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.

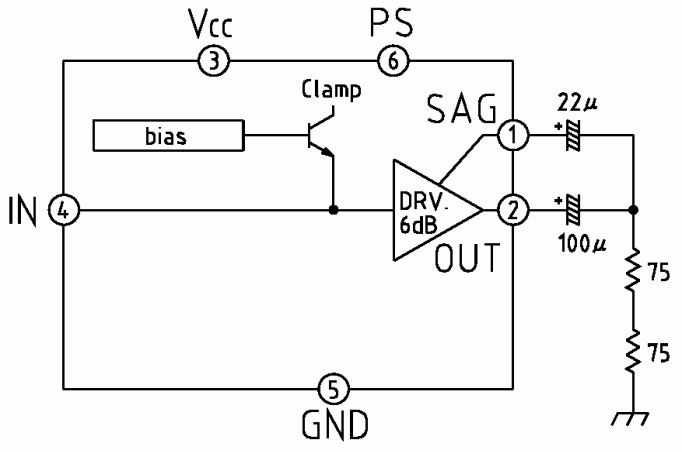
FEATURE

- 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)

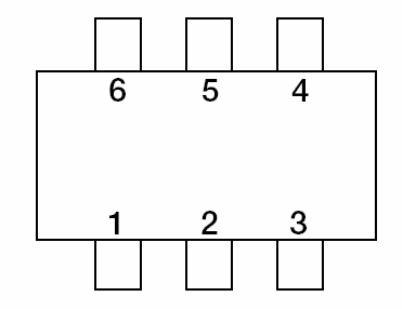
APPLICATIONS

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

BLOCK DIAGRAM



PIN ASSIGNMENT



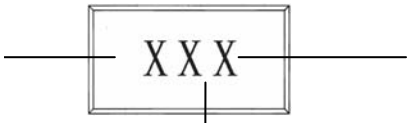
1	SAG
2	OUT
3	Vcc
4	IN
5	GND
6	PS

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℃）

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

* 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， Vcc=5V,Ta=25℃）

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	fc	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

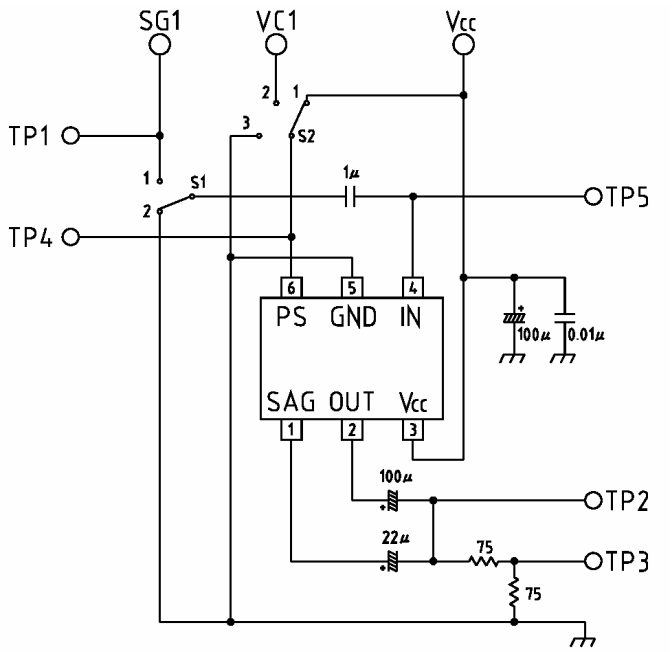
Switch Status

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	fc	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 VC1 =VCC. VC1 voltage when consumption current is reduced from ICC1 to 110% of ICC2 is VIL. Gradually raise from VC1 = 0V. VC1 voltage when consumption current increases from ICC2 to 90% of ICC1 is VIH. 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 V1 and TP2 voltage is V2, find GV by the following formula: GV = 20LOG (V2/V1) dB
Frequency characteristic	fc	In the above GV measurement, if TP2 voltage at 7MHz is V3, find fc by the following formula. fc = 20LOG (V3/V2) 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 DG, 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

SOT-23-6L Unit: mm