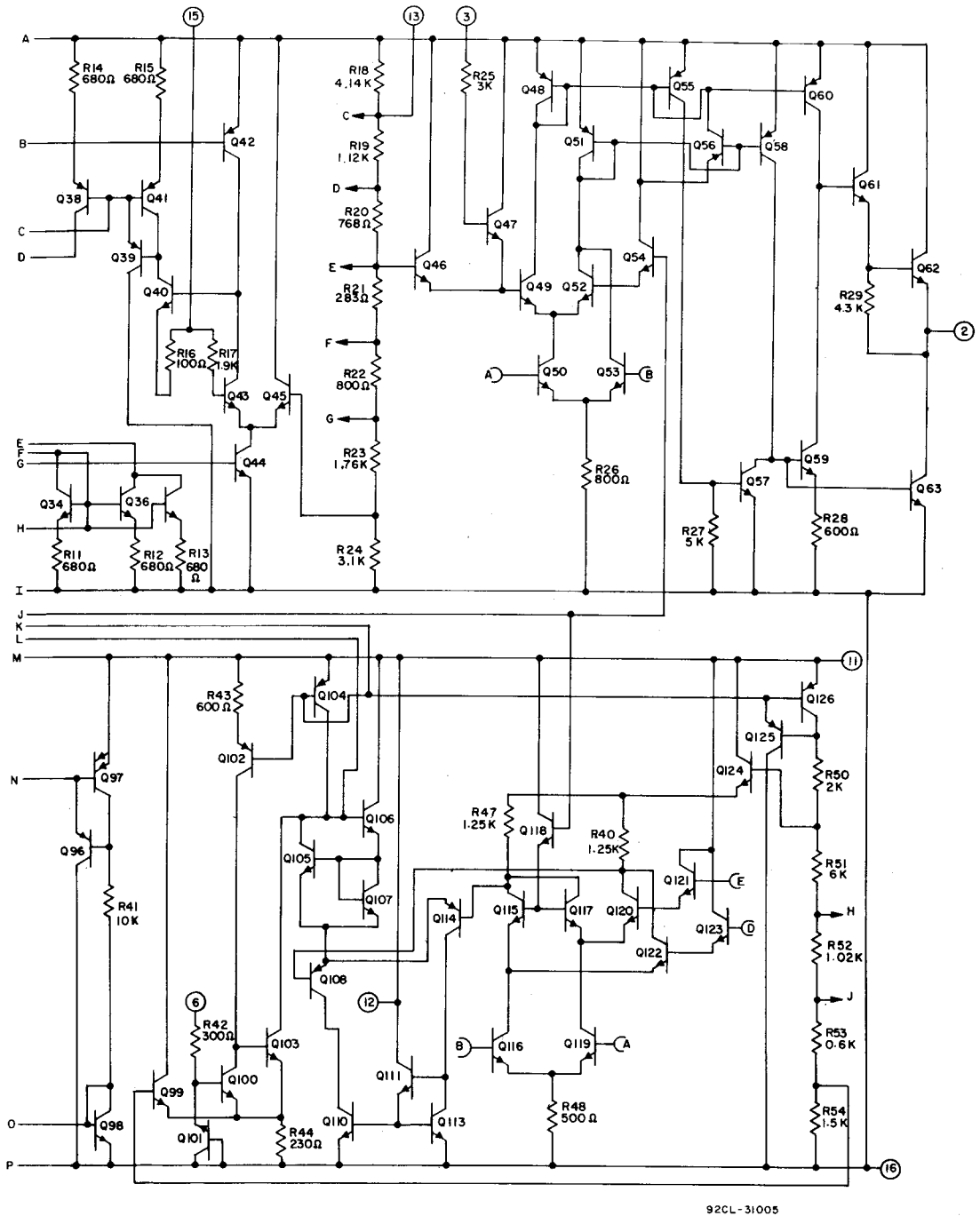


Fig. 2 - Schematic diagram of the CA920AE (cont'd from previous page).

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CA920AE

MAXIMUM RATINGS, Absolute Maximum Values:

DC SUPPLY VOLTAGE	13.2 V
DEVICE DISSIPATION:	
Up to T _A = 55°C	750 mW
Above T _A = 55°C	Derate linearly at 7.9 mW/°C
AMBIENT TEMPERATURE RANGE:	
Operating	-40 to +85°C
Storage	-65 to +150°C
LEAD TEMPERATURE (During soldering):	
At a distance not less than 1/32" (0.79 mm) from case for 10 seconds max.	+265°C

ELECTRICAL CHARACTERISTICS at T_A = 25°C, and Supply Voltage (V⁺) = 12 V, Unless otherwise specified. See Fig. 1.

CHARACTERISTIC	TEST CONDITIONS	LIMITS			UNITS
		Min.	Typ.	Max.	
Supply Current, Term. 1, I ⁺	Term. 2 open		22		mA
Video Characteristics (Term.8):					
Input Voltage V _g	Peak to peak	1.5	3	6	V
Input Current I _g	Peak			10	mA
Noise Gate Characteristics (Term.9):					
Input Current I _g		0.03		10	mA
Reverse Input Current I _g				-10	mA
Horizontal Flyback Positive Pulse Characteristics (Term.5):					
Input Voltage V ₅		1		3	V
Input Current I ₅		0.05	1	10	mA
Input Impedance Z ₅			0.4		kΩ
Positive Sync Characteristics (Term.7):					
Output Voltage V ₇	Peak to peak		10		V
Output Impedance Z ₇	Leading edge		50		Ω
Output Impedance Z ₇	Trailing edge		100		Ω
Horizontal Output Characteristics (Term.2):					
Output Current I ₂ MAX	Peak			200	mA
Output Current I ₂ AV	Average			20	mA
Output Pulse Width t _W		12		32	μs
Output Impedance Z ₂	Leading edge		2.5		Ω
Output Impedance Z ₂	Trailing edge		15		Ω
Horizontal Oscillator Characteristics (Term.15):					
Free-Running Frequency f _o	No sync input	14.84	15.625	16.41	kHz
Free-Running Frequency f _o	V ⁺ = 4.5 V	14.06	(Note 1)	17.19	kHz
Oscillator Cut-out Voltage	V ⁺ varied		4.0		V
Oscillator Pull-in Range			±1.0		kHz
Phase Control (Note 2)				15	μs

Note 1: Free-running frequency at 12 V adjusted to 15.625 kHz.

Note 2: External delay between the leading edge of output pulse at Term. 3 and the start of the horizontal flyback pulse.