

## 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		$\Omega$
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		$\Omega$
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		$\Omega$
Video input current ( $V_{8\text{pp}} = 3\text{ V}$ )	$I_{18}$			40	$\mu\text{A}$
Video input current ( $V_{4\text{pp}} = 1\text{ V}$ )	$I_{14}$			20	$\mu\text{A}$
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)	$B_{\text{video}}$	6.0			MHz
Cross-talk rejection referred to $V_{5\text{pp}} = 3\text{ V}$ $f = 50\text{ Hz} \dots 6.0\text{ MHz}$ ; $V_3 = 1.2\text{ V}$ ; $V_{4\text{pp}} = 1\text{ V}$	$\alpha$		50		dB

## Block Diagram, Measurement Circuit and Application Circuit

