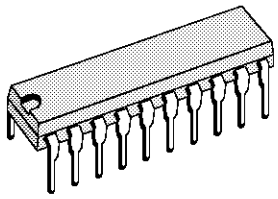
SGS-THOMSON MICROELECTRONICS

STV5718

CONTROL HEAD PLAYBACK & RECORD AMPLIFIER AND SIGNALS INTERFACE

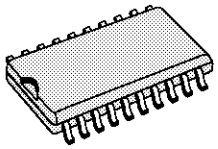
PRELIMINARY DATA

- CONTROL HEAD PLAYBACK AMPLIFIER WITH AUTOMATIC GAIN CONTROL AND SIGNAL CONDITIONNING
- CONTROL HEAD RECORD AMPLIFIER WITH SINK AND SOURCE OUTPUT STAGE
- REWRITE OPERATION TO CHANGE THE DUTY OF THE CONTROL SIGNAL
- 4 COMPARATORS WITH INTERNAL FIXED THRESHOLD
- CAPSTAN TACHO COMPARATOR
- EASY INTERFACE TO STANDARD MICRO-CONTROLLERS



DIP20
(Plastic Package)

ORDER CODE : STV5718



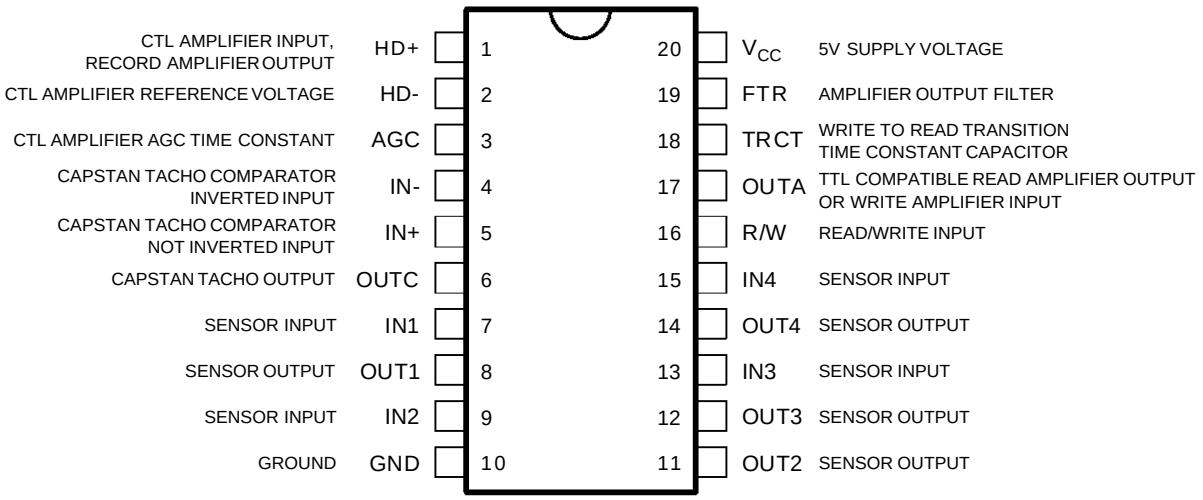
SO20 LARGE
(Plastic Package)

ORDER CODE : STV5718D

DESCRIPTION

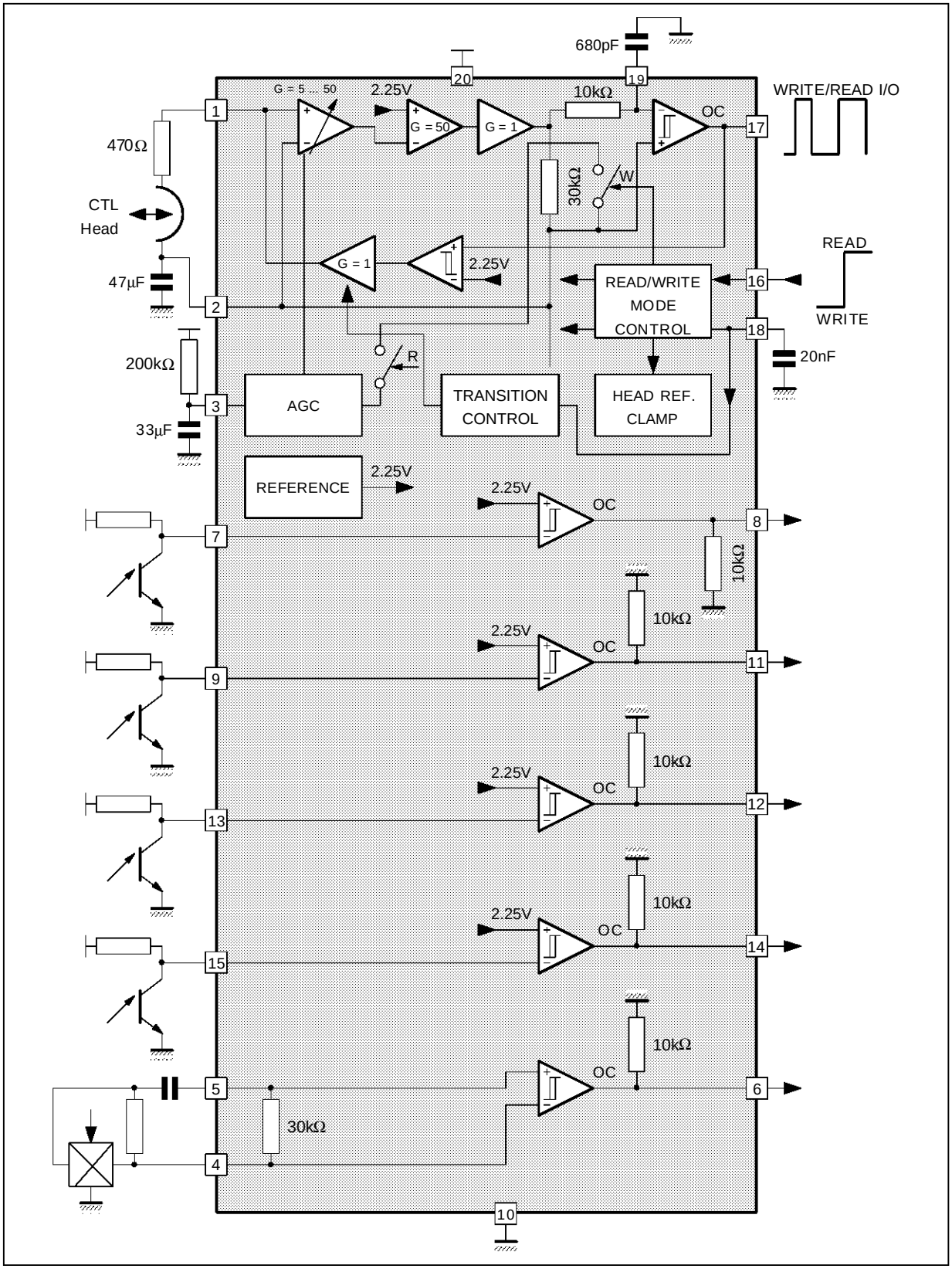
The STV5718 is a bipolar circuit for VCR application. It is intended to process the CTL-signal in record and playback mode. An internal AGC provides a wide range of input signal level. 5 internal comparators are intended to convert signals from optical and hall sensors to TTL-levels.

PIN CONNECTIONS



5718-01.EPS

BLOCK DIAGRAM



5718-02.EPS

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CC}	Supply Voltage	10	V
V_I	DC Input Voltage	-3, V_{CC}	V
V_O	DC Output Voltage	V_{CC}	V
I_O	Open Collector Output Current	5	mA
T_{oper}	Operating Temperature	0, +70	$_o$C
T_{stg}	Storage Temperature	-55, +150	^{o}C

5718-01.TBL

THERMAL DATA

Symbol	Parameter			Value	Unit
$R_{th\ (j-a)}$	Junction-ambient Thermal Resistance	SO20 DIP20	Max. Max.	120 70	oC/W ^{o}C/W

5718-02.TBL

ELECTRICAL CHARACTERISTICS

V_{CC} = 5V ±5%, T_{amb} = 25^{o}C, unless otherwise specified

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_{CC}	Operating Supply Voltage (Pin 20)		4.75	5	5.5	V
I_{CC}	Supply Current (Pin 20)	- Pins 4-7-9-13-15-19 low - Pins 5-16 high		8.4		mA
P_D	Total Power Dissipation			42		mW
CTL READ AMPLIFIER						
V_{REF}	CTL Reference Voltage (Pin 2)			2.20		V
R_{IN}	Input Resistance (Pin 1)			6.7		kΩ
G_V	Voltage Gain (Pins 1-19)	AGC not active, Pin 3 > 3.3V, f = 1kHz	66			dB
R_F	Filter Outpiut Impedance (Pin 19)		7	10	13	kΩ
V_{IN}	Peak Input Voltage (Pin 1)		0.5			mV
CTL PULSE DETECTOR						
I_H+	Positive Threshold (Pins 17-19)			2.75		V
I_H-	Negative THreshold (Pins 17-19)			1.65		V
V_{SAT}	Output Saturation Voltage (Pin 17)	V_{17} =Low, I_{18} = 1.8mA			0.4	V
I_C	Output Leakage Current (Pin 17)	V_{17} = V_{CC}			10	mA
Z_{OUT}	Output Impedance (Pin 17)	V_{17} = V_{CC}	7.5	10	12.5	kΩ
CTL WRITE AMPLIFIER						
V_{RWL}	Read/Write Enable Input Low Voltage (Pin 16)		-0.3		1.7	V
V_{RWH}	Read/Write Enable Input High Voltage (Pin 16)		2.8		V_{CC}	V
V_{RWL}	Write Enable Input Low Voltage (Pin 17)	Pin 16 = Low	-0.3		1.7	V
V_{RWH}	Write Enable Input High Voltage (Pin 17)	Pin 16 = Low	2.8		V_{CC}	V
V_{SATL}	Output Saturation Voltage Low State (Pin 1)	Pin 16 = Low, Pin 17 = Low, I_{SINK} = 5mA			0.4	V
V_{SATH}	Output Saturation Voltage High State (Pin 1)	Pin 16 = Low, Pin 17 = High, I_{SOURCE} = 5mA I_{SOURCE} = 2mA			 1.2 1.1	 V V
MODE COMMUTATION						
I_{TR}+	Discharging Current (Pin 18)	Read to Write Mode		5		mA
I_{TR}-	Charging Current (Pin 18)	Write to Read Mode		50		µA
SENSOR INTERFACE						
I_{IN}	Bias Current (PIns 7-9-13-15)	V_{IN} = 1V			1	µA
I_{TH}	Positive Threshold (Pins 7-9-13-15)			2.4		V
I_{THYS}	Negative Threshold (Pins 7-9-13-15)			2.0		V

5718-03.TBL

ELECTRICAL CHARACTERISTICS

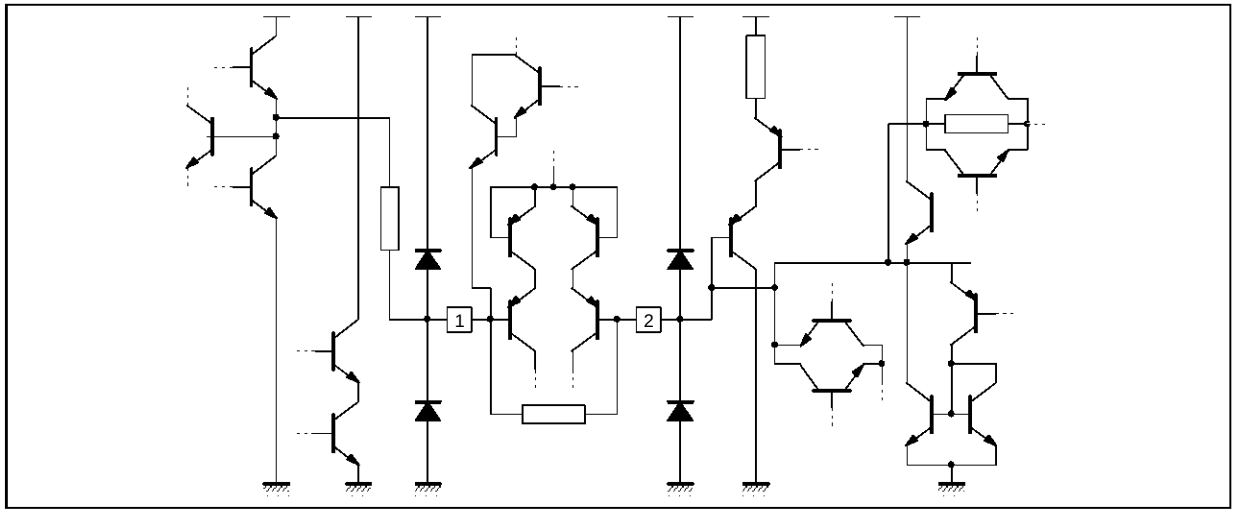
V_{CC} = 5V ±5%, T_{amb} = 25°C, unless otherwise specified

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
SENSOR INTERFACE (continued)						
V_{SAT}	Saturation Voltage (Pins 8-11-12-14)	I_{SINK} = 1.8mA			0.4	V
I_L	Leakage Current (Pins 8-11-12-14)	V_{OUT} = VCC			10	µA
R_O	Output Impedance (Pins 8-11-12-14)	V_{OUT} = VCC	7.5	10	12.5	kΩ
CAPSTAN TACHO COMPARATOR						
I_{IN}	Bias Current (Pins 4-5)	V_{IN} = Low			1	µA
V_{OFF}	Input Offset Voltage (Pins 4-5)				10	mV
I_{THYS}	Input Resistaor (Pins 4-5)		22.5	30	37.5	kΩ
V_{SAT}	Saturation Voltage (Pin 6)	I_{SINK} = 1.8mA			0.4	V
I_L	Leakage Current (Pin 6)	V_{OUT} = V_{CC}			10	µA
R_O	Output Impedance (Pin 6)	V_{OUT} = V_{CC}	7.5	10	12.5	kΩ

5718-04TBL

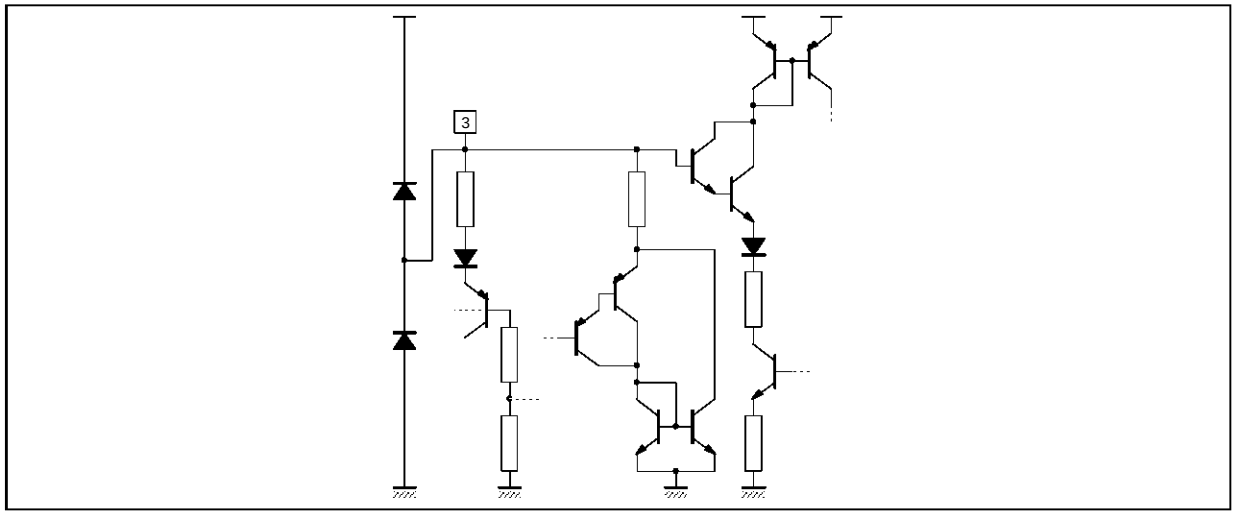
INPUT/OUTPUT PIN CONFIGURATION

Pins 1-2



5718-03.EPS

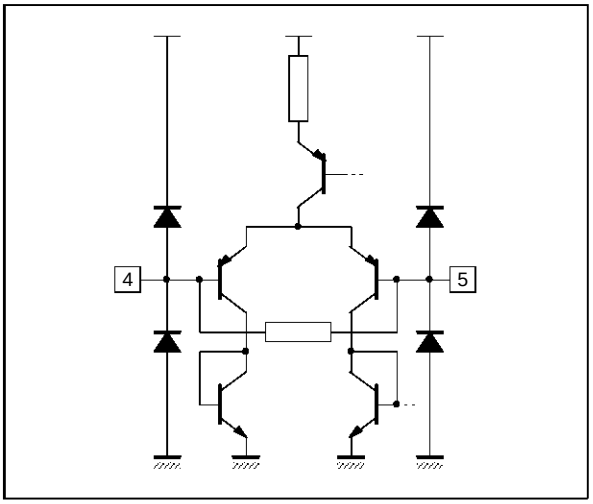
Pin 3



5718-04.EPS

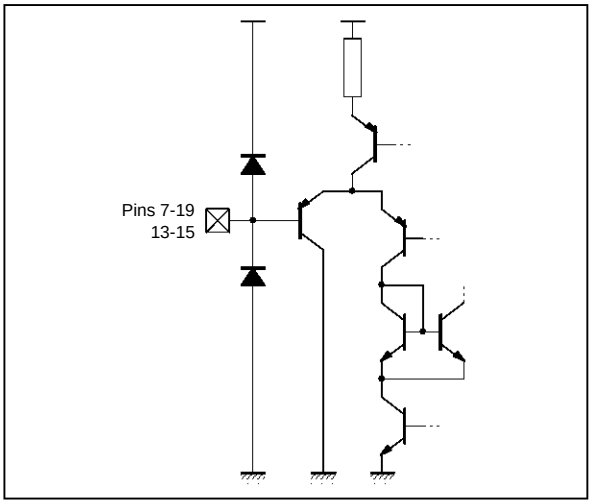
INPUT/OUTPUT PIN CONFIGURATION (continued)

Pins 4-5



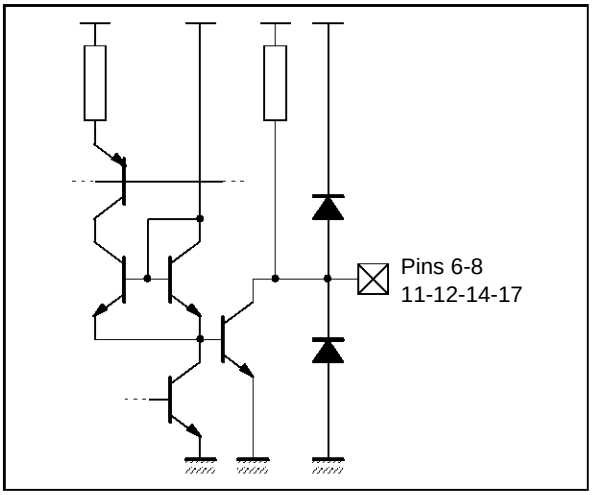
5718-05.EPS

Pins 7-9-13-15



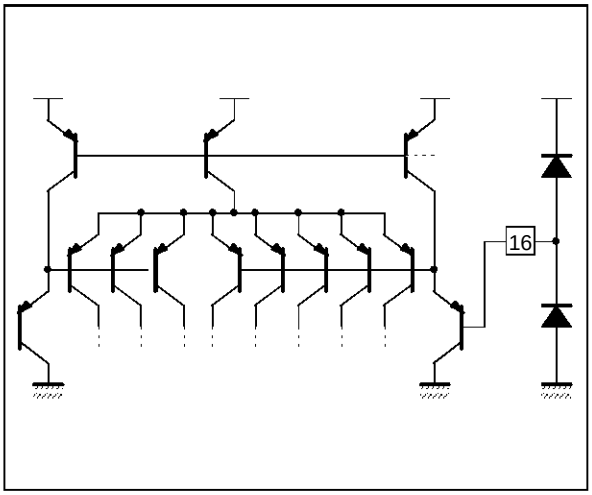
5718-06.EPS

Pins 6-8-11-12-14-17



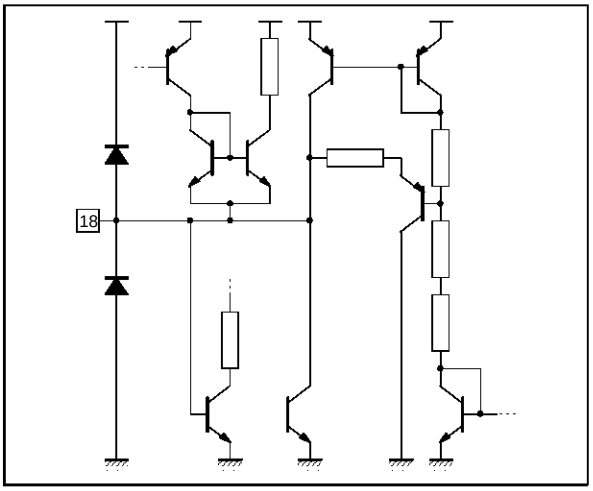
5718-07.EPS

Pin 16



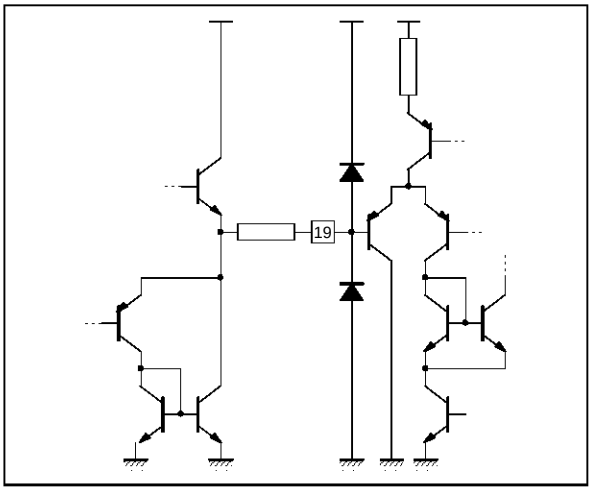
5718-08.EPS

Pin 18



5718-09.EPS

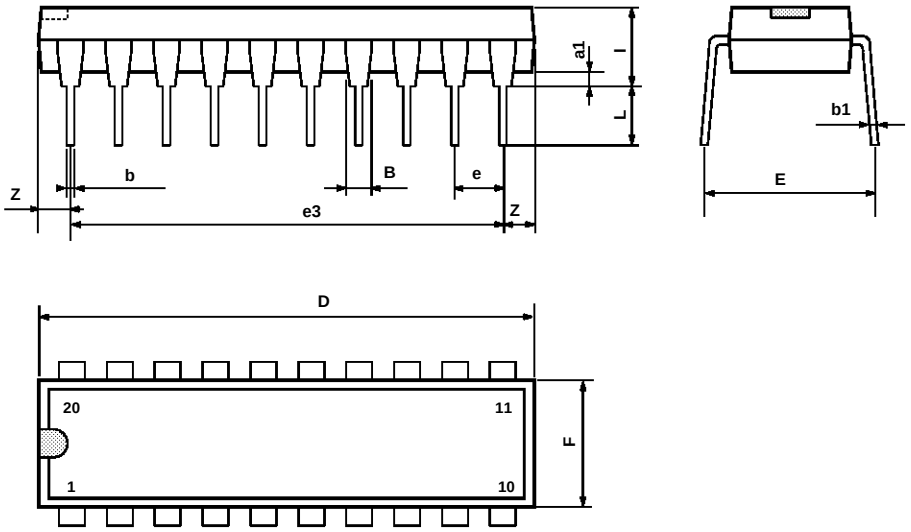
Pin 19



5718-10.EPS

PACKAGE MECHANICAL DATA

20 PINS - PLASTIC DIP



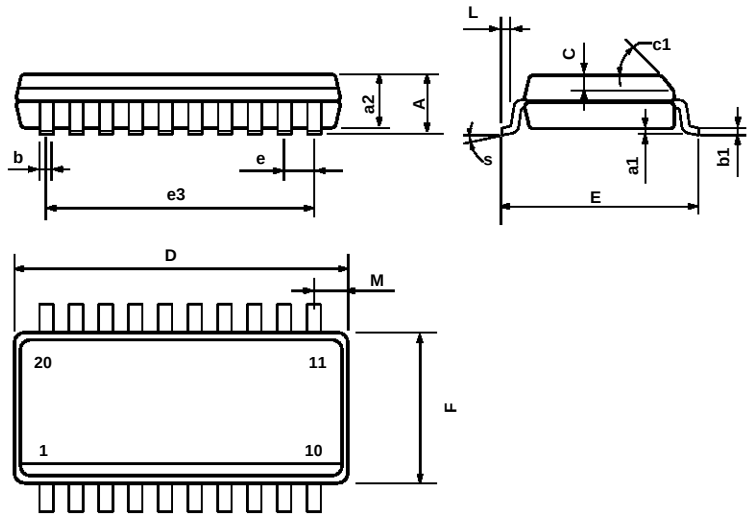
PM-DIP20.EPS

Dimensions	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
a1	0.254			0.010		
B	1.39		1.65	0.055		0.065
b		0.45			0.018	
b1		0.25			0.010	
D			25.4			1.000
E		8.5			0.335	
e		2.54			0.100	
e3		22.86			0.900	
F			7.1			0.280
i			3.93			0.155
L		3.3			0.130	
Z			1.34			0.053

DIP20.TBL

PACKAGE MECHANICAL DATA

20 PINS - PLASTIC MICROPACKAGE (SO)



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.)					

SO20L.TBL