

## SN76600P MONOLITHIC TV VIDEO IF AMPLIFIER

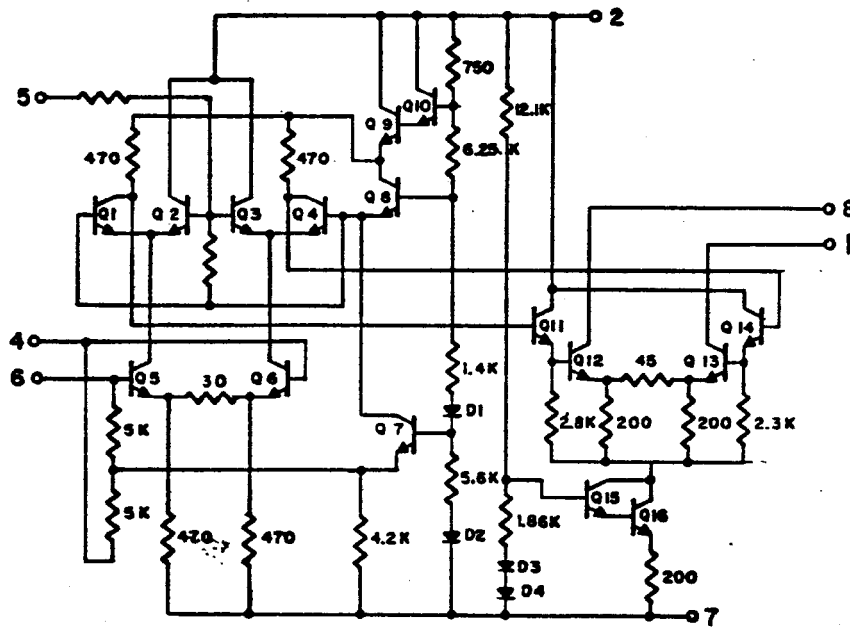
**PRELIMINARY**

### FEATURES:

CENTER FREQUENCY, F <sub>0</sub>	-	45MHz
BANDWIDTH, BW	-	6MHz
POWER GAIN	-	> 50dB
AGC RANGE	-	> 60dB
LOW REVERSE-TRANSFER ADMITTANCE	-	1.0 μMHO TYPICAL
NEARLY CONSTANT INPUT AND OUTPUT ADMITTANCE OVER THE ENTIRE AGC RANGE		
Y <sub>21</sub> 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



ORIK  
TL  
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**TEXAS INSTRUMENTS**  
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**SN76600P MONOLITHIC TV VIDEO IF AMPLIFIER**

 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	$V_{in}$	$\pm 7.0$	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)	$V_{AGC}$	-	5	-	Vdc
	$I_{AGC}$	-	0.1	-	mAdc
(60dB Attenuation)	$V_{AGC}$	-	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	$g_{11}$		1.0		mmho
Differential Output Admittance	$b_{11}$		2.8		
Differential Admittance Variation with AGC (0dB to 60dB)	$g_{22}$		0.07		mmho
	$b_{22}$		0.5		
Input Admittance	$g_{11}$		0.06		mmho
	$b_{11}$		0		
Output Admittance	$g_{22}$		0.004		mmho
	$b_{22}$		0.04		
( $Y_{21}$ ) (0dB AGC)			0.2		mho
Useable AGC Range in 45-MHz TV IF			>60		db



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APPLICATIONS:

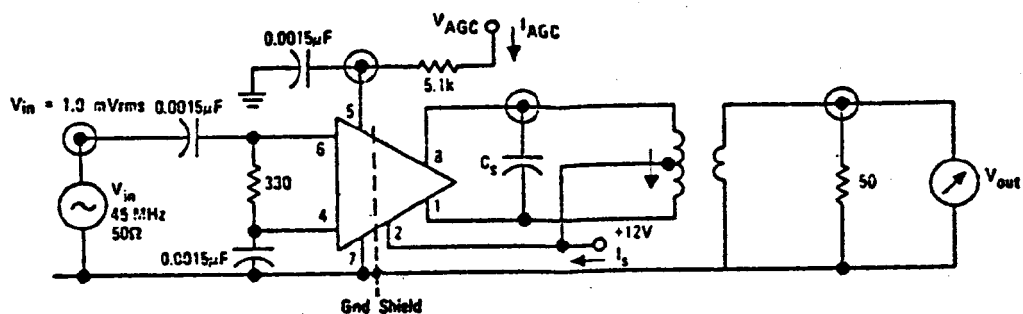
TV VIDEO IF

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  $50\Omega$  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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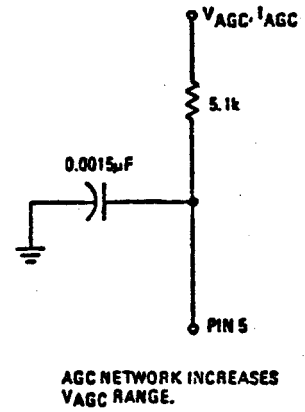
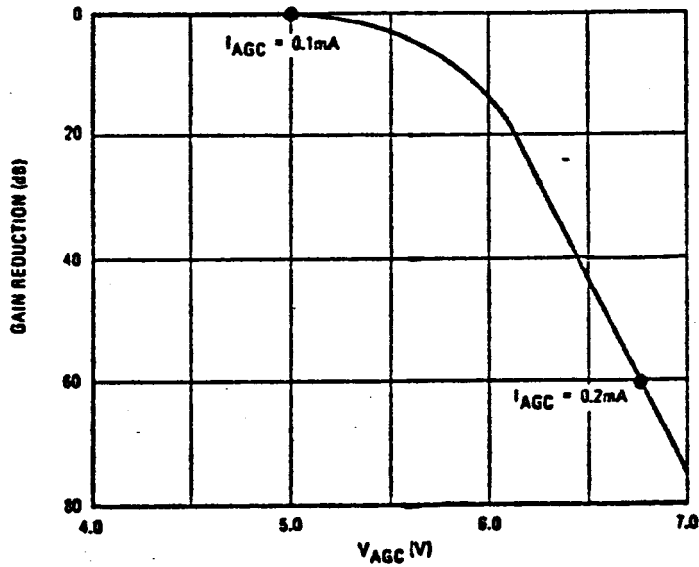
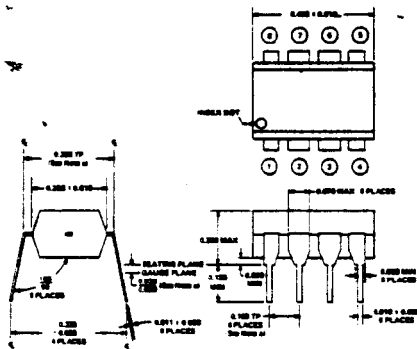


FIGURE 2 - TYPICAL GAIN REDUCTION versus AGC CONTROL VOLTAGE

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



**NOTES:**

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

