

DIO2663

Three-Channel, 35MHz, 6th-Order High Definition Video Filter Driver

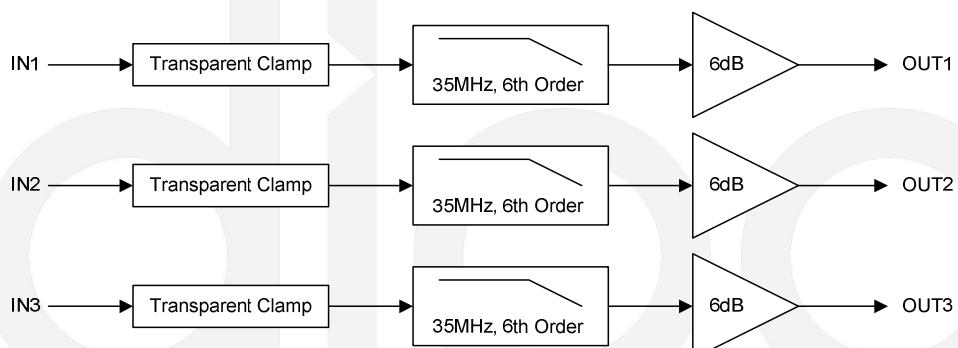
Features

- Triple 6th-order 35MHz HD 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 5.25V
- Single Power Supply
- 40mA Typical Supply Current
- RoHS or Green SOIC-8 Package
- 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	
DIO2663CS8	DIO2663	Green	-40 to +85°C	SOIC-8	Tape & Reel, 2500

Pin Assignments

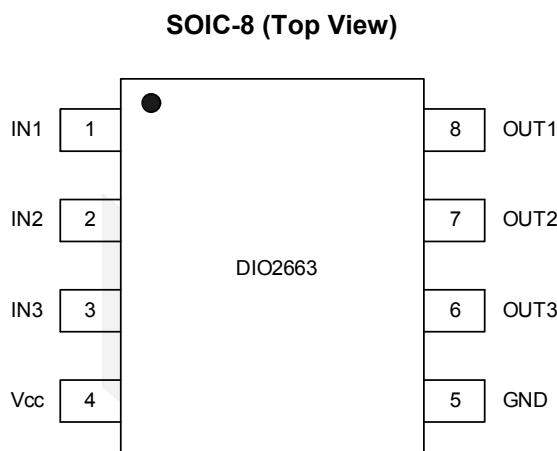


Figure 1 Pin Assignment (Top View)

Pin Description

Pin	Name	Description
1	IN1	Video input, channel 1
2	IN2	Video input, channel 2
3	IN3	Video input, channel 3
4	V _{cc}	Power supply
5	GND	Ground
6	OUT3	Filtered output, channel 3
7	OUT2	Filtered output, channel 2
8	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
SOIC-8 θ_{JA}	130	°C/W
ESD	HBM, JEDEC: JESD22-A114	8
	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 5.25	V
Operating Temperature Range	-40 to 85	°C

Electrical Characteristics

Typical value: $T_A = 25^\circ\text{C}$, $V_{CC}=5\text{V}$, $R_{SOURCE}=37.5\Omega$, $R_L=150\Omega$ loads; all inputs are AC couple with $0.1\mu\text{F}$; all outputs are AC coupled with $220\mu\text{F}$; unless otherwise specified.

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
DC ELECTRICAL CHARACTERISTICS						
I_{CC}	Supply Current			40	56	mA
V_{IN}	Video Input Voltage Range		GND		1.4	V_{PP}
PSRR	Power Supply Rejection			-50		dB
DYNAMIC PERFORMANCE						
A_v	Channel Gain		5.8	6.0	6.2	dB
BW	Band Width	$\pm 0.5\text{dB}$, $R_{SOURCE}=75\Omega$		26		MHz
		-1dB, $R_{SOURCE}=75\Omega$		30		
		-3dB, $R_{SOURCE}=75\Omega$		35		
AR	Attenuation	$f=37.125\text{MHz}$, $R_{SOURCE}=75\Omega$		-4.6		dB
		$f=44.25\text{MHz}$, $R_{SOURCE}=75\Omega$		-10.5		
		$f=74.25\text{MHz}$, $R_{SOURCE}=75\Omega$		-37		
THD	Output Distortion	$V_{OUT}=1.4V_{PP}$, $f=10\text{MHz}$		0.6		%
		$V_{OUT}=1.4V_{PP}$, $f=15\text{MHz}$		0.8		
X_{TALK}	Crosstalk	$f=1\text{MHz}$, $V_{IN}=1.4V_{PP}$		-75		dB
SNR	Signal to Noise Ratio	100kHz to 30MHz, 100% White Signal		65		dB
	Group Delay	100kHz to 30MHz		5		ns
	Propagation Delay	Input to Output		20		ns
SR	Slew Rate	2V Output 80% to 20%		90		$\text{V}/\mu\text{s}$

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

Specifications subject to change without notice.

Application Circuit

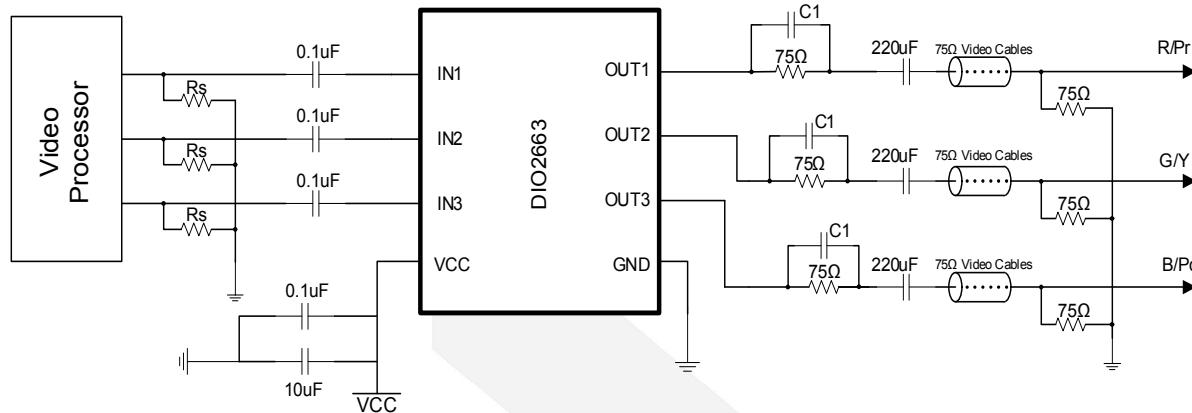


Figure 2 Input and Output AC-Coupling Application

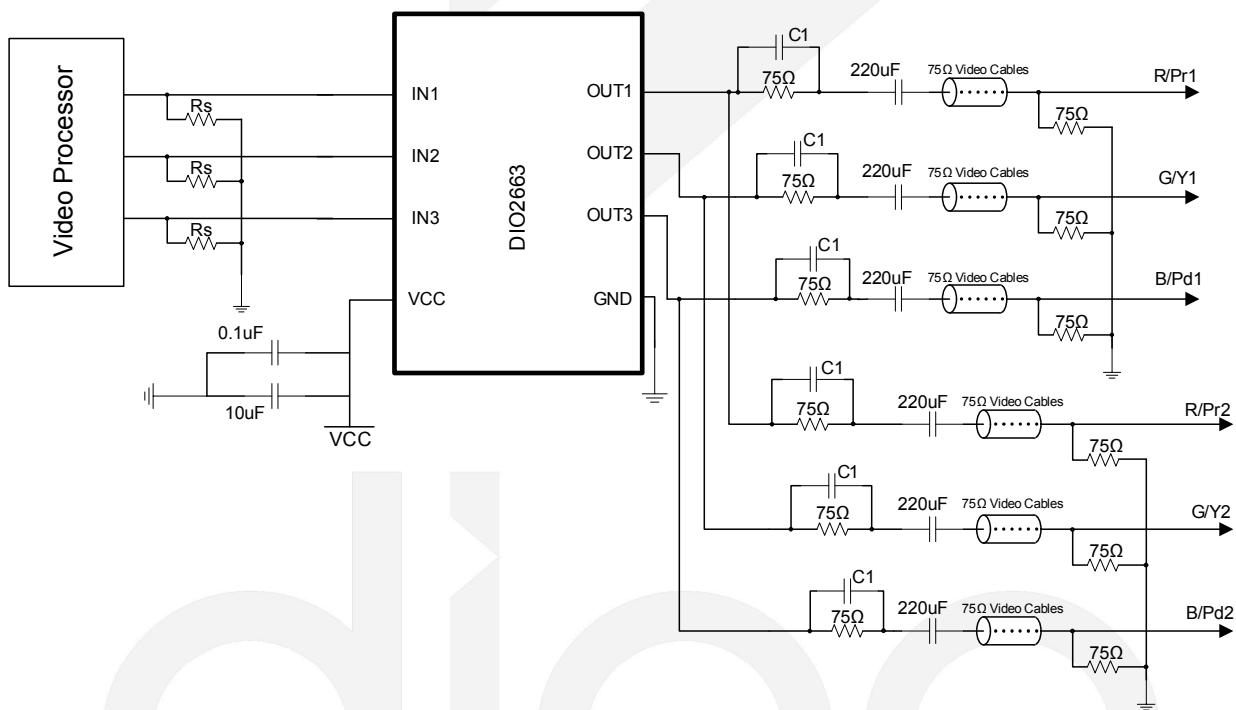
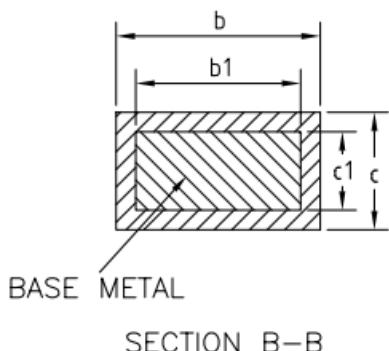
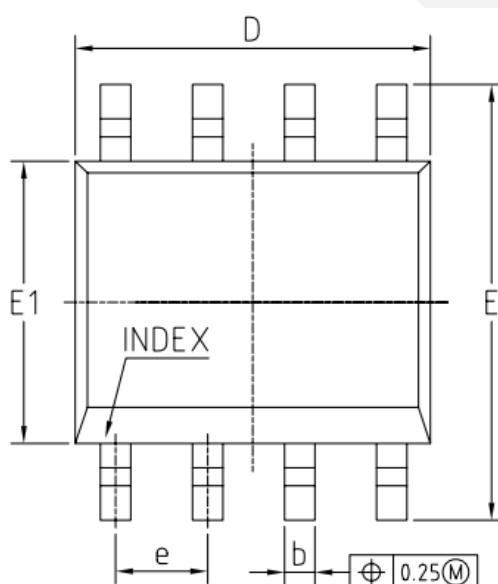
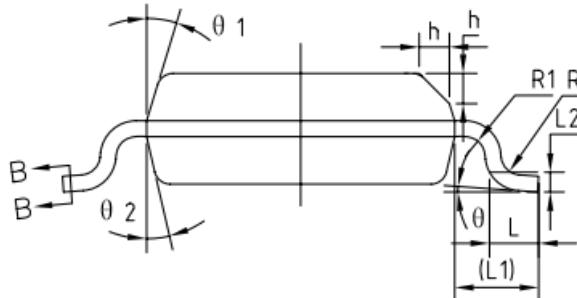
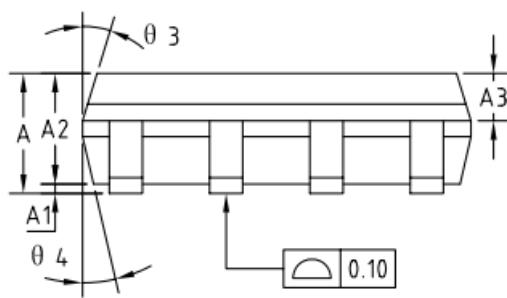


Figure 3 Input DC-Coupling Application and Output AC-Coupling with Double Load

Note: The value of C1 is recommended 2 to 4pF

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Physical Dimensions: SOIC-8



COMMON DIMENSIONS (UNITS OF MEASURE=MILLIMETER)			
Symbol	MIN	NOM	MAX
A	1.35	1.55	1.75
A1	0.10	0.15	0.25
A2	1.25	1.40	1.65
A3	0.50	0.60	0.70
b	0.38	-	0.51
b1	0.37	0.42	0.47
c	0.17	-	0.25
c1	0.17	0.20	0.23
D	4.80	4.90	5.00
E	5.80	6.00	6.20
E1	3.80	3.90	4.00
e	1.27BSC		
L	0.45	0.60	0.80
L1	1.04REF		
L2	0.25BSC		
R	0.07	-	-
R1	0.07	-	-
h	0.30	0.40	0.50
θ	0°	-	8°
θ1	15°	17°	19°
θ2	11°	13°	15°
θ3	15°	17°	19°
θ4	11°	13°	15°



CONTACT US

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