

Type	Ordering code	Package
TDA 5800	Q67000-A1777	DIP 22

The TDA 5800 contains a 4-stage broadband amplifier with controllable gain, a limiter, a synchronous demodulator for AM, an FM demodulator for generating the AFC voltage, and an AGC generator for the IF amplifier and tuner.

An external PNP transistor is required for a VTR connection according to the IEC standard.

Features

- Suitable for standard VTR connection
- Switchable AFC
- Fast control
- Positive and negative video output

Maximum ratings

Supply voltage	V_S	16.5	V
Junction temperature	T_j	150	°C
Storage temperature range	T_{stg}	-40 to 125	°C
Thermal resistance (system-air)	R_{thSA}	70	K/W

Operating range

Supply voltage	V_S	10 to 15.8	V
IF frequency	f_{IF}	15 to 75	MHz
Ambient temperature	T_A	0 to 70	°C

Characteristics

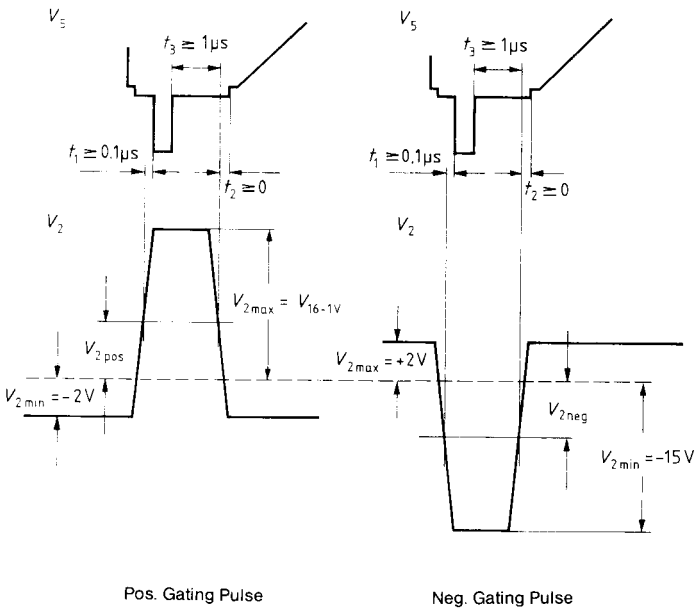
$V_S = 13 \text{ V}$; $T_A = 25^\circ \text{C}$

	min	typ	max	
Current consumption		I_{16}	60	mA
Stab. reference voltage		$V_{14/1}$	6.0	Vdc
Tuner control current		I_{17}	4.0	mA
Tuner AGC threshold		$V_{18/1}$	0	Vdc
Gating pulse voltage		$V_{2 \text{ pos}}$	-2.0	V
		$V_{2 \text{ neg}}$	-15.0	V
Input voltage at G_{max} ($V_{5 \text{ pp}} = 3 \text{ V}$)		$V_{22/21}$		μV
AGC range		ΔG	60	dB
IF control voltage for G_{max}		$V_{3/1}$	0	Vdc
IF control voltage for G_{min}		$V_{3/1}$		5.0 Vdc
IF control voltage for VTR switchover		$V_{3/1}$	8.0	V_{16} Vdc
AFC output current		I_9	± 1.0	mA
AFC switch OFF ($V_{11} = V_{12}$; $R = 10 \text{ k}\Omega$)		$V_{11/1}$	0	Vdc
AFC switch ON ($V_{11} = V_{12}$; $R = \infty$)		$V_{11/1}$	5.3	Vdc
AFC characteristics ($di/df > 0$)		$V_{15/1}$	3.0	V_{16} Vdc
AFC characteristics ($di/df < 0$)		$V_{15/1}$	0	Vdc
Video output voltage pos. ($R_L = \infty$)		V_{q5}	3.0	Vdc
Sync pulse level		$V_{5/1}$	2.0	Vdc
DC voltage ($V_3 = 5 \text{ V}$; $V_{22/21} = 0$)		$V_{5/1}$	5.3	Vdc
Output current to ground across R		I_{q5}	-5.0	mA
Output current (to +)		I_{q5}	2.0	mA
Output resistance		R_{q5}	150	Ω
Video output voltage neg. ($R_L = \infty$)		$V_{q6 \text{ pp}}$	3.0	V
Sync pulse level		$V_{6/1 \text{ pp}}$	$V_{16} - 2$	V
DC voltage ($V_3 = 5 \text{ V}$; $V_{22/21} = 0$)		$V_{6/1 \text{ pp}}$	$V_{16} - 5.3$	V
Output current to ground across R		I_{q6}	-5.0	mA
Output current (to +)		I_{q6}	1.0	mA
VTR output voltage neg.		$V_{q7 \text{ pp}}$	1.0	V
$R_L = \infty$; VTR recording				
Sync pulse level		$V_{7/1}$	$V_{16} - 1.2$	Vdc
$R_L = \infty$; VTR recording				
DC voltage		$V_{7/1}$	$V_{16} - 2.3$	Vdc
$V_3 = 5 \text{ V}$; $V_{22/21} = 0$				
DC voltage		$V_{7/1}$	$V_{16} - 0.9$	Vdc
$V_3 \geq 8 \text{ V}$; VTR playback				
Output current		I_{q7}	-5.0	mA
to ground across R				
Output current (to +)		I_{q7}	1.0	mA
Video amplifier VTR playback		V	3.0	
$V = V_5/V_5$; $V_3 = 1 \text{ V}_{\text{pp}}$				

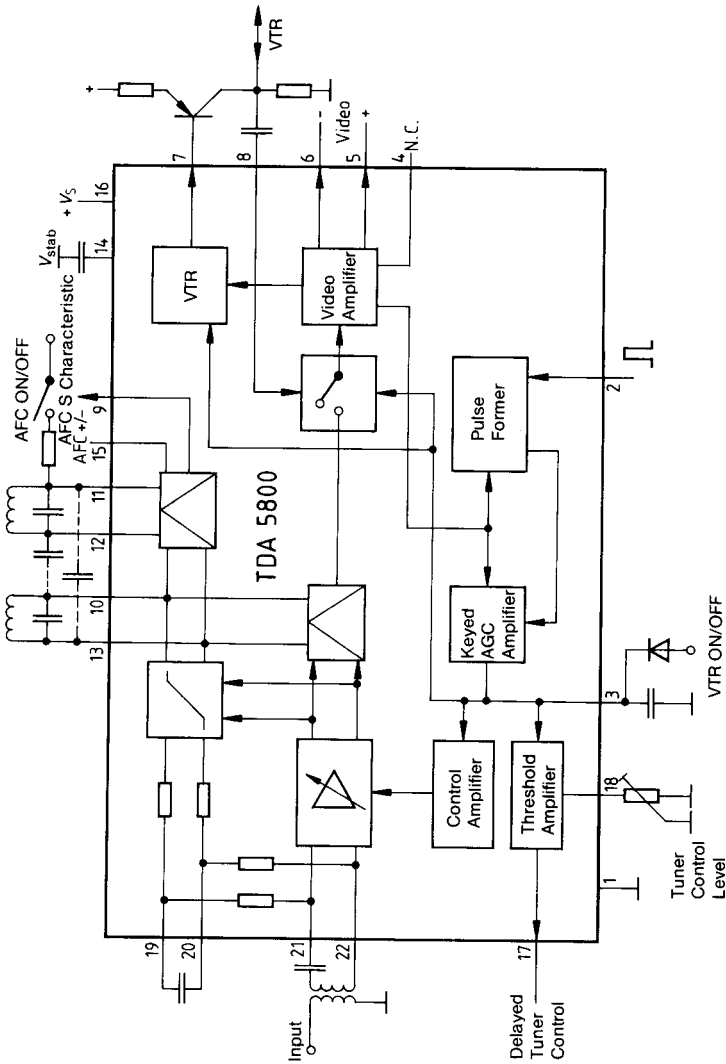
Additional application data
(not measured)

		min	typ	max	
Input impedance	$Z_{i\ 22/21}$		1.8/2		k Ω /pF
Output impedance	$Z_{q\ 10/13}$		6.6/2		k Ω /pF
AFC input impedance	$Z_{i\ 11/12}$		20		k Ω
Output resistance	$R_{q\ 6}$		150		Ω
Output resistance	$R_{q\ 7}$		150		Ω
Residual IF (basic frequency)	V_{5^+}, V_6		10		mV
Video bandwidth (-3 dB) VTR recording	B_{video}		6.0		MHz
Video bandwidth (VTR recording $V_{8\ \text{pp}} = 1\ \text{V}$)	B_{video}		10.0		MHz
Intermodulation ratio with reference to f_{CC} (sound-color-beat frequency)	a		45		dB

Pulse diagram



Block diagram and measurement circuit



Application circuit

