

SN 76600 P

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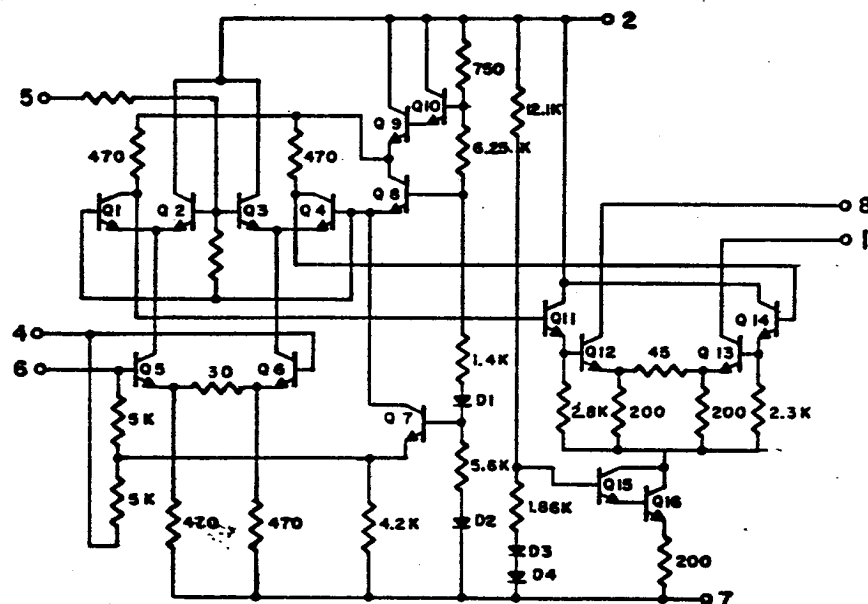
SN76600P MONOLITHIC TV VIDEO IF AMPLIFIER

FEATURES:

CENTER FREQUENCY, FO - 45MHz
BANDWIDTH, BW - 6MHz
POWER GAIN - > 50dB
AGC RANGE - > 60dB
LOW REVERSE-TRANSFER ADMITTANCE - 1.0 μ MHO TYPICAL
NEARLY CONSTANT INPUT AND OUTPUT ADMITTANCE OVER THE ENTIRE
AGC RANGE
Y21 CONSTANT TO 75MHz
12 VOLT OPERATION, SINGLE - POLARITY
POWER SUPPLY
TOTAL SUPPLY CURRENT - 20mA TYPICAL

THE SN76600P, AN INTEGRATED CIRCUIT WITH WIDE- RANGE AGC FOR REPLACEMENT OF 1ST AND 2ND IF STAGES IN SOLID-STATE COLOR AND BLACK AND WHITE TV SETS. IT WILL DIRECTLY DRIVE A 3RD IF STAGE.

CIRCUIT SCHEMATIC



TEXAS INSTRUMENTS
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Maximum Ratings ($T_A = 25^\circ\text{C}$)

Rating	Symbol	Value	Unit
Power Supply	V+	+18	Vdc
Output Supply	V_1, V_8	+18	Vdc
AGC Supply	V_{AGC}	$4V < V_{AGC} < V+$	Vdc
Differential Input Voltage	V_{in}	± 7.0	Vdc
Power Dissipation Derate above $T_A = 25^\circ\text{C}$	P_D	625 5.0	mW mW/ $^\circ\text{C}$
Operating Temperature Range	T_A	0 to +75	$^\circ\text{C}$

Electrical Characteristics
 $V+ = +12\text{Vdc}$, $T_A = 25^\circ\text{C}$

DC Characteristics	Symbol	Min	Typ	Max	Unit
Total Supply Current, (Figure 1) Pins 1, 2 and 8	I_s	-	20	-	mAdc
Output Stage Current	$I_1 + I_8$	-	6.5	-	mAdc
AGC Supply (Figure 2) (0dB Attenuation) (60dB Attenuation)	V_{AGC}	-	5	-	Vdc
	I_{AGC}	-	0.1	-	mAdc
	V_{AGC}	-	6.9	-	Vdc
	I_{AGC}	-	0.2	-	mAdc
Small Signal Characteristics ($f = 45\text{MHz}$)	Symbol	Min	Typ	Max	Unit
Power Gain (Figure 1) (BW = 6.0MHz)		46	50	-	dB
Y-Parameters Single-Ended Input Admittance Differential Output Admittance Differential Admittance Variation with AGC (0dB to 60dB) Input Admittance Output Admittance (Y_{21}) (0dB AGC)	g_{11}		1.0		mmho
	b_{11}		2.8		
	g_{22} b_{22}		0.07 0.5		mmho
	g_{11} b_{11}		0.06 0		mmho
Useable AGC Range in 45-MHz TV IF	g_{22} b_{22}		0.004 0.04		mmho
			0.2		mho
			>60		db



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APPLICATIONS:

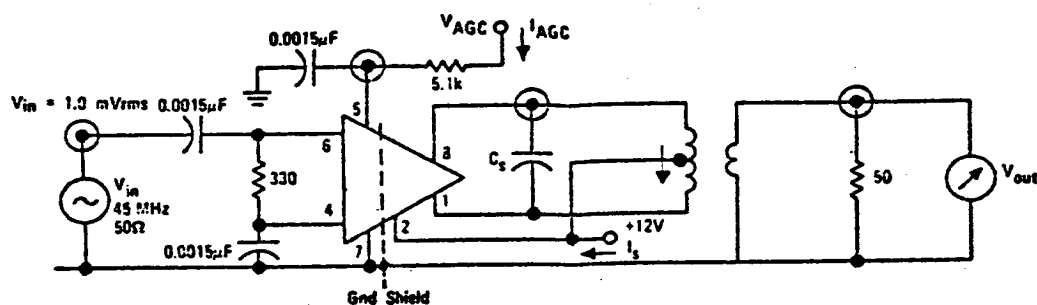
TV VIDEO IF

DEFENSE COMMUNICATIONS SATELLITE PROGRAMS

COMBINED AM/FM RADIO IF AMPLIFIERS

LINEAR SWITCH OR CHOPPER FOR MULTIPLEX

MODULATION OR DEMODULATION

**NOTE:**

It is essential that the external feedback capacitance be minimized.

Transformer Data**Primary:** AWG No. 32 wire, 15 turns close wound, 1/4" diameter, Core—TH Arnold or equivalent, $L = -3.5 \text{ pF}$ at $f = 45 \text{ MHz}$.**Secondary:**

AWG No. 16 wire, 1 turn, symmetrically overwound on the primary. Adjust for 50Ω secondary load reflected as 15 k ohms (use RX meter or equivalent).

Stray Capacitance (C_s on I/C output terminals): = 2.0 pF to tune primary coil for 45 MHz with $B/V = 5.0 \text{ MHz}$.FIGURE 1 — 45-MHz POWER GAIN AND I_s TEST CIRCUIT



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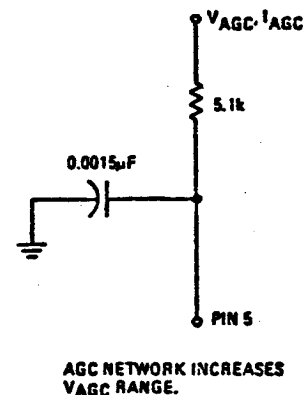
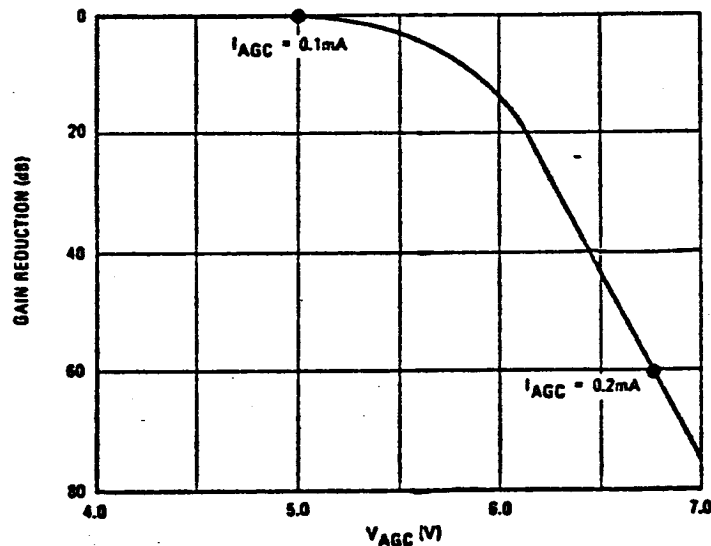
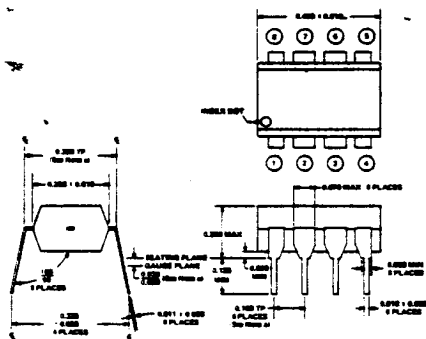


FIGURE 2 – TYPICAL GAIN REDUCTION versus AGC CONTROL VOLTAGE

8-PIN P PLASTIC DUAL-IN-LINE PACKAGE OUTLINE



NOTES:

- Each pin is within 0.005 radius of true position (TP) at the gauge plane with maximum material condition and unit installed.
- All dimensions are in inches unless otherwise noted.

