

3-Pin Microprocessor Reset Circuits

Features

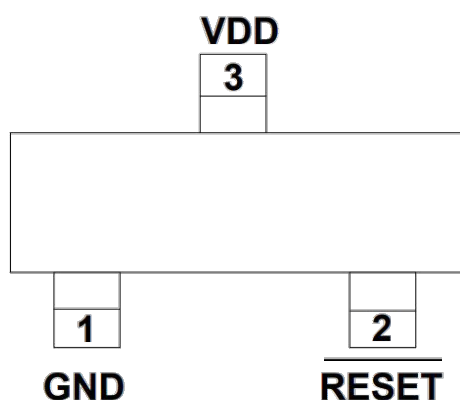
- Wide Operation Voltage Range of 1V to 10V
- Typical Quiescent Current of 3 μ A
- No External Components
- V_{CC} Transient Immunity
- Correct Logic Output Guaranteed to V_{CC}=1.0V
- Push-Pull Low Active Reset Output
- Packages SOT23

Applications

- Computers
- Embedded Systems
- Battery-Powered Equipments
- Intelligent Instruments
- CPU and Logic Circuit Reset
- Power Fail Detectors
- Automotive

Pin Definition

SOT-23



Ordering Information

FC809SS3

PACKAGE TYPE
S3:SOT-23

RESET VOLTAGE:

L=4.63V
M=4.38V
J=4.00V
T=3.08V
S=2.93V
R=2.63V
Z=2.32V

PIN CONFIGURATION

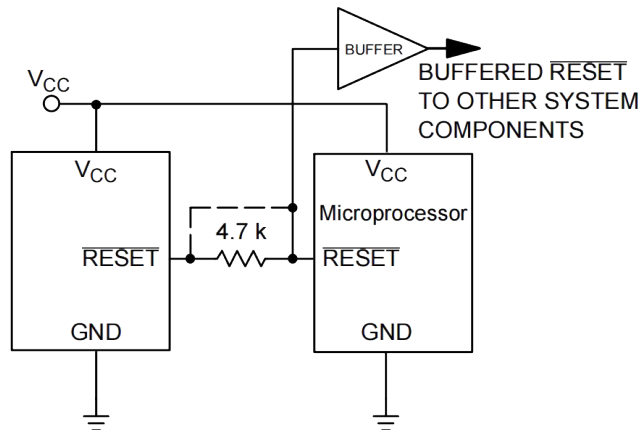
PIN	NAME	FUNCTION
1	GND	Ground
2	<u>RESET</u>	<u>RESET</u> output remains low while VCC is below the reset voltage threshold, and for a reset timeout period after VCC rises above reset threshold
3	VCC	Supply Voltage .

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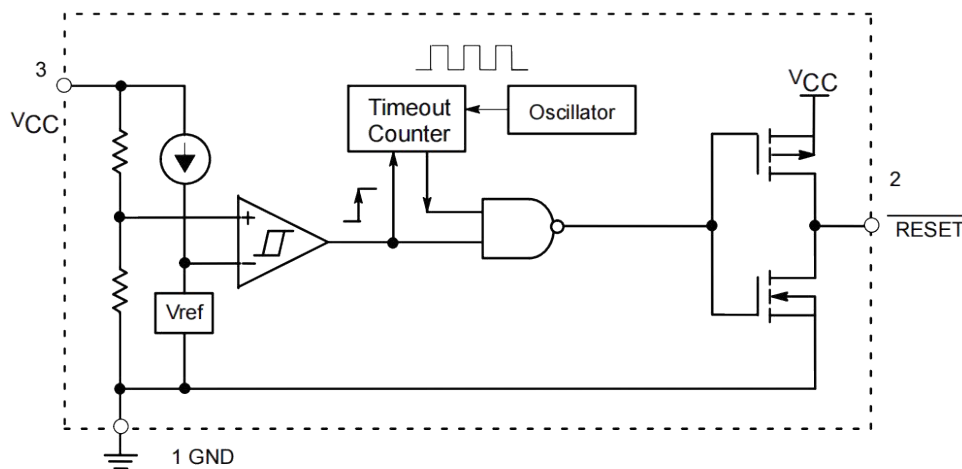
Absolute Maximum Ratings (Note 1)

Symbol	Parameter	Value	UNIT
VCC	Any pin with respect to ground	-0.3 to +6.0	V
ICC	Input Current, VCC	20	mA
IO	Output Current, $\overline{\text{RESET}}$	20	mA
	Rate of Rise, VCC	100	V/ μ s
PD	Continuous Power Dissipation	250	mW
TA	Operating Temperature Range	-40 to +85	$^{\circ}\text{C}$
TSTG	Storage Temperature Range	-65 to +105	$^{\circ}\text{C}$
$R_{\theta \text{ JC}}$	Thermal Resistance from Junction to Case	110	$^{\circ}\text{C/W}$
$R_{\theta \text{ JA}}$	Thermal Resistance from Junction to Ambient	250	$^{\circ}\text{C/W}$

TYPICAL APPLICATION CIRCUIT



FUNCTIONAL BLOCK DIAGRAM



Series Complementary Active-Low Output



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Electrical Characteristics

(VCC=full range, TA=-40°C to +85°C , unless otherwise noted. Typical values are at TA=+25°C , VCC=5V for L/M/J versions, VCC=3.3V for T/S versions, VCC=3V for R version, and VCC=2.5V for Z version.) Note1

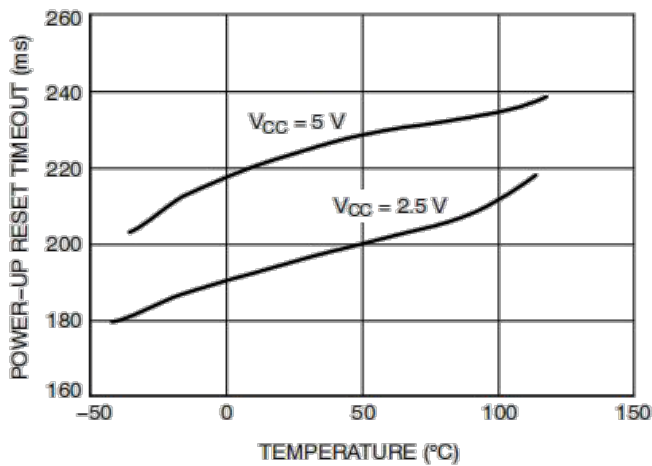
Symbol	Parameter	Conditions		Min	Typ	Max	Unit
	V _{CC} Range	T _A =0°C to +70°C		1.0		5.5	V
I _{CC}	Supply Current	V _{CC} <5.5V, L/M/J			3	5	μA
		V _{CC} <3.6V, R/S/T/Z			3	5	
V _{TH}	Reset Threshold	L	T _A =+25°C	4.49	4.63	4.72	V
			T _A =-40°C to +85°C	4.44		4.76	
		M	T _A =+25°C	4.29	4.38	4.51	
			T _A =-40°C to +85°C	4.25		4.55	
		J	T _A =+25°C	3.90	4.00	4.10	
			T _A =-40°C to +85°C	3.86		4.14	
		T	T _A =+25°C	3.02	3.08	3.18	
			T _A =-40°C to +85°C	2.99		3.21	
		S	T _A =+25°C	2.83	2.93	2.97	
			T _A =-40°C to +85°C	2.80		3.00	
		R	T _A =+25°C	2.54	2.63	2.67	
			T _A =-40°C to +85°C	2.51		2.69	
		Z	T _A =+25°C	2.24	2.32	2.36	
			T _A =-40°C to +85°C	2.22		2.38	
Reset Threshold Tempco					30		ppm/°C
V _{CC} to Reset Delay		V _{CC} =V _{TH} to (V _{TH} -100mV)			10		μs
Reset Active Timeout Period		T _A =-40°C to +85°C		140	240	360	ms
V _{OL}	RESET Output Voltage Low (Push-Pull Active Low)	V _{CC} =V _{TH} min, I _{SINK} =1.2mA,S/T/Z				0.3	V
		V _{CC} =V _{TH} min, I _{SINK} =3.2mA,J/L/M				0.4	
		V _{CC} ≤1.0V, I _{SINK} =50μA				0.3	
V _{OH}	RESET Output Voltage High (Push-Pull Active Low)	V _{CC} >V _{TH} max, I _{SOURCE} =500μA, S/T/Z		0.8V _{CC}			V
		V _{CC} >V _{TH} max, I _{SOURCE} =800μA, J/L/M		V _{CC} -1.5			

Note 1: Production testing done at TA=+25°C ; limits over temperature guaranteed by design only.

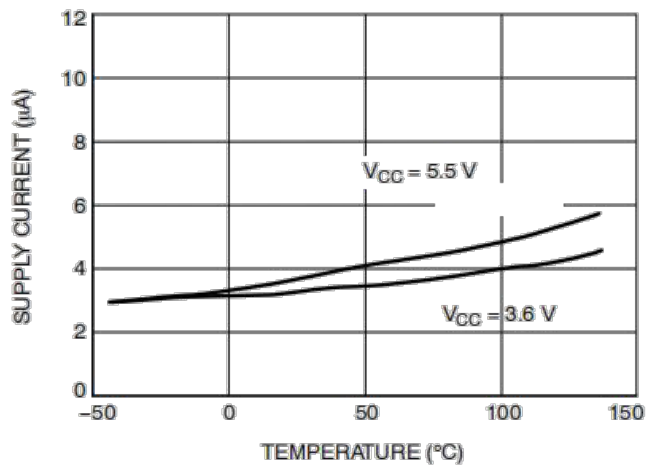
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Typical Operating Characteristics

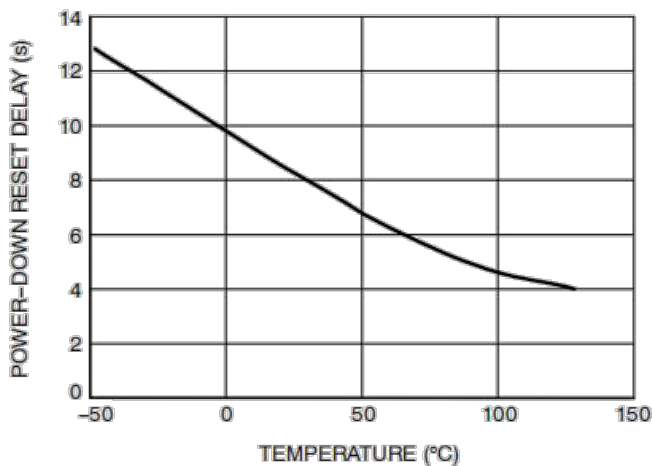
(VCC = Full range, TA = -40°C to +85°C unless otherwise noted. Typical values at TA = +25°C and VCC = 5 V for the L/M/J versions, VCC = 3.3 V for the T/S versions, VCC = 3 V for the R version and VCC = 2.5 V for the Z version.)



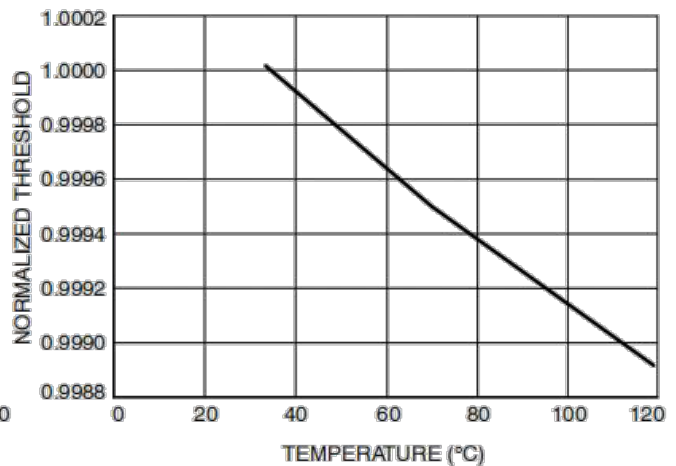
Power-Up Reset Timeout vs. Temperature



Supply Current vs. Temperature (No Load,)



Power-Down Reset Delay vs. Temperature

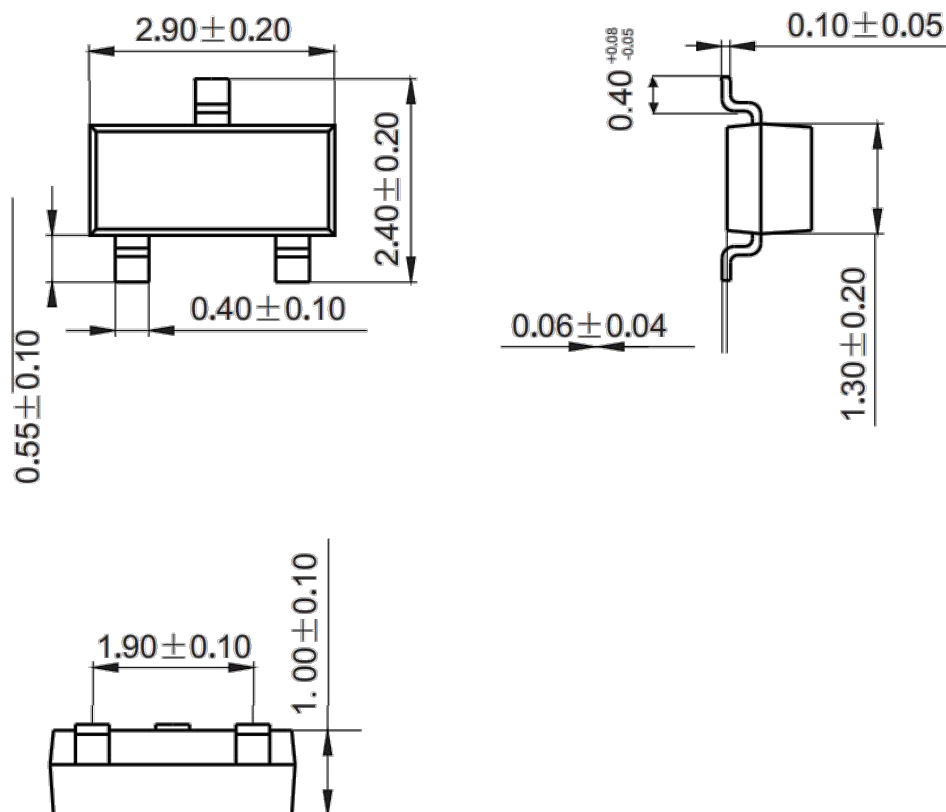


Normalized Reset Threshold vs. Temperature

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Package Outline Dimensions (unit: mm)

SOT23



Mounting Pad Layout (unit: mm)

