



FC61C

Standard Voltage Detectors

Description

The FC61C series are highly precise, low power consumption voltage detectors, manufactured using CMOS process. The detection voltage fixed internally with an accuracy of $\pm 2\%$. CMOS output form is available. Ultra-low current consumption can meet demand from the portable device applications.

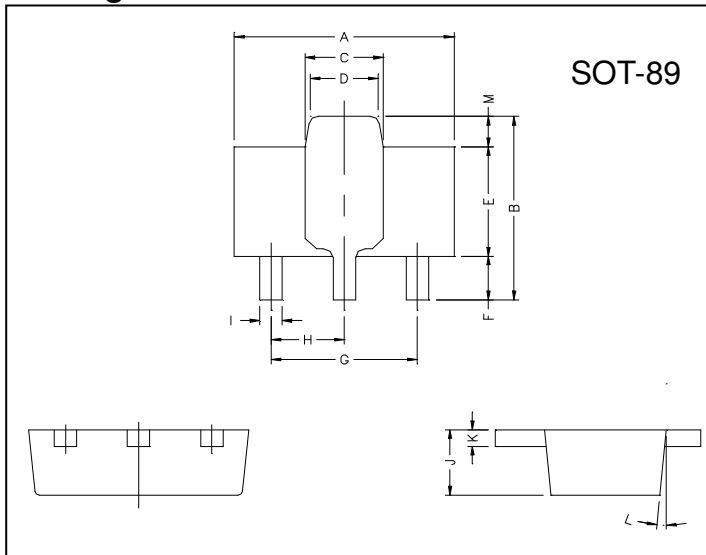
Features

- Ultra-low current consumption: $0.8\mu\text{A}$ (@ $V_{in}=1.5\text{V}$)
- Operation voltage range: 1.2V to 6.0V
- Detection voltage: 1.5V to 5.5V (0.1V step)
- Hysteresis characteristics: 5%
- High accurate detection voltage: $\pm 2\%$

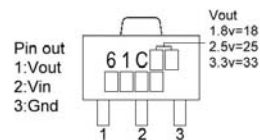
Applications

- Power monitor for portable equipment such as notebooks, digital cameras, PDA
- Constant voltage power monitor for cameras, video equipment and communication devices;
- Detection of power failure
- Power monitor for microcomputers and reset for CPUs

Package Dimensions

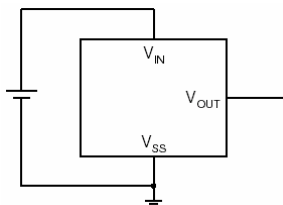


Marking :



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	4.4	4.6	G	3.00	REF.
B	4.05	4.25	H	1.50	REF.
C	1.50	1.70	I	0.40	0.52
D	1.30	1.50	J	1.40	1.60
E	2.40	2.60	K	0.35	0.41
F	0.89	1.20	L	5°	TYP.
			M	0.70	REF.

Typical Application Circuit



Absolute Maximum Ratings $T_a=25^\circ\text{C}$

Parameter	Symbol	Ratings	Unit
Input Voltage	V_{IN}	6	V
Output Current	I_{OUT}	50	mA
Power Dissipation	P_D	500	mW
Operating Ambient Temperature	T_{opr}	$-40 \sim +85$	$^\circ\text{C}$
Storage Temperature	T_{stg}	$-60 \sim +100$	$^\circ\text{C}$

Caution: The absolute maximum ratings are rated values exceeding which the product could suffer physical damage. Therefore these values must not be exceeded under any conditions.



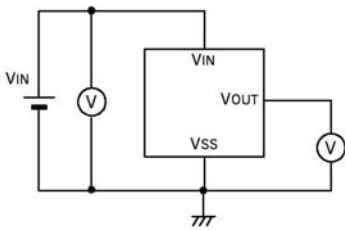
FC61C CMOS Voltage Detector

Electrical Characteristics $T_a=25^\circ\text{C}$

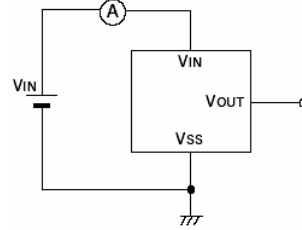
Parameter	Symbol	Condition	Min	TYP	Max	Unit
Detection Voltage	V_{DET}		$V_{DET} * 0.98$	V_{DET}	$V_{DET} * 1.02$	V
Hysteresis Voltage Range	V_{HYS}		$V_{DET} * 0.02$	$V_{DET} * 0.05$	$V_{DET} * 0.09$	V
Supply Current	I_{SS}	$V_{IN}=1.5\text{V}$	-	0.8	2.4	μA
		$V_{IN}=2.0\text{V}$	-	0.9	2.4	
		$V_{IN}=3.0\text{V}$	-	1.0	2.4	
		$V_{IN}=4.0\text{V}$	-	1.1	2.4	
		$V_{IN}=5.0\text{V}$	-	1.2	2.4	
		$V_{IN}=6.0\text{V}$	-	1.3	2.7	
Operating Voltage	V_{IN}		1.2	-	6	V
Output Current	I_{OUT}	$V_{DS}=2.1\text{V}, V_{IN}=6\text{V}$	1.5	8	50	mA
Detection Voltage Temperature Coefficient		$T=-40^\circ\text{C}$ to 85°C	-	± 100	± 350	ppm/ $^\circ\text{C}$

Test Circuit

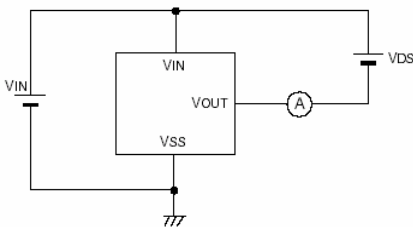
Circuit1



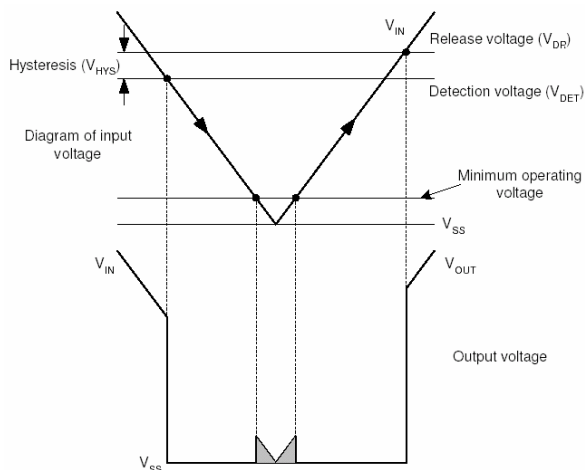
Circuit2



Circuit3



Time Characteristics

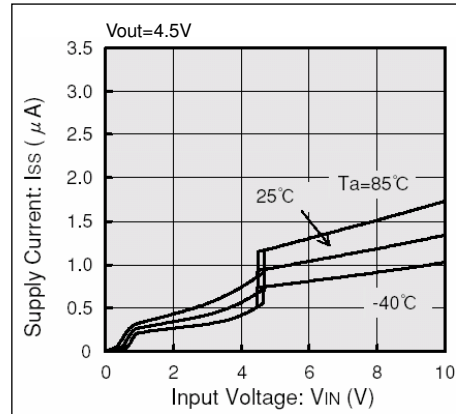
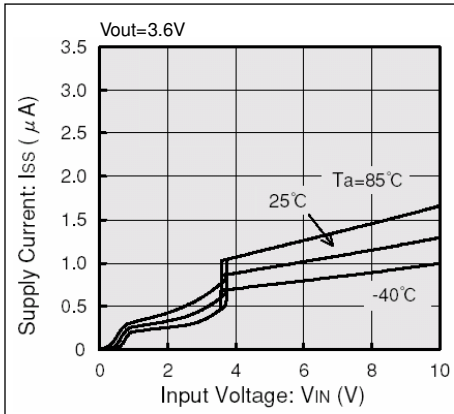
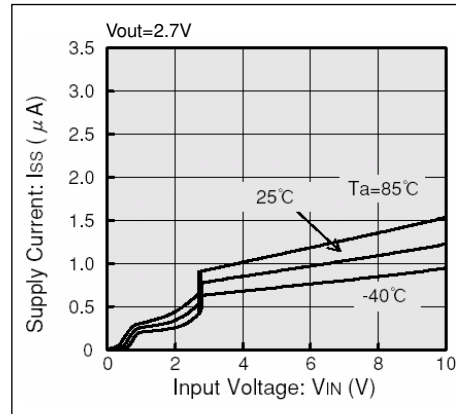
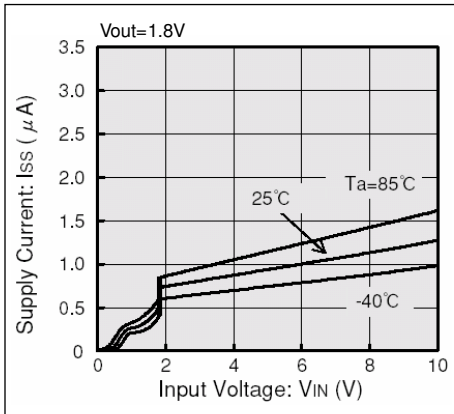


Note: For voltage V_{IN} less than minimum operating voltage (shaded region on the diagram), voltage of output terminal is undefined for CMOS output product.

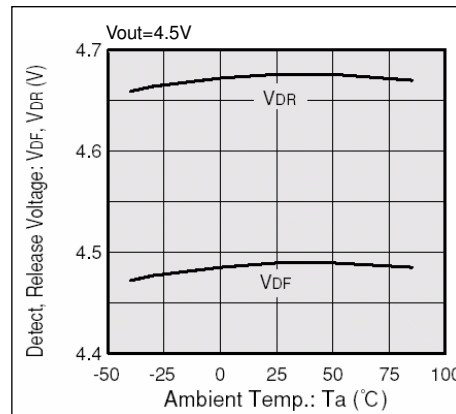
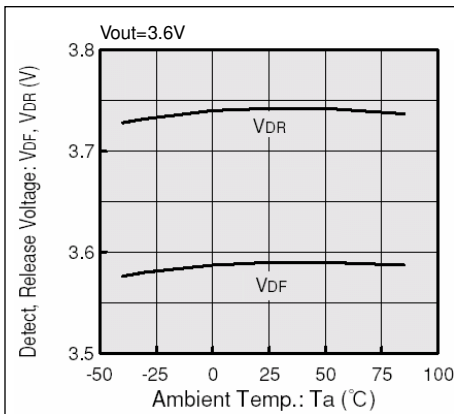
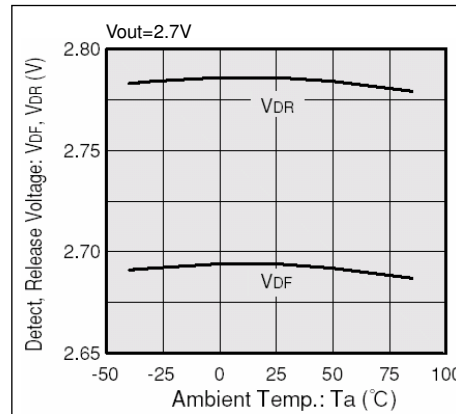
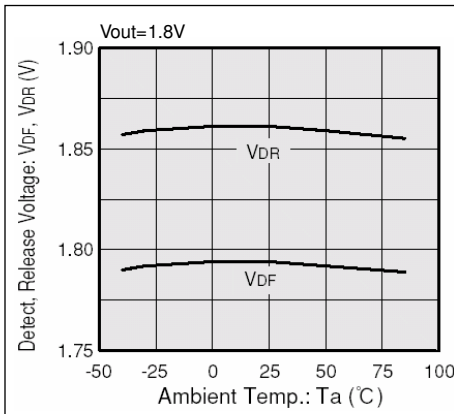


Characteristics Curve

(1) Supply Current vs. Input Voltage



(2) Detect, Release Voltage vs. Ambient Temperature





(3) Driver Output Current vs Input Voltage_{CC}

