

Video Switch

TDA 5850

Bipolar IC

Features

- Standard connection for VTR (CCIR) and Peri TV sets
- Input clamping
- Positive and negative video outputs

The TDA 5850 is a switchable video amplifier with connections for the French and IEC VTR standards.

Type	Ordering Code	Package
TDA 5850	Q67000-A1775	P-DIP-8

Maximum Ratings

Parameter	Symbol	Limit Values	Unit
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)	$R_{th SA}$	70	K/W

Operating Range

Supply voltage	V_S	10 to 15.8	V
Video bandwidth	B_{video}	6	MHz
Ambient temperature	T_A	0 to 70	°C

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

Parameter	Symbol	Limit Values			Unit
		min.	typ.	max.	
Current consumption (pin 2 open)	I_7		23.0		mA
Switch input VTR recording	$V_{3/1}$	0		1.2	Vdc
Switch input VTR playback	$V_{3/1}$	3.0		V_7	Vdc
Switch input $V_{3/1} = 15 \text{ V}$	I_3			1.0	mA
Video output voltage pos. $V_3 = 1.2 \text{ V}$; $V_{8 \text{ pp}} = 3 \text{ V}$	$V_{Q5 \text{ pp}}$		3.0		V
Video output voltage pos. $V_3 \geq 3 \text{ V}$; $V_{4 \text{ pp}} = 1 \text{ V}$	$V_{Q5 \text{ pp}}$		3.0		V
Sync pulse level	$V_{5/1}$		2.0		V
Output current (to ground)	I_{Q5}		- 5.0		mA
Output current (to +)	I_{Q5}		2.0		mA
Output resistance	R_{Q5}		150		Ω
Video output voltage neg. $V_3 = 1.2 \text{ V}$; $V_{8 \text{ pp}} = 3 \text{ V}$	V_{Q6}		3.0		V
Video output voltage neg. $V_3 \geq 3 \text{ V}$; $V_{4 \text{ pp}} = 1 \text{ V}$	$V_{Q6 \text{ pp}}$		3.0		V
Sync pulse level	$V_{6/1}$		$V_7 - 2$		V
Output current (to ground)	I_{Q6}		- 5.0		mA
Output current (to +)	I_{Q6}		1.0		mA
Output resistance	R_{Q6}		150		Ω
Video output voltage pos. $V_{8 \text{ pp}} = 3 \text{ V}$; $R_{2/1} = 75 \text{ } \Omega$	$V_{Q2 \text{ pp}}$		1.0		V
Sync pulse level $R_{2/1} = 75 \text{ } \Omega$	$V_{2/1}$		1.0		V
Output current (to ground)	I_{Q2}		- 30.0		mA
Output current (to +)	I_{Q2}		2.0		mA
Output resistance	R_{Q2}		75		Ω
Video input current ($V_{8 \text{ pp}} = 3 \text{ V}$)	I_{18}			40	μA
Video input current ($V_{4 \text{ pp}} = 1 \text{ V}$)	I_{14}			20	μA
Video gain ($V_{8 \text{ pp}} = 3 \text{ V}$; $R_{2/1} = 75 \text{ } \Omega$)	$G_{2/8}$		1/3		
Video gain ($V_{8 \text{ pp}} = 3 \text{ V}$; $V_3 = 1.2 \text{ V}$)	$G_{5/8}$		1		
Video gain ($V_{8 \text{ pp}} = 3 \text{ V}$; $V_3 = 1.2 \text{ V}$)	$G_{6/8}$		- 1		
Video gain ($V_{4 \text{ pp}} = 1 \text{ V}$; $V_3 \geq 3 \text{ V}$)	$G_{5/4}$		3		
Video gain ($V_{4 \text{ pp}} = 1 \text{ V}$; $V_3 \geq 3 \text{ V}$)	$G_{6/4}$		- 3		
Video bandwidth (- 3 dB)	B_{video}	6.0			MHz
Cross-talk rejection referred to $V_{5 \text{ pp}} = 3 \text{ V}$ $f = 50 \text{ Hz} \dots 6.0 \text{ MHz}$; $V_3 = 1.2 \text{ V}$; $V_{4 \text{ pp}} = 1 \text{ V}$	α		50		dB

Block Diagram, Measurement Circuit and Application Circuit

