集成電路
IC

Positive Voltage RegulatorZ 正向電源穩壓器 FH62

DESCRIPTION & FEATURES 概述及特點

The FH62 series is a group of positive voltage output, three-pin regulators. That provide a high current even when the input/output voltage differential is small. Low power consumption and high accuracy is achieved through CMOS and laser trimming technologies .The FH62 consist of a high-precision voltage reference ,an error correction circuit, and a current limited output driver ,Transient response to load variations have improved in comparison to the existing series .
SOT-23-3Land SOT-89 packages are available.

FH62 系列是一組具有正向輸出電壓功能的三端穩壓器，在輸入輸出壓差較小時也能提供出高電流。通過 CMOS 工藝及鐳射剪切技術使產品具有低功耗及高精度的優點。FH62 由一個高精密的電壓基準源、一個可確認錯誤的回路、一個可限制輸出電流的驅動器組成。
現有系列產品的暫態回應負載變化與之前相比較已經改良。
現有封裝類型 SOT-23-3L 和 SOT-89

- **Maximum output current**：250mA
- **Output Voltage Range:**
  2.0V ~ 5.0V in 0.1V increments
  (1.5V ~ 1.9V for custom products)
- **Highly Accurate:** Output voltage ±2%
  (±1% for semi-custom products)
- **Low Power Consumption:**
  Typ. 2.0μA @ VOUT=5.0V
- **Output Voltage Temperature Characteristics:**
  Typ. ±100ppm/°C
- **Input Stability :** Typ. 0.2%/V
- **Small Input-Output Differential:**
  Iout = 100mA @ Vout = 5.0V with a 0.12V differential.
- **Ultra Small Packages :**
  SOT-23 (150mW) mini-mold,
  SOT-89 (500mW) mini-power mold

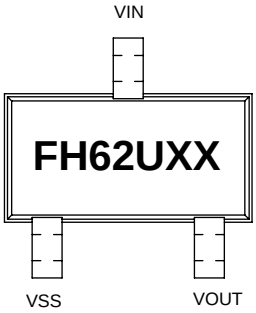
- 最大負載電流：250 mA
- 輸出電壓範圍：
  2.0V～5.0V,每 0.1V 一個間隔.
  (1.5V～1.9V 爲可爲專用客戶定做)
- 高精度：輸出電壓精度爲±2%
  （±1%精度可爲專用半導體客戶定做）
- 低功耗
  Typ. 2.0μA @ VOUT=5.0V
- 輸出電壓溫度特性：
  Typ. ±100ppm/°C
- 低壓差：
  Iout = 100mA @ Vout = 5.0V with a 0.12V differential.
- 極小型封裝：SOT-23 (150mW) mini-mold,
  OT-89 (500mW) mini-power mold

Applications 應用

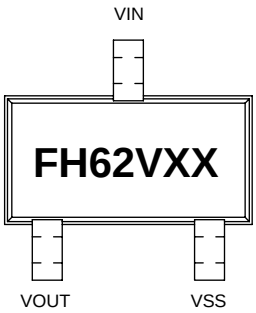
- MP3&U disc Regulator
- Battery Powered Equipment
- Palmtops MP3 U disc
- Portable Cameras and Video Recorders
- Reference Voltage Sources

- MP3&U 盤穩壓器
- 電池充電設備
- 掌上電腦 MP3 U 盤
- 可攜式相機及錄影機
- 基準電壓源

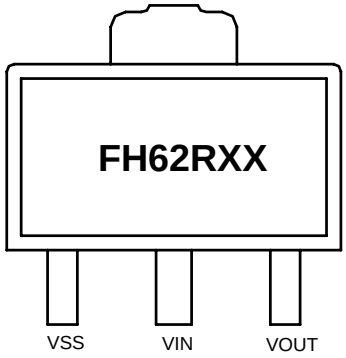
Pin Configuration 引腳排列圖



SOT-23-3L 常規



SOT-23-3L 反向



SOT-89-3L

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管腳名稱及定義				功能描述
符號	SOT-23-3L 常規	SOT-23-3L 反向	SOT-89-3L	
VSS	1	2	1	Contact to the GND 接地
VIN	3	3	2	Input Pin　輸入端
VOUT	2	1	3	Output Pin　輸出端

Ordering Information 訂購資訊

Package 封裝類型	Temperature Range 溫度範圍	Part Number 產品型號	Marking ID 打標	Packing Type 包裝類型
SOT-23-3L常規	-30°C ~ 80°C	FH62U105T-E	105+ Week No.	T
		FH62U106T-E	106+ Week No.	T
		FH62U107T-E	107+ Week No.	T
		FH62U108T-E	108+ Week No.	T
		FH62U109T-E	109+ Week No.	T
		FH62U200T-E	200+ Week No.	T
		FH62U201T-E	201+ Week No.	T
		FH62U202T-E	202+ Week No.	T
		FH62U203T-E	203+ Week No.	T
		FH62U204T-E	204+ Week No.	T
		FH62U205T-E	205+ Week No.	T
		FH62U206T-E	206+ Week No.	T
		FH62U207T-E	207+ Week No.	T
		FH62U208T-E	208+ Week No.	T
		FH62U209T-E	209+ Week No.	T
		FH62U300T-E	300+ Week No.	T
		FH62U301T-E	301+ Week No.	T
		FH62U302T-E	302+ Week No.	T
		FH62U303T-E	303+ Week No.	T
		FH62U304T-E	304+ Week No.	T
		FH62U305T-E	305+ Week No.	T
		FH62U306T-E	306+ Week No.	T
		FH62U307T-E	307+ Week No.	T
		FH62U308T-E	308+ Week No.	T
		FH62U309T-E	309+ Week No.	T
		FH62U400T-E	400+ Week No.	T
		FH62U401T-E	401+ Week No.	T
		FH62U402T-E	402+ Week No.	T
		FH62U403T-E	403+ Week No.	T
		FH62U404T-E	404+ Week No.	T
		FH62U405T-E	405+ Week No.	T
		FH62U406T-E	406+ Week No.	T
		FH62U407T-E	407+ Week No.	T
		FH62U408T-E	408+ Week No.	T
		FH62U409T-E	409+ Week No.	T
		FH62U500T-E	500+ Week NO.	T
SOT-23-3L反向		FH62V30T-E	V30+ Week No.	T

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SOT-89-3L		FH62R105T-E	105+ Week No.	T
		FH62R106T-E	106+ Week No.	T
		FH62R107T-E	107+ Week No.	T
		FH62R108T-E	108+ Week No.	T
		FH62R109T-E	109+ Week No.	T
		FH62R200T-E	200+ Week No.	T
	-30°C ~ 80°C	FH62R201T-E	201+ Week No.	T
		FH62R202T-E	202+ Week No.	T
		FH62R203T-E	203+ Week No.	T
		FH62R204T-E	204+ Week No.	T
		FH62R205T-E	205+ Week No.	T
		FH62R206T-E	206+ Week No.	T
		FH62R207T-E	207+ Week No.	T
		FH62R208T-E	208+ Week No.	T
		FH62R209T-E	209+ Week No.	T
		FH62R300T-E	300+ Week No.	T
		FH62R301T-E	301+ Week No.	T
		FH62R302T-E	302+ Week No.	T
		FH62R303T-E	303+ Week No.	T
		FH62R304T-E	304+ Week No.	T
		FH62R305T-E	305+ Week No.	T
		FH62R306T-E	306+ Week No.	T
		FH62R307T-E	307+ Week No.	T
		FH62R308T-E	308+ Week No.	T
		FH62R309T-E	309+ Week No.	T
		FH62R400T-E	400+ Week No.	T
		FH62R401T-E	401+ Week No.	T
		FH62R402T-E	402+ Week No.	T
		FH62R403T-E	403+ Week No.	T
		FH62R404T-E	404+ Week No.	T
		FH62R405T-E	405+ Week No.	T
		FH62R406T-E	406+ Week No.	T
		FH62R407T-E	407+ Week No.	T
		FH62R408T-E	408+ Week No.	T
		FH62R409T-E	409+ Week No.	T
		FH62R500T-E	500+ Week No.	T

FH62 **U** **XXX** **T** - **E**

- **E**: Lead Free 無鉛
- **T**: Packing Type 包裝形式 T: Tape 編帶 B: Bulk 散裝
- **XXX**: Voltage

105-109	1.5V-1.9V
200-209	2.0V-2.9V
300-309	3.0V-3.9V
400-409	4.0V-4.9V
500	5.0V

- **U**: Package 封裝形式 U： SOT-23-3L
  R： SOT-89-3L
  V： SOT-23-3L 反向
- **FH62**: Type 產品型號

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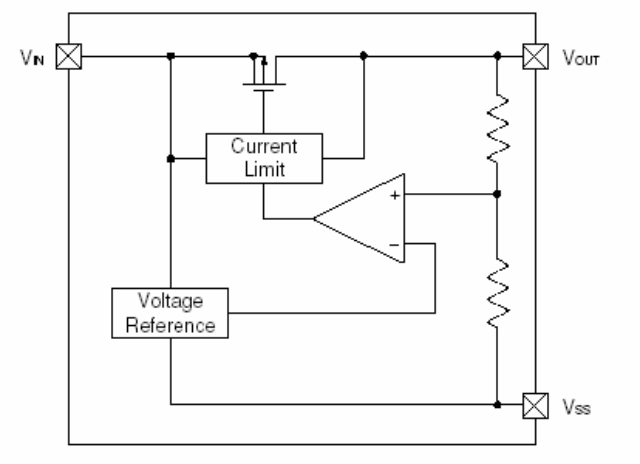
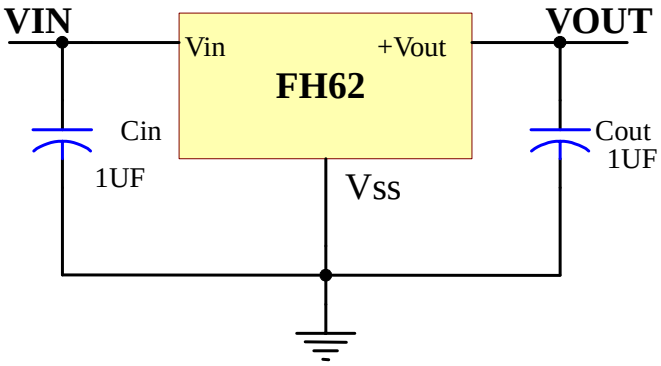
BLOCK DIAGRAM 功能結構圖



MAXIMUM RATINGS (T_a=25℃) 最大額定值 (Note 1)					
Characteristic 特性參數		Symbol 符號	Rating 額定值		Unit 單位
			Min 最小	Max 最大	
Input Voltage 輸入電壓		V_{IN}	-	10	V
Output Current 輸出電流		I_{OUT}	-	250	mA
Oupput Voltage 輸出電壓		Vout	1.5	5.0	V
Continuous Total Power Dissipation 持續總功耗	SOT-23	Pd	-	150	mW
	SOT-89		-	500	
Operating Ambient Temperature 操作環境溫度		Topr	-40	85	°C
Storage Temperature Range 儲存溫度		Tstg	-40	125	°C
Note 1: Exceeding these ratings could cause damage to the device. All voltages are with respect to Ground. Currents are positive into, negative out of the specified terminal.					

Typical Applications 典型應用圖例



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ELECTRICAL CHARACTERISTICS 電特性

Unless otherwise specified, V_{IN} = V_{OUT} +1V, $V_{IN(max)}$ = 10V, Cin=1UF,Cout=1UF, T_J = 25°C.
如無特殊說明，$V_{IN(min)}$ = V_{OUT} +1V, $V_{IN(max)}$ = 10V, Cin=1UF,Cout=1UF 溫度爲 25°C。

Parameter 參數	Symbol 符號	Test Conditions 測試條件	Min. 最小值	Typ. 典型值	Max. 最大值	Unit 單位
Output Voltage 參考電壓	V_{OUT}	I_O = 40mA, V_{IN} = V_{OUT} +1V	-2		+2	%
Maxmum Output Current	Iout (max)	V_{IN}=3.0V, for V_{OUT}≥1.8V	100		-	mA
		V_{IN}=4.0V, for V_{OUT}≥2.7V	150		-	
		V_{IN}=5.0V, for V_{OUT}≥3.6V	200		-	
		V_{IN}=6.0V, for V_{OUT}≥4.5V	250		-	
Load Stability	$\triangle V_{OUT}$	V_{IN} =V_{OUT} +1V 1mA≤I_{OUT}≤100mA		45	90	mV
Input-Output Voltage Differential	Vdif1	I_{OUT}=60mA, for V_{OUT}≥1.8V		180	360	mV
		I_{OUT}=80mA, for V_{OUT}≥2.7V				
		I_{OUT}=100mA, for V_{OUT}≥3.6V		170	330	mV
		I_{OUT}=100mA, for V_{OUT}≥4.5V		120	300	mV
	Vdif2	I_{OUT}=120mA, for V_{OUT}≥1.8V		400	700	mV
		I_{OUT}=160mA, for V_{OUT}≥2.7V				
		I_{OUT}=200mA, for V_{OUT}≥3.6V		400	630	mV
		I_{OUT}=200mA, for V_{OUT}≥4.5V		380	600	mV
Supply Current	Iss	V_{IN} =V_{OUT} +1V		2.0	4.5	μA
Input Stability	$\frac{\triangle V_{OUT}}{\triangle V_{IN} * V_{OUT}}$	I_{OUT}=40mA V_{OUT} +1V≤V_{IN} ≤10V		0.2	0.3	%/V
Input Voltage	V_{IN}				10	V
Output Voltage Temperature Characteristics	$\frac{\triangle V_{OUT}}{\triangle T_{opr} * V_{OUT}}$	I_{OUT}=40mA -40℃≤T_{opr} ≤85℃		±100		Ppm/℃