

BUS-CONTROLLED AUDIO MATRIX SWITCH

- 5 Stereo Inputs
- 4 Stereo Ouputs
- Gain Control 0/2/4/6dB/Mute for each Output
- cascadable (2 different addresses)
- Serial Bus Controlled
- Very low Noise
- Very low Distorsion

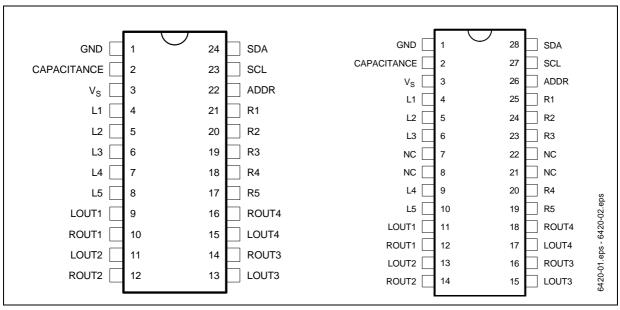
DESCRIPTION

The TEA6420 switches 5 stereo audio inputs on 4stereo outputs.

All the switching possibilities are changed through the $\ensuremath{\text{I}}^2 C$ bus.

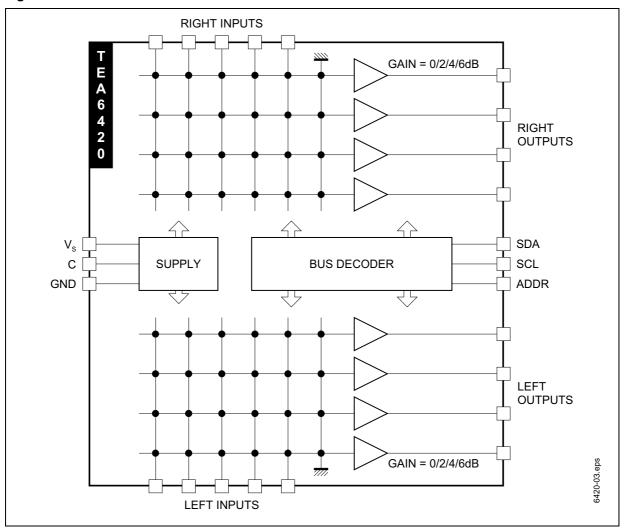


Figure 1. PIN CONNECTIONS



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Figure 2. BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V _{CC}	Supply Voltage (Pin 9)	12	V
T _{OPER}	Operating Ambient Temperature Range	0 to +70	°C
T _{stg}	Storage Temperature Range	-20 to +150	°C

THERMAL DATA

Symbol	Parameter+	Value	Unit	
R _{th} (j-a)	Junction-Ambient Thermal Resistance	SDIP24 SO28	75 75	°C/W

ELECTRICAL CHARACTERISTICS

 T_A = 25°C, V_S = 10V, R_L = 10k Ω , R_G = 600 Ω , f = 1kHz (unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Тур.	Max.	Unit
SUPPLY	<u>.</u>	•				
Vs	Supply Voltage		8	9	10.2	V
IS	Supply Current			5	8	mA
SVR	Ripple Rejection	$V_{IN} = 500 \text{mV}_{RMS}, BW = 20 - 20 \text{kHz}$	70	80		dB
MATRIX	•	•	•	•	•	•
V _{IN}	Input DC Level		4.5	5	5.5	V
R _I	Input Resistance		30	50	100	kΩ
C _S	Channel Separation	V _{IN} = 2V _{RMS} Gain = 0dB f = 1kHz Gain = 6dB	80 70	90 82		dB dB
OUTPUT BUF	FER	l		I		I
V _{OUT}	Output DC Level		4.5	5	5.5	V
R _{OUT}	Output Resistance			70	200	W
e _{NI}	Input Noise	BW = 20 - 20kHz, flat		3		μV
S/N	Signal to Noise Ratio	$V_{IN} = V_{OUT} = 1V_{RMS}$		110		dB
G _{min}	Min. Gain		-1	0	+ 1	dB
G _{max}	Max. Gain		5	6	7	dB
d	Distortion	$V_{IN} = V_{OUT} = 1V_{RMS}$		0.01	0.05	%
V _{CL}	Clipping Level	d = 0.3%	2	2.5		V_{RMS}
R_L	Output Load Resistance		2			kΩ
BUS INPUT						
V _{IL}	Input Low Voltage				1.5	V
V _{IN}	Input High Voltage		3			V
l _l	Input Current		- 10		10	μA
Vo	Output Voltage	I _O = 3mA ; SDA Acknowledge pin			0.4	V
R _{pu}	ADDR Pullup Resistor	Note	40	50		kΩ

TEA6420

SOFTWARE SPECIFICATION

1. Chip address

Address	HEX	ADDR
1001 1000	98	0
1001 1010	9A	1

2. Data bytes

Output select								
Х	0 0 1 1	0 1 0 1	G ₁	G ₀	l ₂	I ₁	I _O	Output 1 Output 2 Output 3 Output 4
Input sel	Input select							
Х	Q ₁	Q0	G ₁	G ₀	0 0 0 0 1 1	0 0 1 1 0 0	0 1 0 1 0	Input 1 Input 2 Input 3 Input 4 Input 5 Mute
Gain select								
X	Q ₁	Q0	0 0 1 1	0 1 0 1	l ₂	I ₁	I _O	Gain = 6 dB Gain = 4 dB Gain = 2 dB Gain = 0 dB

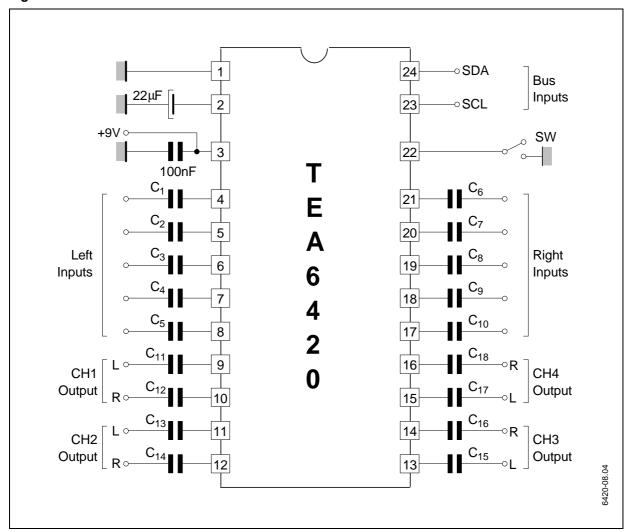
X = don't care - MSB is transmitted first

Example: X1001100 connects output 3 with input 5 at a gain of 4dB

The following are selected after power-on reset: input 5 selected for all outputs; gain = 0dB.

TYPICAL APPLICATION

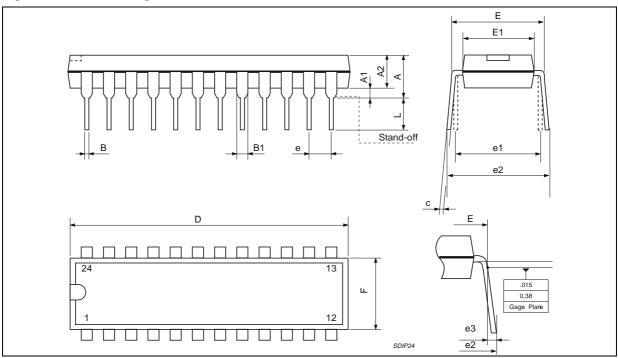
Figure 3.



PACKAGE MECHANICAL DATA

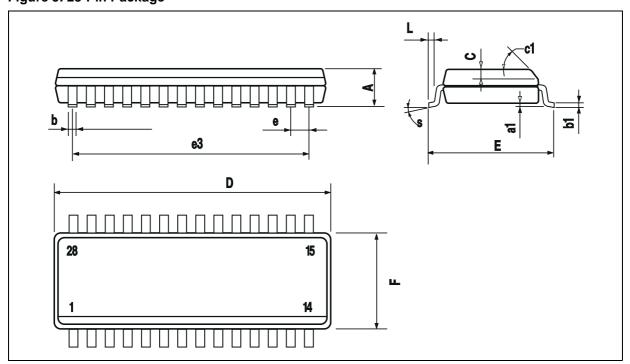
24 PINS - PLASTIC DIP

Figure 4. 24-Pin Package



28 PINS - PLASTIC SO

Figure 5. 28-Pin Package



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