

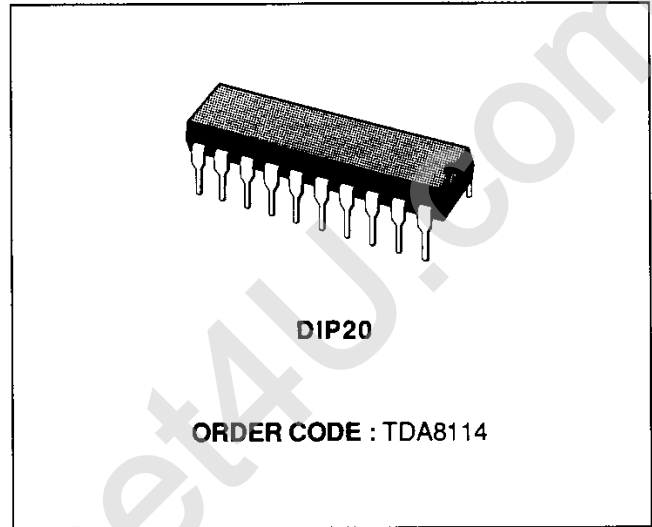
**VCR PROCESSOR INTERFACE CIRCUIT**

ADVANCE DATA

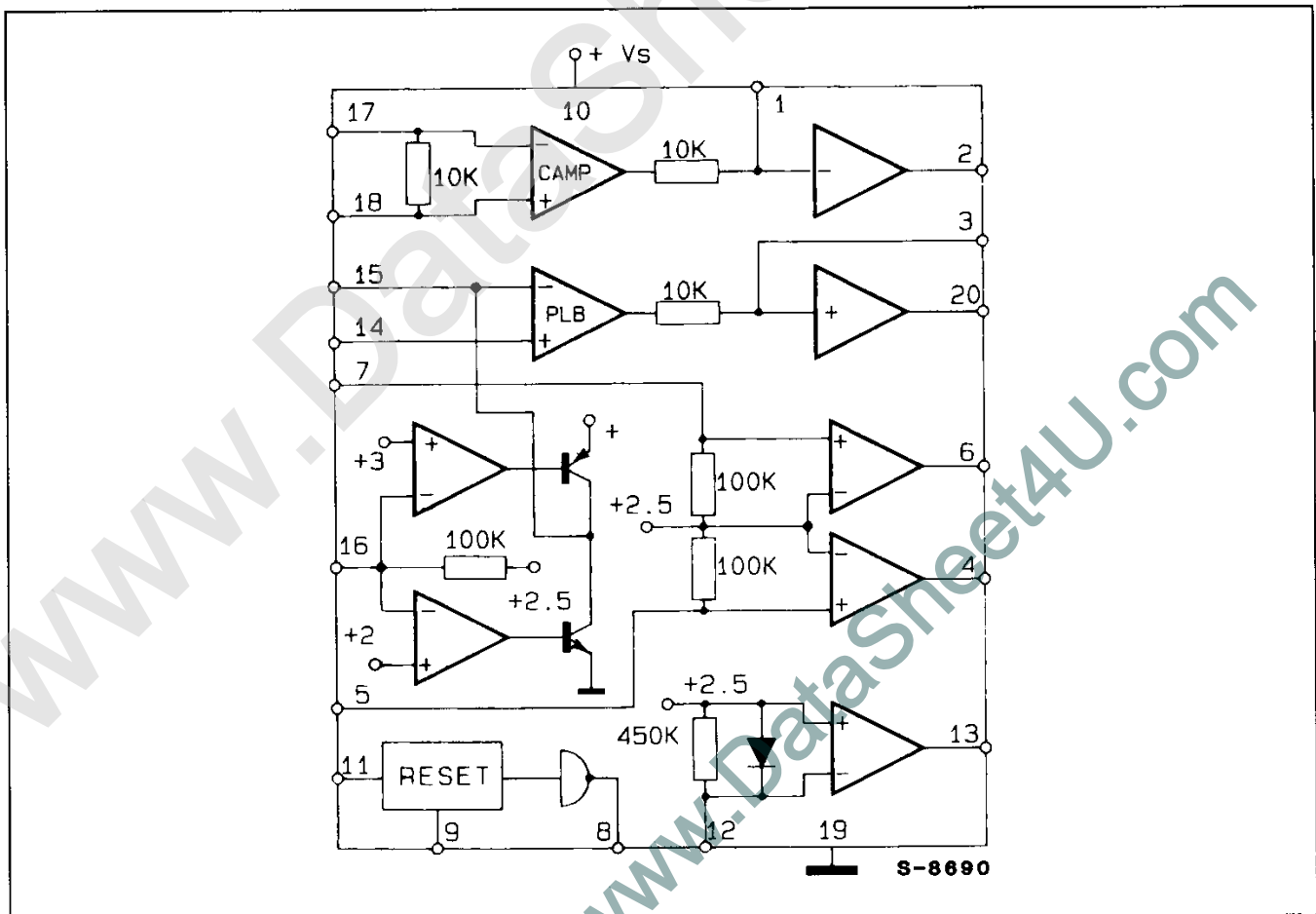
- CAPSTAN TACHO AMPLIFIER WITH OC OUTPUT
- CTL-PLAYBACK AMPLIFIER WITH OC OUTPUT
- CTL-RECORD AMPLIFIER WITH OC INPUT
- REEL TACHO AMPLIFIER WITH OC OUTPUT
- DRUM POSITION DETECTOR WITH OC OUTPUT + INTERNAL PULL UP RESISTOR
- RESET GENERATOR

**DESCRIPTION**

The TDA 8114 is a monolithic integrated circuit for VCR-applications. It is intended to convert signals from optical and magnetical sensors to  $\mu$ P TTL-level. A special circuit includes a supply voltage supervisor and generates a reset signal for  $\mu$ -Processor.



**BLOCK DIAGRAM**



**ABSOLUTE MAXIMUM RATINGS**

Symbol	Parameter	Value	Unit
V <sub>S</sub>	DC Supply Voltage	10	V
V <sub>i</sub>	DC Input Voltage	7	V
V <sub>O</sub>	Open Collector Output Voltage (all outputs high)	15	V
T <sub>op</sub>	Operating Junction Temperature	0 to 85	°C
T <sub>stg</sub>	Storage Temperature	- 55 to 125	°C

**THERMAL DATA**

R <sub>th j-amb</sub>	Thermal Resistance Junction-ambient	Max	100	°C/W
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**PIN NAMES**

N°	Name
1	Capstan Tacho Amplifier Output and Low Pass Filter
2	Capstan Tacho Amplifier OC Output
3	CTL Amplifier Output and Low Pass Filter
4	Reel Tacho OC Output
5	Reel Tacho Sensor Input
6	Reel Tacho OC Output
7	Reel Tacho Sensor Input
8	Reset Open Collector Output with Internal Pull Up
9	Reset Delay Time Capacitor
10	Supply Voltage
11	Reset Supply Voltage Store
12	Drum Position Sensor Input
13	Drum Position Open Collector Output with Internal Pull-up Resistor
14	CTL Tacho Reference Voltage
15	CTL Tacho Amplifier Input
16	CTL Record Amplifier TTL Input
17	Capstan Tacho Amplifier Input
18	Capstan Tacho Reference Voltage
19	Ground
20	CTL Playback Amplifier OC Output

**ELECTRICAL CHARACTERISTICS** ( $T_{amb} = 25^{\circ}\text{C}$ , unless otherwise specified  $V_S = 5\text{V}$ )

Symbol	Parameter	Pin	Test Conditions	Min.	Typ.	Max.	Unit
$V_S$	Supply Voltage Operation Range	10		4.5		6	V
$I_S$	Supply Current	10					mA

**CAPSTAN TACHO AMPLIFIER**

Symbol	Parameter	Pin	Test Conditions	Min.	Typ.	Max.	Unit
$R_i$	Input Resistance	17			10		$\text{K}\Omega$
$V_R$	Capstan Reference Voltage	18			2.5		V
$V_i$	AC-tacho Input Voltage	17	f Input 50 to 2500Hz	150			$\mu\text{V}_{\text{rms}}$
$R_F$	Filter Output Impedance	1			10		$\text{K}\Omega$
$V_{\text{sat}}$	Output Saturation Voltage	2	Low State $I_T = 1.8\text{mA}$			0.4	V
$V_O$	Output Voltage	2	High State $I_T = 0\text{mA}$			15	V

Negative slope of output signal pin T yields to zero crossing of input signal  
Input to output phase relation is non invert.

**CTL-PLAYBACK AMPLIFIER**

Symbol	Parameter	Pin	Test Conditions	Min.	Typ.	Max.	Unit
$R_i$	Input Resistance	15		100			$\text{K}\Omega$
$V_R$	CTL-Reference Voltage	14			2.5		V
$V_i$	Synchronous Peak Input Voltage	15	Pos. plus detected	200			$\mu\text{V}$
$R_F$	Filter Output Impedance	3			10		$\text{K}\Omega$
$V_{\text{sat}}$	Output Saturation Voltage	20	Low State $I_R = 1.8\text{mA}$			0.4	V
$V_O$	Output Voltage	20	High State $I_R = 0$			15	V

Input to output phase relations is invert.

**CTL-RECORD AMPLIFIER**

Symbol	Parameter	Pin	Test Conditions	Min.	Typ.	Max.	Unit
$R_i$	Input Resistance	16	$V_i$ between $V_S$ and GND		100		$\text{K}\Omega$
$V_R$	Input Reference Voltage	16	Pin Open		2.5		V
$V_i$	Input Threshold for Output High State	16			3		V
$V_{iL}$	Input Threshold for Output Low State	16			2		V
$V_{\text{sat L}}$	Output Saturation Voltage Low State	15	$V_O = L$ ( $I_{\text{sink}} 5\text{mA}$ )			0.4	V
$V_{\text{sat H}}$	Output Saturation Voltage	15	$V_O = H$ ( $I_{\text{source}} 5\text{mA}$ )			3.5	V

Input to output phase relation is non invert.

## ELECTRICAL CHARACTERISTICS (continued)

## REEL-TACHO AMPLIFIER

Symbol	Parameter	Pin	Test Conditions	Min.	Typ.	Max.	Unit
$R_i$	Input Resistance	5/14		100			K $\Omega$
$V_R$	Input Reference Voltage	5/14			2.5		V
$V_i$	AC-tacho Input Voltage	5/14	$f = 1\text{Hz to } 5\text{KHz}$	1			$V_{pp}$
$V_{sat}$	Output Saturation Voltage	4/6	Low State $I_{O/P} = 1.8\text{mA}$			0.4	V
$V_O$	Output Voltage	4/6	High State $I_{O/P} = 0$			15	V

Input to output phase relation is no invert.

## DRUM TACHO AMPLIFIER

Symbol	Parameter	Pin	Test Conditions	Min.	Typ.	Max.	Unit
$R_i$	Input Resistance	12	$V_{IN}$ between 1 and 7V		450		K $\Omega$
$V_R$	Input Reference Voltage	12			2.5		V
$V_{ic}$	Input Clamping Voltage	12	Sink Current 100 $\mu\text{A}$		$V_R - 0.6$		V
$V_{IP}$	Input Peak Voltage	12				8	V
$V_{sat}$	Output Saturation Voltage	13	Low State $I_N = 1.8\text{mA}$			0.4	V
$V_O$	Output Voltage	13	High State $I_N = 0$			15	V
$V_i$	AC-tacho Input Voltage	12		1			$V_{pp}$

Input to output phase relation is non invert.

## RESET GENERATION

Symbol	Parameter	Pin	Test Conditions	Min.	Typ.	Max.	Unit
$V_S$	Reset Supply Voltage	11			$V_S - 0.6$		V
$V_{SR}$	Reset Supply Voltage Operation Range	11		3		$V_S$	V
$I_R$	Reset Supply Current	11			2		mA
$I_C$	Charging Current	9			25		$\mu\text{A}$
$I_{DC}$	Discharging Current	9	$U_K = 2\text{V}$ Discharging current is present for $V_S < V_{sens}$		2.5		mA
$V_{sen}$	Reset Sense Voltage	10		4.5	4.6	4.7	V
$V_{CH}$	Comparator High Threshold	9	Output Low to High		2		V
$V_{CL}$	Comparator Low Threshold Output open Collector with Intervall Pull up Resistor	9	Output High to Low		3		V
$V_{sat}$	Output Saturation Voltage	8	Low State $I_M = 1.8\text{mA}$			0.4	V

## OPTIONAL OUTPUT (push-pull)

Symbol	Parameter	Pin	Test Conditions	Min.	Typ.	Max.	Unit
$V_{sat}$	Output Saturation Voltage	8	Low State $I_M = 1.8\text{mA}$			0.4	V
$V_{sat}$	Output Saturation Voltage	8	High State $I_M = 1.8\text{mA}$	3.5			V