

Dual 300mA High Speed LDO

● Features

- High Ripple Rejection : 70dB (1 kHz)
- Low Power Consumption : 40 μ A (TYP.)
- Maximum Output Current : 300mA
- Standby Current : less than 0.1 μ A
- Internal protector : current limiter and short protector

● Applications

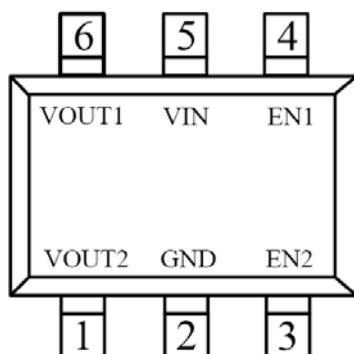
- Blue Tooth Headsets
- Portable Audio Players
- Mobile Phones
- Wireless and DSL Modems
- Digital Cameras
- Portable Instruments

● General Description

The FS3403 series are highly accurate, Dual, low noise, CMOS LDO voltage regulators. Performance features of the series includes low output noise, high ripple rejection ratio, low dropout and very fast turn-on times.

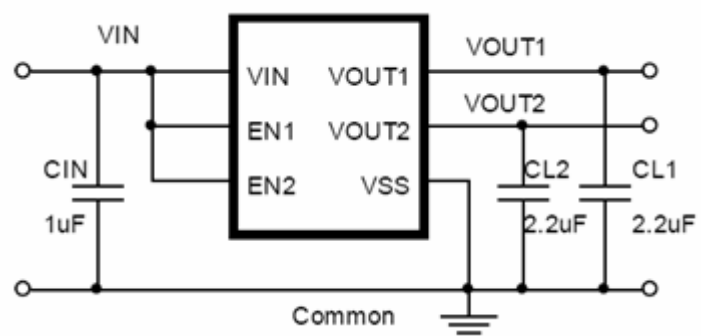
The FS3403 includes a reference voltage source, error amplifiers, driver transistors, current limiters and phase compensators internally. The FS3403's current limiter's foldback circuit also operates as a short protect for the output current limiter. The output voltage for each regulator is set independently by laser trimming. Voltages are selectable in 50mV steps within a range of 1.3V to 5.0V. The EN function allows the output of each regulator to be turned off independently, resulting in greatly reduced power consumption.

● Pin Configurations



(TOP VIEW)
SOT23-6L

● Typical Application Circuit



● Absolute Maximum Ratings

Parameter	Symbol	Maximum Rating	Unit
Input Voltage	V _{IN}	V _{SS} -0.3~V _{SS} +10	V
	V _{EN}	V _{SS} -0.3~V _{IN} +0.3	
Output Voltage	V _{OUT}	V _{SS} -0.3~V _{IN} +0.3	
Output Current	I _{OUT1} +I _{OUT2}	700	mA
Power Dissipation	P _D	SOT-23-6L 250	mW
Operating Ambient Temperature	T _{opr}	-40~+85	°C
Storage Temperature	T _{stg}	-40~+125	

Note1: Production test at +25°C. Specifications over the temperature range are guaranteed by design and characterization.

● Electrical Characteristics

Parameter	Symbol	CONDITION	MIN	TYP	MAX	UNIT
Output Voltage	V _{OUT(E)}	V _{IN} =V _{OUT(S)} +1.0 V, I _{OUT} =10 mA	V _{OUT(S)} ×0.98	V _{OUT(S)}	V _{OUT(S)} ×1.02	V
Output Current	I _{OUT}	V _{IN} ≥V _{OUT(S)} +1.0 V	300	—	—	mA
Dropout Voltage	V _{drop}	I _{OUT} =50 mA	—	0.06	0.10	V
		I _{OUT} =100 mA	—	0.15	0.20	
Line Regulations	$\frac{\Delta V_{OUT1}}{\Delta V_{IN} \cdot V_{OUT}}$	V _{OUT(S)} +0.5 V ≤ V _{IN} ≤ 8 V I _{OUT} =10 mA	—	0.01	0.2	%/V
Load Regulation	ΔV _{OUT2}	V _{IN} =V _{OUT(S)} +1.0 V 1.0 mA ≤ I _{OUT} ≤ 100 mA	—	15	50	mV
Output Voltage Temperature Characteristics	$\frac{\Delta V_{OUT}}{\Delta T_a \cdot V_{OUT}}$	V _{IN} =V _{OUT(S)} +1.0 V, I _{OUT} =10 mA -40°C ≤ T _a ≤ 85°C	—	±100	—	ppm/°C
Supply Current	I _{SS1}	V _{IN} =V _{OUT(S)} +1.0 V	—	40	80	μA
Standby Current	I _{STB}	V _{IN} =V _{EN} =V _{OUT(T)} +1V, V _{EN} =V _{SS}	—	0.01	1	μA
Input Voltage	V _{IN}	—	2.0	—	10	V
Ripple-Rejection	PSRR	V _{IN} =V _{OUT(S)} +1.0 V, f=1 kHz V _{rip} =0.5 V _{rms} , I _{OUT} =30 mA	—	70	—	dB
Short-circuit Current	I _{short}	V _{IN} =V _{OUT(S)} +1.0 V, V _{IN} =V _{EN}	—	30	—	mA
Current limiter	I _{lim}	V _{IN} =V _{EN} =V _{OUT(T)} +1V	—	450	—	mA
CE "High" Voltage	V _{CEH}		1.3		V _{IN}	V
CE "Low" Voltage	V _{CEL}				0.25	V
CE "High" Current	I _{CEH}	V _{IN} =V _{EN} =V _{OUT(T)} +1V	-0.1		0.1	μA
CE "Low" Current	I _{CEL}	V _{IN} =V _{EN} =V _{OUT(T)} +1V, V _{EN} =V _{SS}	-0.1		0.1	μA

● Ordering Information

FS3403 ①②③④⑤⑥⑦⑧

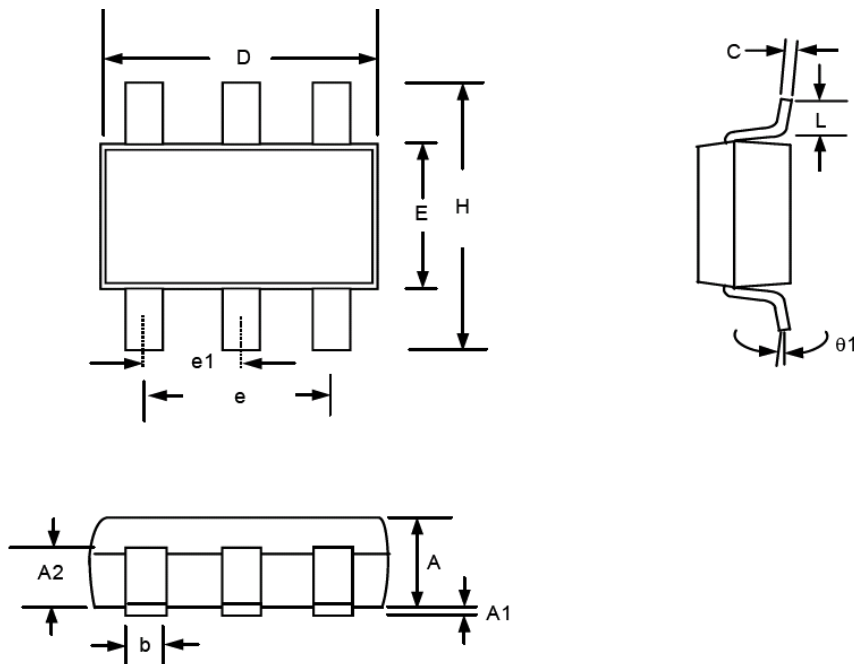
Designator	Description	Symbol	Description
①	Regulator1 EN type	E	Active 'High' (pull-down resistor built in)
		F	Active 'High' (no pull-down resistor built in)
		G	Active 'Low' (pull-up resistor built in)
		H	Active 'Low' (no pull-up resistor built in)
②	Regulator2 EN type	E	Active 'High' (pull-down resistor built in)
		F	Active 'High' (no pull-down resistor built in)
		G	Active 'Low' (pull-up resistor built in)
		H	Active 'Low' (no pull-up resistor built in)
③④	Regulator1 Output Voltage	13~50	eg. 30 represents 3.0V
⑤⑥	Regulator2 Output Voltage	13~50	eg. 30 represents 3.0V
⑦	Packaging Types	M	SOT-23-6L(Vout1>Vout2)
		N	SOT-23-6L(Vout1<Vout2)
⑧	Device Orientation	R	Embossed tape: Standard feed
		L	Embossed tape: Reverse feed

● Pin Description

Pin Number	Pin Name	Function
SOT-23-6L		
4	EN1	ON/OFF Control1
5	VIN	Power Input
3	EN2	ON/OFF Control2
1	VOUT2	Output2
2	GND	Ground
6	VOUT1	Output 1

FS3403

- Package Information



Symbol	Dimension mm			Dimension in inch		
	Min	Nom	Max	Min	Nom	Max
A	1.00	1.10	1.30	0.039	0.043	0.051
A1	0.00		0.10	0.000		0.004
A2	0.70	0.80	0.90	0.028	0.031	0.035
b	0.35	0.40	0.50	0.014	0.016	0.020
C	0.10	0.15	0.25	0.004	0.006	0.010
D	2.70	2.90	3.10	0.106	0.114	0.122
E	1.40	1.60	1.80	0.055	0.063	0.071
e		1.90(TYP)			0.075(TYP)	
H	2.60	2.80	3.00	0.102	0.110	0.118
L	0.37			0.015		
$\theta 1$	1°	5°	9°	1°	5°	9°