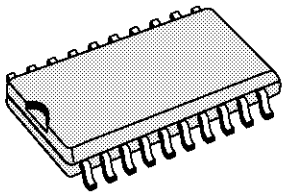
SGS-THOMSON MICROELECTRONICS

TDA8118

CONTROL HEAD PLAYBACK & RECORD AMPLIFIER AND SIGNALS INTERFACE

- CONTROL HEAD PLAYBACK AMPLIFIER WITH AGC
- CONTROL HEAD RECORD AMPLIFIER WITH SINK/SOURCE OUTPUT STAGE
- CONTROL PLAY-BACK SIGNAL INVERTER
- 4 COMPARATORS WITH INTERNAL FIXED THRESHOLD (2.5V)
- COMPARATORS WITH GROUND/V_S COMPATIBLE INPUTS AND OPEN COLLECTOR OUTPUTS



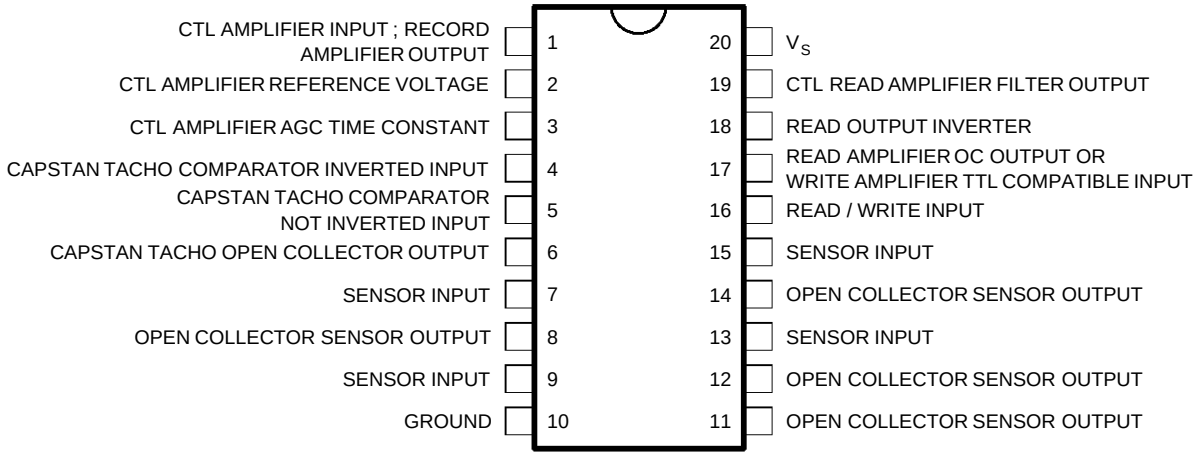
SO20 LARGE
(Plastic Micropackage)

ORDER CODE : TDA8118D

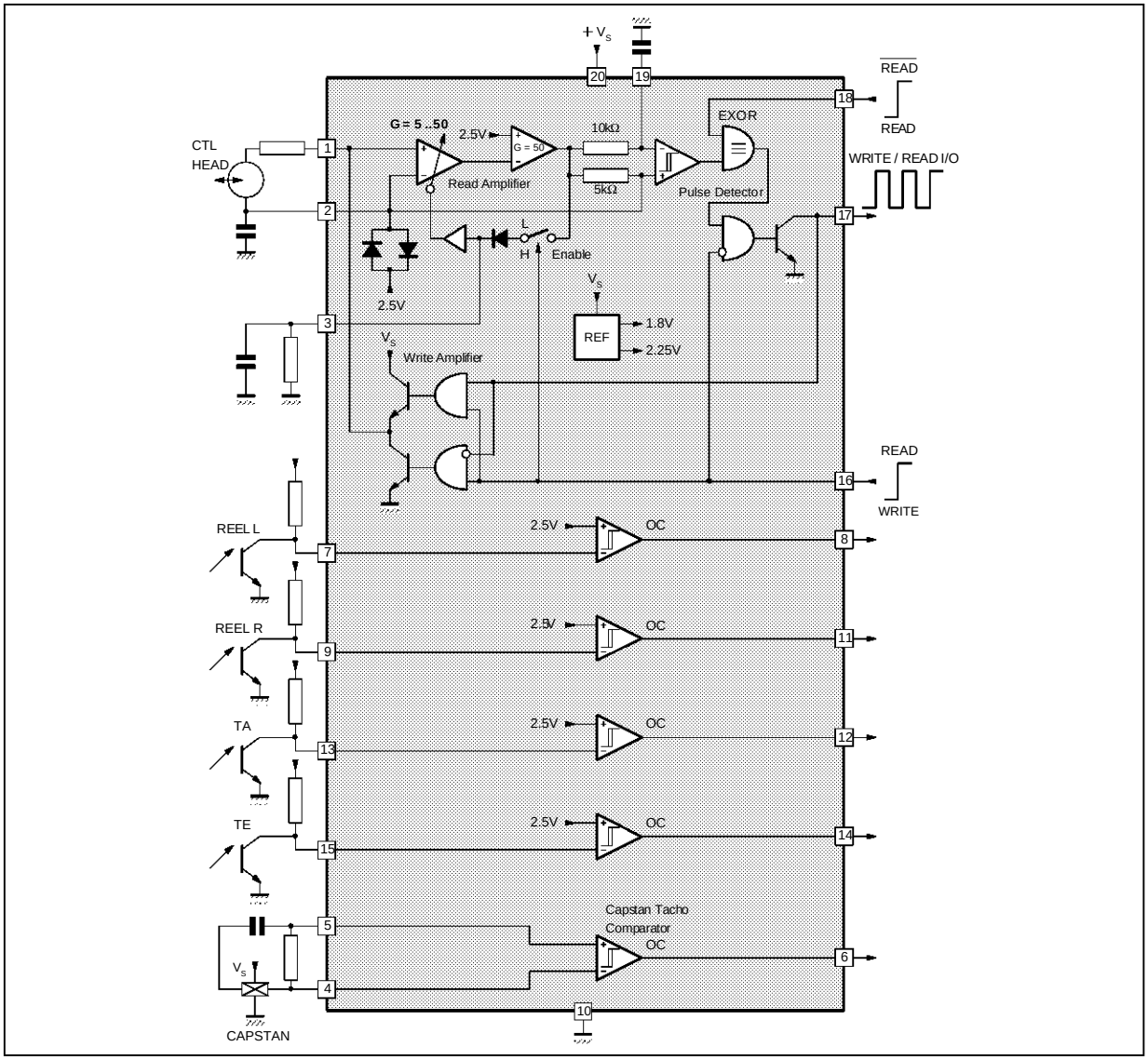
DESCRIPTION

The TDA8118 is a bipolar integrated circuit for VCR application. It is intended to process the CTL-signal in record and playback mode. An internal AGC provides a wide range of input signal level. 5 further internal hysteresis comparators are intended to convert signals from optical and hall sensors to TTL-level.

PIN CONNECTIONS



BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_S	DC Supply Voltage	14	V
V_i	DC Iput Voltage	- 0.3 to V_S	V
V_o	DC Output Voltage	V_S	V
I_o	Open Collector Output Current	5	mA
T_{stg}	Storage Temperature	-55 to 125	^oC
T_j	Operating Junction Temperature	0 to 85	^oC

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Note : The circuit is ESD protected according to MIL-STD-883C

THERMAL DATA

Symbol	Parameter	Value	Unit
Rth(j-a)	Junction-ambient Thermal Resistance	70	$^oC/W$

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ELECTRICAL CHARACTERISTICS

V_S = 5V ±5%, T_{amb} = 25°C (unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_S	Operating Supply Voltage (Pin 20)		4.5		6	V
I_S	Supply Current (Pin 20)	Pins 6, 8, 11, 12, 14, 16, 17 open			5	mA
CTL READ AMPLIFIER						
V_{REF}	CTL Reference Voltage (Pin 2)		2.1	2.25	2.4	V
R_{IN}	Input Resistance (Pin 1)		100			kΩ
G_V	Voltage Gain (Pins 1/19)	AGC not active, Pin 3 = GND, f = 1kHz	66			dB
ΔG_V	Voltage Gain range of AGC (Pins 1/19)	f = 1kHz, R_S = 220kΩ, C_3 = 33µF		18		dB
R_F	Filter Output Impedance (Pin 19)		7	10	13	kΩ
V_{IN}	Minimum Peak Input Voltage (Pin 1)		0.5			mV
CTL PULSE DETECTOR						
I_H+	Positive Schmitt Trigger Threshold (Pins 17/19)	See timing diagram		V_Z + 0.5		V
I_H-	Negative Schmitt Trigger Threshold (Pins 17/19)	See timing diagram		V_Z - 0.5		V
V_{SAT}	Output Saturation Voltage (Pin 17)	V_{17} = Low, I_{17} = 1.8mA			0.4	V
I_C	Output Leakage Current (Pin 17)	V_{17} = V_S			10	µA
V_{REL}	Read Inverter Input Low Voltage (Pin 18)		-0.3		1.5	V
V_{REH}	Read Inverter Input High Voltage (Pin 18)		2.3		V_S	V
CTL WRITE AMPLIFIER						
V_{RWL}	Read/Write Enable Input Low Voltage (Pin 16)		-0.3		1.5	V
V_{RWH}	Read/Write Enable Input High Voltage (Pin 16)		2.3		V_S	V
V_{WRL}	Write Input Low Voltage (Pin 17)	Pin 16 = Low	-0.3		1.5	V
V_{WRH}	Write Input High Voltage (Pin 17)	Pin 16 = Low	2.3		V_S	V
V_{SATL}	Output Saturation Voltage Low State (Pin 1)	I_{SINK} = 5mA, Pin 16 = Low, Pin 17 = Low			0.4	V
V_{SATH}	Output Saturation Voltage High State (Pin 1)	Pin 16 = Low, Pin 17 = High I_{SOURCE} = 5mA I_{SOURCE} = 2mA			 1.5 1.3	 V V
SENSOR INTERFACE						
I_{IN}	Input Bias Current (Pins 7/9, 13/15)	V_{IN} = 1V	-3		1	µA
I_{TH}	Input Threshold Voltage (Pins 7/9, 13/15)		2.1	2.25	2.4	V
I_{HYS}	Input Hysteresis (Pins 7/9, 13/15)		150	200	250	mV
V_{SAT}	Output Saturation Voltage (Pins 8/11/12/14)	I_{SINK} = 1.8mA			0.4	V
I_L	Output Leakage Current (Pins 8/11/12/14)	V_{OUT} = V_S			10	µA
CAPSTAN TACHO COMPARATOR						
I_{IN}	Input Bias Current (Pins 4/5)	V_{IN} = Low	-3		1	µA
V_{OFF}	Input Offset Voltage (Pins 4/5)				5	mV
I_{HYS}	Input Hysteresis (Pins 4/5)			5	10	mV
V_{SAT}	Output Saturation Voltage (Pin 6)	I_{SINK} = 1.8mA			0.4	V
I_{LEAK}	Output Leakage Current (Pin 6)	V_{OUT} = V_S			10	µA

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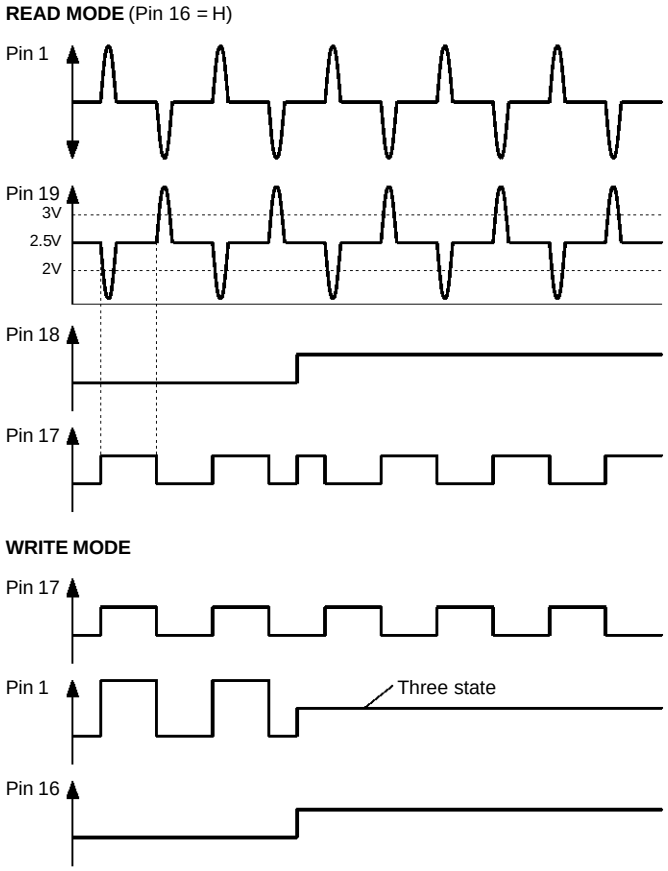
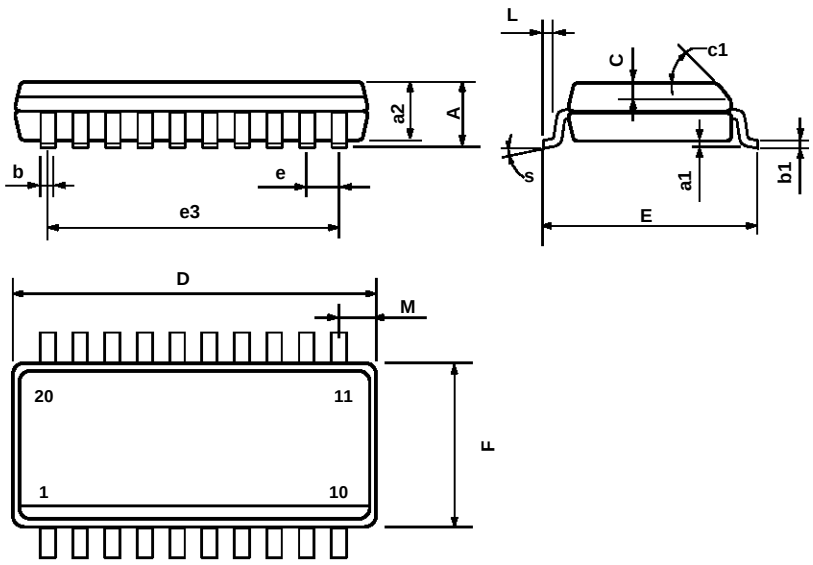
TIMING DIAGRAM



PACKAGE MECHANICAL DATA

20 PINS - PLASTIC MICROPACKAGE



PM-SO20L.EPS

Dimensions	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A			2.65			0.104
a1	0.1		0.2	0.004		0.008
a2			2.45			0.096
b	0.35		0.49	0.014		0.019
b1	0.23		0.32	0.009		0.013
C		0.5			0.020	
c1	45^o (typ.)					
D	12.6		13.0	0.496		0.510
E	10		10.65	0.394		0.419
e		1.27			0.050	
e3		11.43			0.450	
F	7.4		7.6	0.291		0.300
L	0.5		1.27	0.020		0.050
M			0.75			0.030
S	8^o (max.)					

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