

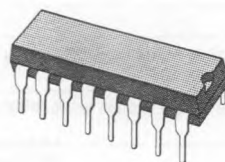
VIDEO HEAD SERVO CONTROLLER

- WIDE OPERATING VOLTAGE RANGE 6V to 14V
- HIGH CURRENT CAPABILITY UP TO 1A
- OUTPUT DC CURRENTS UP TO 0.4A
- TWO LOGICAL INPUTS FOR THE CODED COMMUNICATION SIGNAL
- LIMITED SLEW RATE OF THE OUTPUT VOLTAGE
- ANALOG INPUT WITH FIXED VOLTAGE GAIN
- INTEGRATED FLYBACK DIODES AT EACH OUTPUT
- THERMAL PROTECTION

DESCRIPTION

The TDA8116 is a monolithic integrated circuit in bipolar technology.

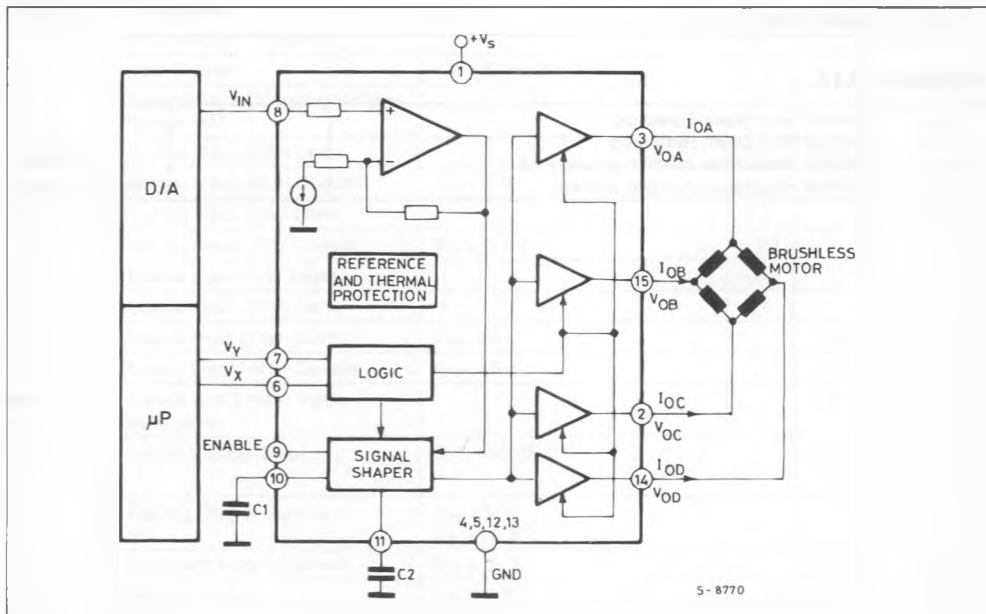
It is intended for driving a four phase brushless video head motor in microcomputer controlled servo systems.



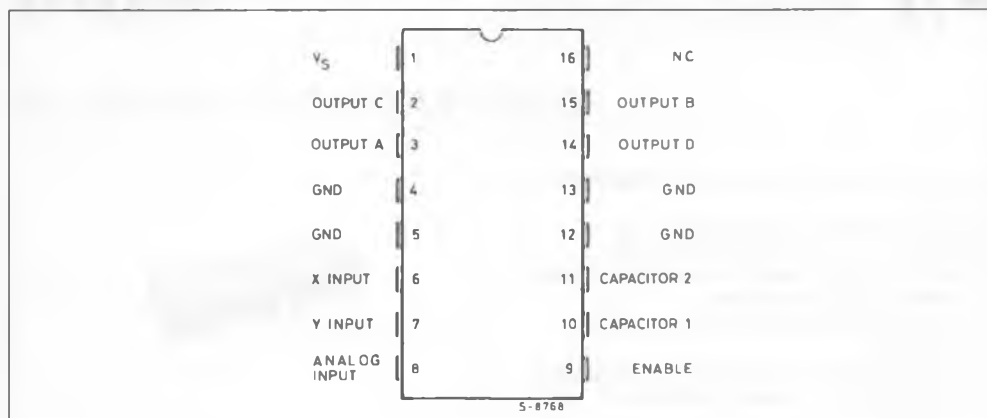
Powerdip
12 + 2 + 2

ORDER CODE : TDA8116

BLOCK DIAGRAM



CONNECTION DIAGRAM (top view)



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_S	Supply Voltage	- 0.3 to 18	V
I_O	Output Current DC	± 0.4	A
I_O	Pulse Output Current (during start)	± 1	A
T_{JOP}	Operating Junction Temperature	0 to 150	°C
T_{slg}	Storage Junction Temperature	- 40 to 150	°C
$V_{EN, IN, X, Y}$	Input Voltage	- 0.3 to 7	V
P_{tot}	Power Dissipation at $T_{case} = 80$ °C	5	W

THERMAL DATA

T_{JSTD}	Thermal Shut Down Threshold	150	°C
T_{JSDH}	Thermal Shut Down Hysteresis	20	°C
$R_{th j-case}$	Thermal Resistance Junction-ground Pins	14	°C/W
$R_{th j-amb}$	Thermal Resistance Junction-ambient	80	°C/W

PIN FUNCTION

N°	Name	Function
1	V _S	Supply Voltage Connection
2	OUTC	Push-pull Type Output for the C Phase
3	OUTA	Push-pull Type Output for the A Phase
4, 5, 12, 13	GND	Ground Connection
6	X INPUT	Commutation Signal X Input
7	Y INPUT	Commutation Signal Y Input
8	INPUT	Analog Control Signal Input
9	ENABLE	Enable input, with low level (< 1.5 V) at this pin the device outputs are set into TRISTATE.
10, 11	CAPACITOR 1, 2	The shaping capacitors at these pins define the output signal shape of the A, C and B, D outputs respectively.
14	OUTD	Push-pull Type Output for the D Phase
15	OUTB	Push-pull Type Output for the B Phase
16	N.C.	No Connection at this Pin

ELECTRICAL CHARACTERISTICS (6 V < V_S < 14 V, T_J = 25 °C, unless otherwise specified))

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V _{SOP}	Operating Supply Voltage Range		6		14	V
V _{SO}	Source Stage Saturation Voltage	V _{IN} = 5 V I _O = 0.4 A		1.4 1	2 1.4	V V
V _O	Sink Stage Saturation Voltage	V _{IN} = 5 V I _O = 0.4 A		1.4 1	2 1.4	V V
A _V	Voltage Gain	V _{IN} = 1 V R _L = 50 Ω	2.5	2.75	3.0	V
V _{INth}	Input Voltage Threshold		0.6	0.7	0.8	V
I _N	Input Current	V _{IN} = 5 V	- 5	- 1	+ 5	μA
V _{IN}	Input Voltage Operating Voltage Range		0		V _S - 1	V
V _{X,Y High}	Control Input HIGH Level		1.7	2.4	7	V
I _{X,Y High}	Control Input HIGH Current	V _{IN} = 5 V			20	μA
V _{X,Y Low}	Control Input LOW Level		0.3		0.8	V
I _{X,Y Low}	Control Input LOW Current	V _{IN} = 0.4 V	- 20		20	μA
V _{EN Low}	Enable Input LOW Level		- 0.3		1.5	V
V _{EN High}	Enable Input HIGH Level		2.4		7	V
I _{EN Low}	Enable Input LOW Current	V _{EN} = 0 V		- 20	- 40	μA
I _{EN High}	Enable Input HIGH Current	V _{EN} = 5 V		1		μA
VH _{X,Y,EN}	Control and Enable Inputs Hysteresis			150		mV
$\frac{dV_{out}}{dt}$	Output Voltage Slope	C _{1,2} = 10 nF		6		V/ms
I _{OST}	Starting Output Current	V _{IN} = 5 V V _S = 12 V			1	A
I _S	Quiescent Supply Current	V _{IN} = 0		3	5	mA
I _S	Supply Current	V _{IN} = 5 V		8	15	mA

TYPICAL WAVEFORMS

