

DIO2554G

Four-Channel, 11MHz, 6th-Order Standard Definition Video Filter Driver

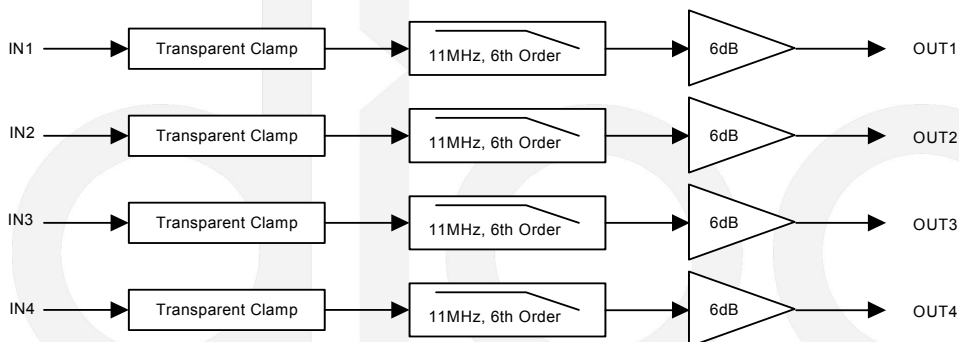
Features

- Four-ch 6th-order 11MHz SD filters
- 6dB Output Driver Gain and Drive Dual Video Load
- Transparent Input Clamping
- AC or DC Coupled Inputs
- AC or DC Coupled Outputs
- Operates from 3.135V to 5.5V Single Power Supply
- Low Power (8mA/Channel)
- 32mA Typical Supply Current
- RoHS or Green Package MSOP-10, TSSOP-14
- 8kV ESD protection

Applications

- DVD Players
- Video Amplifiers
- Cable set-top boxes
- Personal Video Recorders
- Communications Devices
- Video on Demand

Block Diagram



Ordering Information

Order Part Number	Top Marking		T _A	Package	
DIO2554GCM10	DIO2554	RoHS or Green	-40 to +85°C	MSOP-10	Tape & Reel, 3000
DIO2554GCT14	DIO2554	RoHS or Green	-40 to +85°C	TSSOP-14	Tape & Reel, 2500

Descriptions

DIO2554G is a low voltage, triple video amplifier with integrated reconstruction filter and input clamps. DIO2554G provides improved image quality compared with passive LC filters and discrete drivers solution, especially suited for standard definition video signals, such as television and set-top box applications.

DIO2554G can be directly driven by a DC-coupled DAC output or an AC-coupled signal. Internal diode-like clamps and bias circuitry may be used if AC-coupled inputs are required. The output in DIO2554G can also drive AC or DC coupled single (150Ω) or dual (75Ω) loads. The DC coupling capacitors can be removed.

Pin Assignments

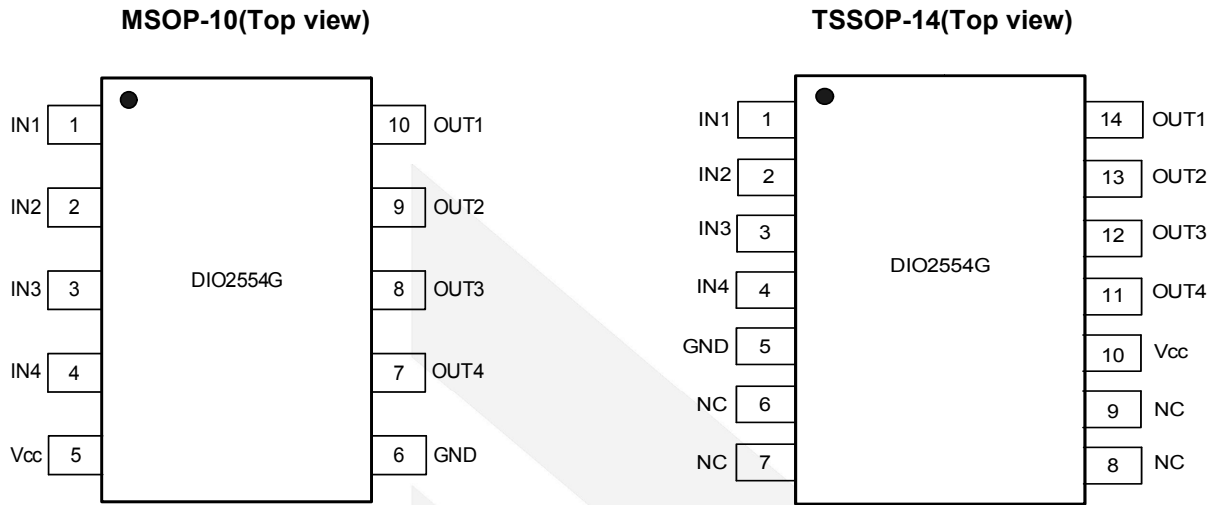


Figure 1 Pin Assignment

Pin Description

Pin Number		Name	Description
MSOP-10	TSSOP-14		
1	1	IN1	Video input, channel 1
2	2	IN2	Video input, channel 2
3	3	IN3	Video input, channel 3
4	4	IN4	Video input, channel 4
5	10	V _{CC}	Power supply
6	5	GND	Ground
7	11	OUT4	Filtered output, channel 4
8	12	OUT3	Filtered output, channel 3
9	13	OUT2	Filtered output, channel 2
10	14	OUT1	Filtered output, channel 1

Absolute Maximum Ratings

Stresses beyond those listed under "Absolute Maximum Rating" may cause permanent damage to the device. These are stress ratings only and functional operation of the device at these or any other condition beyond those indicated in the operational sections of the specifications is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

Parameter		Rating	Unit
Supply Voltage		0 to 6.0	V
Input Voltage		-0.3 to $V_{CC}+0.3$	V
Storage Temperature Range		-65 to 150	°C
Junction Temperature		150	°C
Lead Temperature Range		260	°C
ESD	HBM, JEDEC: JESD22-A114	8	kV
	CDM, JEDEC: JESD22-C101	2	

Recommended Operating Conditions

The Recommended Operating Conditions table defines the conditions for actual device operation to ensure optimal performance to the datasheet specifications. DIOO does not recommend exceeding them or designing to Absolute Maximum Ratings.

Parameter		Rating	Unit
Supply Voltage		3.135 to 5.5	V
Operating Temperature Range		-40 to 85	°C





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Electrical Characteristics

Typical value: T_A = 25°C, V_{CC}=5V, R_{SOURCE}=37.5Ω, R_L=150Ω loads; all inputs are AC couple with 0.1μF; all outputs are AC coupled with 220μF; unless otherwise specified.

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
DC ELECTRICAL CHARACTERISTICS						
I _{CC}	Supply Current			32		mA
V _{IN}	Video Input Voltage Range			1.4		V _{PP}
PSRR	Power Supply Rejection			-50		dB
DYNAMIC PERFORMANCE						
A _V	Channel Gain			6.0		dB
F _{0.1dB}	-0.1dB Bandwidth			5.8		MHz
f _{1dB}	-1dB Bandwidth			8.8		MHz
f _{3dB}	-3dB Bandwidth			11.0		MHz
	Filter Response	f=27MHz		-44		dB
DG	Differential Gain			0.2		%
DP	Differential Phase			0.36		°
THD	Output Distortion	f=1MHz		0.38		%
X _{TALK}	Crosstalk	f=1MHz		-74		dB
SNR	Signal to Noise Ratio			70		dB
	Group Delay	f=400kHz, 6.5MHz		20		ns
CLG _{SD}	Chroma Luma Gain	f=3.58MHz ref to SD in at 400kHz		100		%
CLD _{SD}	Chroma Luma Delay	f=3.58MHz ref to SD in at 400kHz		5.5		ns

Notes: SNR=20 • log (714mV / rms noise).

Specifications subject to change without notice.



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CONTACT US

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