

6dB Amplifier with 75Ω Driver MM1510

DESCRIPTION

This IC is for video signal/chroma signal 75Ω driver, It is ideal for video signal output in devices ranging from portable digital still cameras to stationary equipment such as DVD players. The built-in amp gain on this IC is 6dB and also with input clamp, allowing support for a range of video signals, not just composite signals.

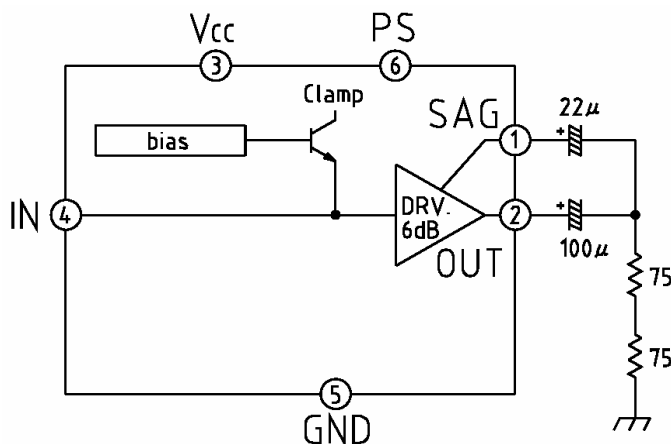
FEATURE

- Low power consumption achieved.
- Low power supply voltage realized.
- Frequency bandwidth without 75Ω driver:10MHz with75Ω driver:7MHz
- Cross talk 70dB When 4.43Mhz
- With SAG measures pin(75Ω driver and Y/C mix driver)

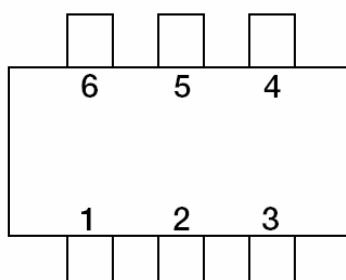
APPLICATIONS

- TV
- VTR
- Video camera
- Digital still camera
- Other visual equipment

BLOCK DIAGRAM



PIN ASSIGNMENT

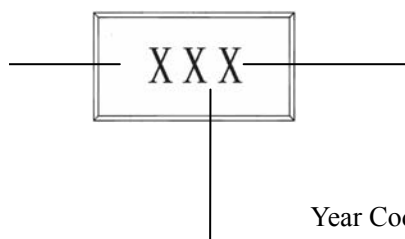


1	SAG
2	OUT
3	Vcc
4	IN
5	GND
6	PS

SOT23-6

MARKING INFORMATION:

Print Model
MM1510: P



Data Code

1-9week	1-9
10-35week	A-Z
36-54week	a-s

Year Code

2010	A
2011	B
2012	C

ABSOLUTE MAXIMUM RATING (Tamb=25°C)

Characteristics		Symbol	Value	Unit
Power supply voltage		Vcc	15	V
Allowable loss	When alone	PD	200	mW
	When mounted on board		350 *	
Operating temperature		Tstg	-30~+75	°C
Storage temperature		Topr	-40~+125	°C

* Board size 100mm×100mm t=1.6s

RECOMMENDED OPERATING CONDITIONS

Characteristics	Symbol	Min.	Typ.	Max	Unit
Power supply voltage	Vcc	4.5		13	V

ELECTRICAL CHARACTERISTICS(Unless otherwise specified, $V_{CC}=5V, T_a=25^{\circ}C$)

Characteristics	Symbol	Test conditions	Min.	Typ.	Max	Unit
Consumption current	I_{CC1}	Refer to measurement procedures		6.4	8.3	mA
Current consumption for PS	I_{CC2}	Refer to measurement procedures		20	30	μA
PS input voltage L	V_{PSL}	Refer to measurement procedures			0.3	V
PS input voltage H	V_{PSH}	Refer to measurement procedures	1.8			V
Input pin voltage	V_{IN}	No-signal,no-load	1.15	1.35	1.55	V
Output pin voltage	V_{OUT}	No-signal,no-load		1.15		V
Voltage gain	G_V	Refer to measurement procedures	5.5	6.0	6.5	dB
Frequency characteristic	f_c	Refer to measurement procedures	-1	0	+1	dB
Differential gain	D_G	Refer to measurement procedures	-3	0	+3	%
Differential phase	D_P	Refer to measurement procedures	-3	0	+3	deg
Output dynamic range	V_D	Refer to measurement procedures	2.6	3.0		V

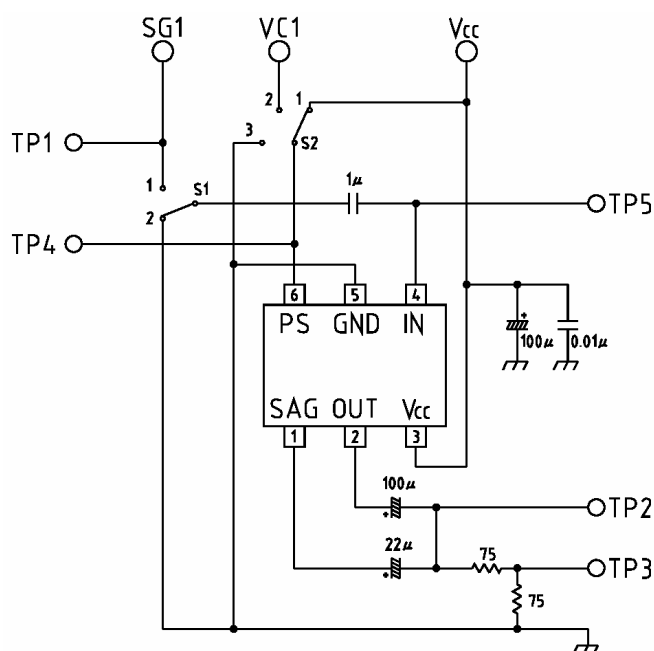
MEASUREMENT PROCEDURES**Switch Status**

Item	Symbol	Switch status		Item	Symbol	Switch status	
		S1	S2			S1	S2
Consumption current	I_{CC1}	2	1	Voltage gain	G_V	1	1
Consumption current for PS	I_{CC2}	2	3	Frequency characteristic	f_c	1	1
1PS input voltage L	V_{IL}	2	2	Differential gain	D_G	1	1
PS input voltage H	V_{IH}			Output dynamic range	V_D	1	1
Differential phase	D_P	1	1				

Measurement Procedures

Consumption current for PS	I_{CC1}	Connect a DC ammeter to the VCC pin and measure.
Consumption current for PS	I_{CC2}	Connect a DC ammeter to the VCC pin and measure.
PS input voltage	V_I	Connect a DC ammeter to the VCC pin. Gradually lower from $V_{C1} = V_{CC}$. V_{C1} voltage when consumption current is reduced from I_{CC1} to 110% of I_{CC2} is V_{IL} . Gradually raise from $V_{C1} = 0V$. V_{C1} voltage when consumption current increases from I_{CC2} to 90% of I_{CC1} is V_{IH} . From here on, short the ammeter when using it.
Voltage gain	G_V	Input a 1.0VP-P, 100kHz sine wave to SG1. If TP1 voltage is V_1 and TP2 voltage is V_2 , find G_V by the following formula: $G_V = 20\text{LOG} (V_2/V_1)$ dB
Frequency characteristic	f_c	In the above G_V measurement, if TP2 voltage at 7MHz is V_3 , find f_c by the following formula. $f_c = 20\text{LOG} (V_3/V_2)$ dB
Differential gain	D_G	Input a 1.0VP-P staircase to SG1 and measure differential gain at TP2. APL = 10 ~ 90%
Differential phase	D_P	The same as for D_G , but measure differential phase.
Output dynamic range	V_D	Input a 100kHz sine wave to SG1. Measure DR, the maximum amplitude under THD 1%, at TP2.

TEST CIRCUIT



OUTLINE DRAWING

