

FUDAN MICROELECTRONICS



复旦微电子

# ***FM62429 Serial Data Control Dual Electronic Volume***

**Specification**

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**May. 2008**



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# Product Overview

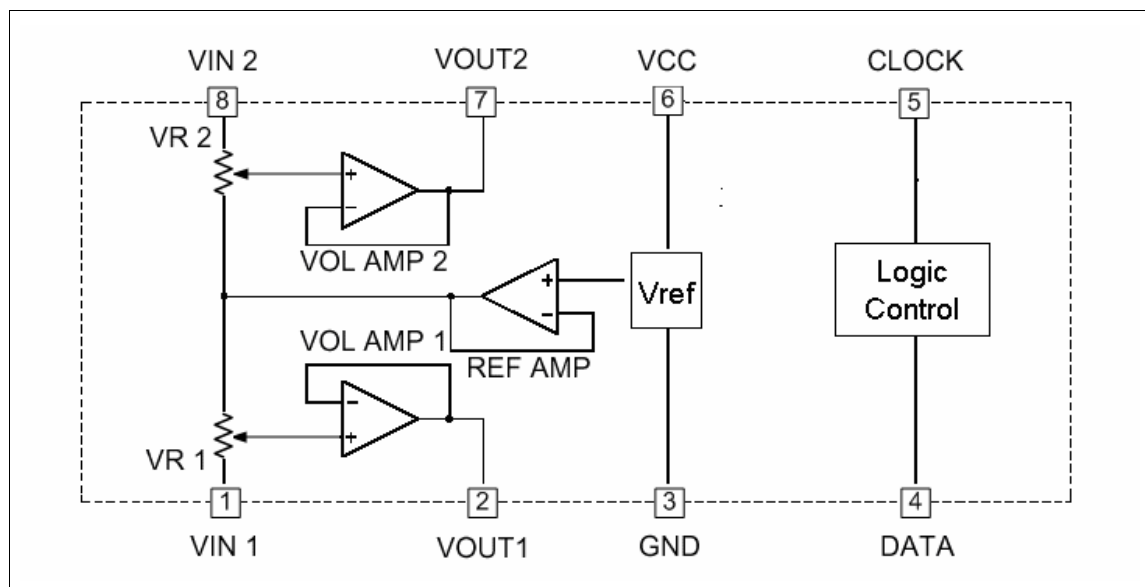
## Instruction

FMSH' FM62429 is a dual channel electronic volume controlled with 2-wire serial data. It is designed special to adjust the range of audio-digital. The build-in reference circuit can constitute an electronic volume with less external parts. The FM62429 is completely compatible with the M62429P/FP of Mitsubishi.

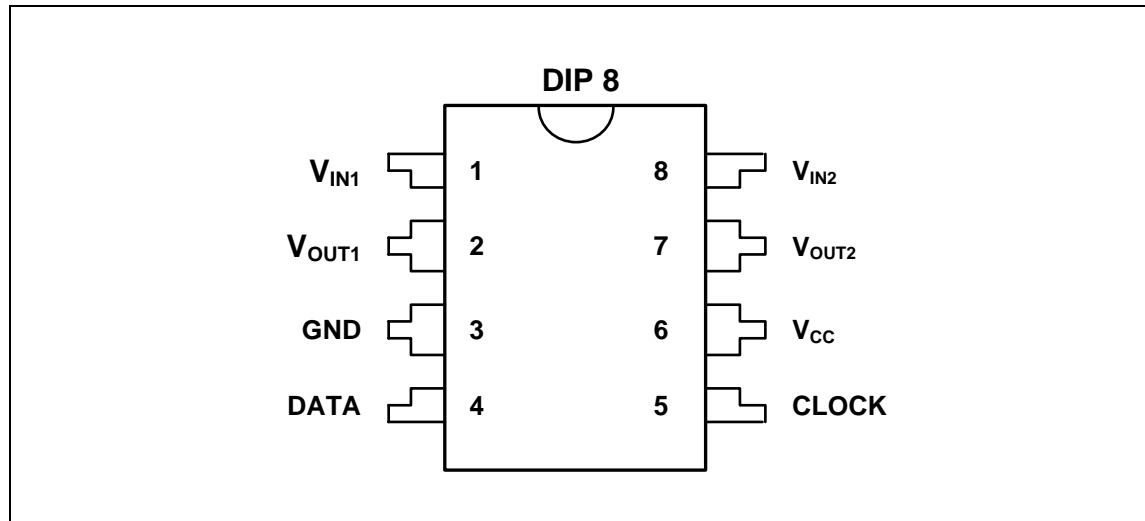
## Features

- ◆ Controlled with 2-wire serial data
- ◆ Independent control allowed in each channel
- ◆ Build-in reference circuit
- ◆ Gain range: 0dB to - 83dB(1dB/step), -  $\infty$
- ◆ Low noise and low distortion
- ◆ Package: DIP8

## Block Diagram



## Pin Assignment



## Pin Description

Pin	Symbol	Functions
1	$V_{IN1}$	Channel 1 input pin
2	$V_{OUT1}$	Channel 1 output pin
3	GND	GND
4	DATA	Control date input pin. Inputs date in synchronization with clock.
5	CLOCK	Clock input pin for transferring serial data.
6	$V_{CC}$	Power supply pin. Stabilize the pin with decoupling capacitor.
7	$V_{OUT2}$	Channel 2 output pin
8	$V_{IN2}$	Channel 2 input pin

# Characteristics

## Absolute Maximum Ratings

Symbol	Parameter	Value	Unit
$V_{CC}$	Supply voltage	6.0	V
PD	Power dissipation	625	mW
$T_{opr}$	Operating temperature	- 20 to + 75	°C
$T_{stg}$	Storage temperature	- 55 to + 125	°C

## Electrical Characteristics

( $V_{CC}=5V$ ,  $T_a=+25^{\circ}C$ , unless otherwise noted)

Symbol	Parameter	Test Conditions	Specification			Unit
			Min.	Typ.	Max.	
$I_{CC}$	Circuit Current		-	6	12	mA
$ATT_{MAX}$	Maximum Attenuation	$ATT = -\infty$	-	-90	-80	dB
$ATT_{ERR}$	Attenuation error	$ATT=0$	-2.0	0	2.0	dB
$V_{IM}$	Maximum input voltage	THD=1%, $ATT = -6dB$	1.5	1.7	-	Vrms
$V_{OM}$	Maximum output voltage	THD=1%	0.8	1.3	-	Vrms
$V_{NO1}$	Output noise voltage	$ATT=0$ , $R_g=0$ , JIS-A	-	4	10	$\mu V_{rms}$
$V_{NO2}$		$ATT = -\infty$ , $R_g=0$ , JIS-A	-	5	10	$\mu V_{rms}$
THD	Total harmonic distortion	$f=1kHz$ , $V_O=0.5V_{rms}$ , $ATT=0$	-	0.01	0.05	%
CS	Channel separation	$f=1kHz$ , JIS-A	-	-80	-70	dB

## DC Characteristics of Digital Block

Symbol	Parameter	Test Conditions	Specification			Unit	
			Min.	Typ.	Max.		
$V_{IL}$	"L" level input voltage	Data/CLK Pin	0	-	$0.2V_{CC}$	V	
$V_{IH}$	"H" level input voltage		$0.8V_{CC}$	-	$V_{CC}$	V	
$I_{IL}$	"L" level input current	Input voltage:0V	Data/CLK Pin	-10	-	10	$\mu A$
$I_{IH}$	"H" level input current	Input voltage:5V		-	-	10	$\mu A$



## AC Characteristics of Digital Block

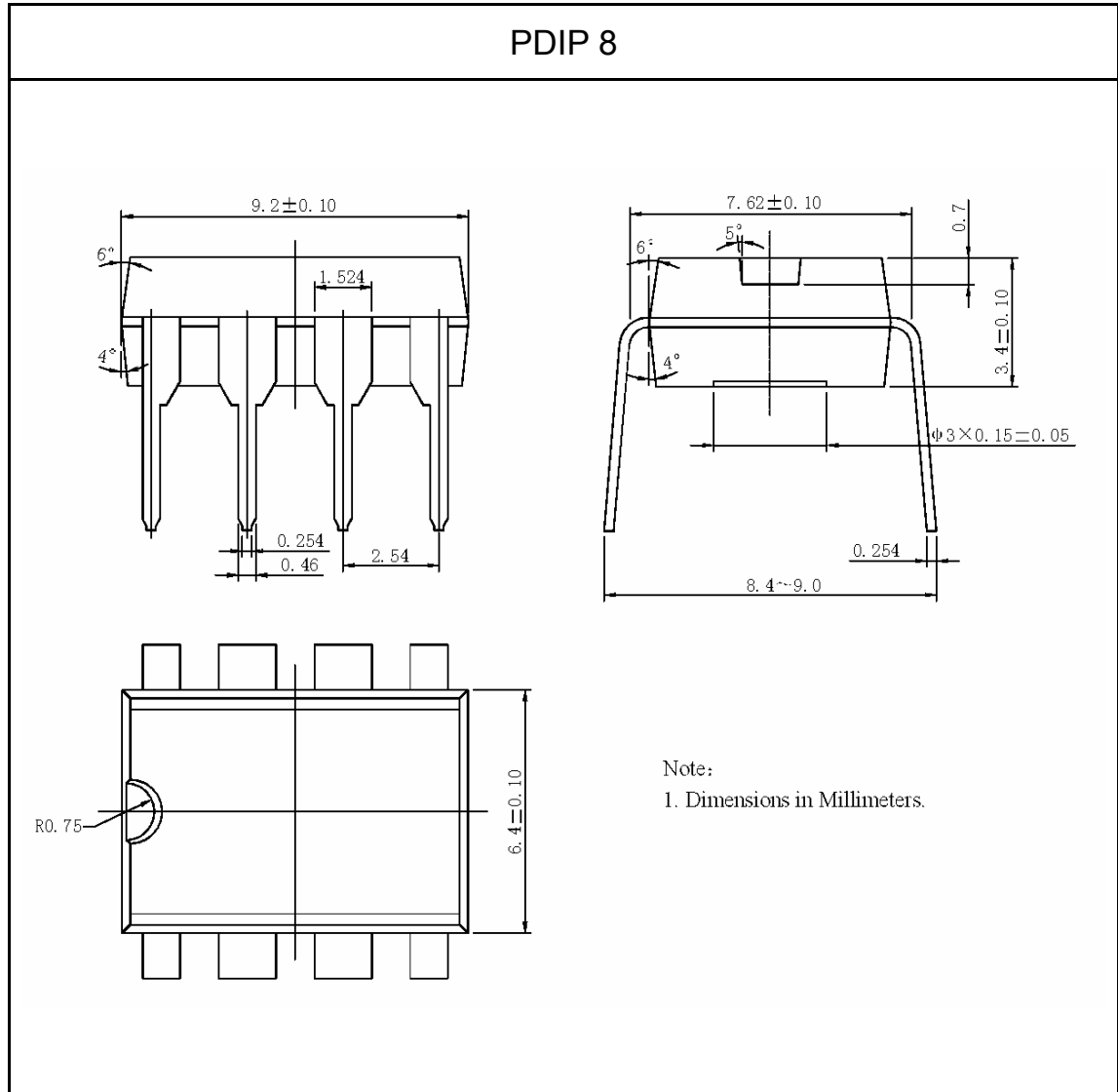
Symbol	Parameter	Test Condition	Specification			Unit
			Min.	Typ.	Max.	
$t_{cr}$	Cycle time of clock	-	4	-	-	$\mu s$
$t_{WHC}$	Pulse width of clock ("H" level)	-	1.6	-	-	$\mu s$
$t_{WLC}$	Pulse width of clock ("L" level)	-	1.6	-	-	$\mu s$
$t_r$	Clock rising time	-	-	-	0.4	$\mu s$
$t_f$	Clock falling time	-	-	-	0.4	$\mu s$
$t_{SD}$	Data setup time	-	0.8	-	-	$\mu s$
$t_{HD}$	Data hold time	-	0.8	-	-	$\mu s$



## Ordering Information

Ordering code	Package	Operation temperature
FM62429-PD	PDIP8	Industrial Temperature -20°C ~ +75°C

# Package Dimensions







## Revision History

Version	Publication date	Pages	Paragraph or Illustration	Revise Description
1.0	Oct. 2007	10		Initial Release.
1.1	May. 2008	10	Sales and service	Updated the address of HK office.



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