



## FEATURES

- Maximum output current: 150mA
- Highly accurate: Output voltage +/- 2%
- Low power consumption.
- On-chip Protections: Thermal, Short Circuit .
- Small input/output differential: 0.165V at 150mA

## APPLICATIONS

- Battery-Operated Systems
- Portable Computers
- Portable Cameras and Video Recorders
- Reference Voltage Sources
- Instrumentation
- Pagers

## PRODUCT DESCRIPTION

The TC1185 series is a low-dropout linear regulators. There are devices designed specifically for battery-operated Systems. Ground current is very small (2uA - Typ), that significantly extending battery life. Low power consumption and high accuracy is achieved through CMOS and programmable fuse technologies. Output voltage: 2.0V to 6.0V . The  $\mu$ A1075 consists of a high-precision voltage reference, an error correction circuit, and a current limited output driver. With good transient responses, output remains stable even during load changes. The SHDN input enables the output to be turned off , resulting in reduced power consumption.

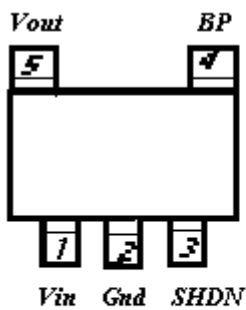
Also, the TC1185 having high ripple rejection ratios, the series can be used with power supply noise. A 470pF capacitor from the Bypass input to ground reduces noise present on the internal reference, which in turn significantly reduces output noise. If output noise is not a concern, this input may be left unconnected. Larger capacitor values Cbp be used, but results in a longer time period to rated output voltage when power is initially applied.

The TC1185 incorporates both over-temperature and over-current protection. SOT23-5 (300mW) and SOT-89-5 (500mW) packages are available.

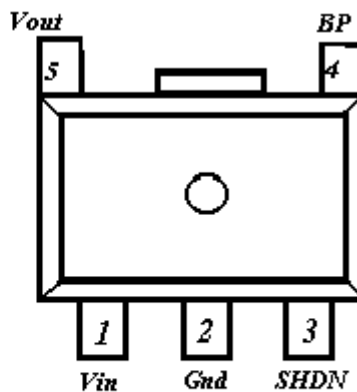
## Absolute Maximum Ratings

PARAMETER		SYMBOL	RATINGS	UNITS
Input Voltage		Vin	6.5	V
Output Current		Iout	150	mA
Output Voltage		Vout	Vss-0.3~Vin+0.3	V
Continuous Total Power Dissipation	SOT-23-5	Pd	300	mW
	SOT-89-5		500	
Operating Ambient Temperature		Topr	-30 ~ +80	°C
Storage temperature		Tstg	-40 ~ +125	°C

## Pin Configuration



SOT-23-5



SOT-89-5

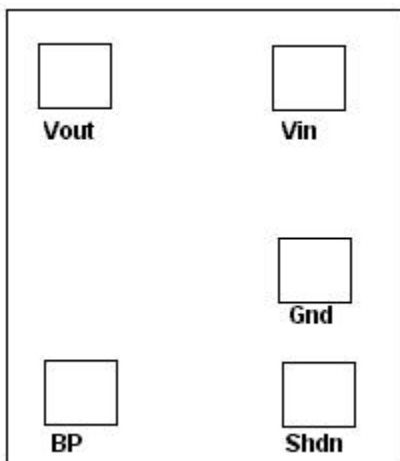


# FTC1185 Low Dropout CMOS Voltage Regulators

## ELECTRICAL CHARACTERISTICS

(at  $T_a = 25^\circ\text{C}$ ,  $V_{IN} = V_{out} + 0.5\text{V}$ ; unless otherwise noted)

Parameter	Conditions	Min	Typ	Max	Units
Output Voltage Accuracy	$I_o = 1\text{mA}$ $I_o = 0$ to $150\text{mA}$	-1.4 -3%		+1.4% +2%	V
Line Regulation $\Delta V_{out}/\Delta V_{in} V_{out}$	$I_o = 1\text{mA}$ , $(V_{out} + 0.1\text{V}) < V_{in} < 6.5\text{V}$	-0.3	0.05	0.3	%/V
Load Regulation	$0\text{mA} \leq I_o \leq 120\text{mA}$ $C_{out} = 1\mu\text{F}$		0.01	0.04	%/mA
Dropout Voltage	$I_o = 150\text{mA}$		165	250	mV
Maximum Output Current	$V_{in} = 5\text{V}$ $V_{out} = 0.96 * V_{rating}$	150	400		mA
Current Limit		160			mA
Shutdown Exit Delay	$C_{bp} = 0\mu\text{F}$ $C_{out} = 1\mu\text{F}$ $I_o = 100\text{mA}$		600		$\mu\text{sec}$
Shutdown Input Bias Current	$V_{SHDN} = V_{in}$			100	nA
Shutdown Supply Current	$V_{SHDN} = \text{Gnd}$		0.01	1	$\mu\text{A}$
Shutdown Input Threshold Low	$V_{in} = 2.5$ to $5.5\text{V}$			0.4	V
Shutdown Input Threshold High	$V_{in} = 2.5$ to $5.5\text{V}$	2			V
Ground Pin Current	$I_{out} = 0\text{mA} \dots 150\text{mA}$		2	5	$\mu\text{A}$



### Pad Location Coordinates (The center of pads)

Pad	X ( $\mu\text{m}$ )	Y ( $\mu\text{m}$ )
Vout	149.5	1184
Vin	709	1200
GND	765	375
SHDN	765	105
BP	105	105

Chip size 0.95x1.4 mm