LR8808 Micropocessor Reset Circuits

General Description

The LR8808 series are ultar-low current voltage detectors,which can be used to monitor the power supplies in microprocessor and digital systems. There are two output forms,and Nch open-drain and CMOS output are available.

The LR8808 series are available SOT23(-3 -5) package.Performance is specified for -40℃to +85℃ temperature range.

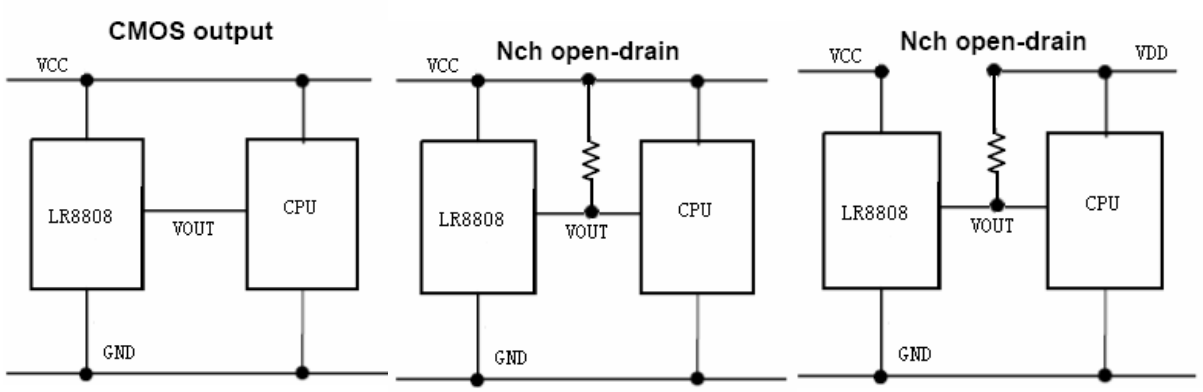
Features

★0.95V to 8V input range
★Reset Threshold:1.5V～6.0V in 0.1V increments
★High-precision detection voltage: ±2.0 %
★Ultra-low current consumption: 1.0μA@3.5V(typ)
★SOT23-3 SOT23-5 package
★NMOS Open Drain and CMOS Output (Active Low)
★40℃ to +85℃ junction temperature range for operation

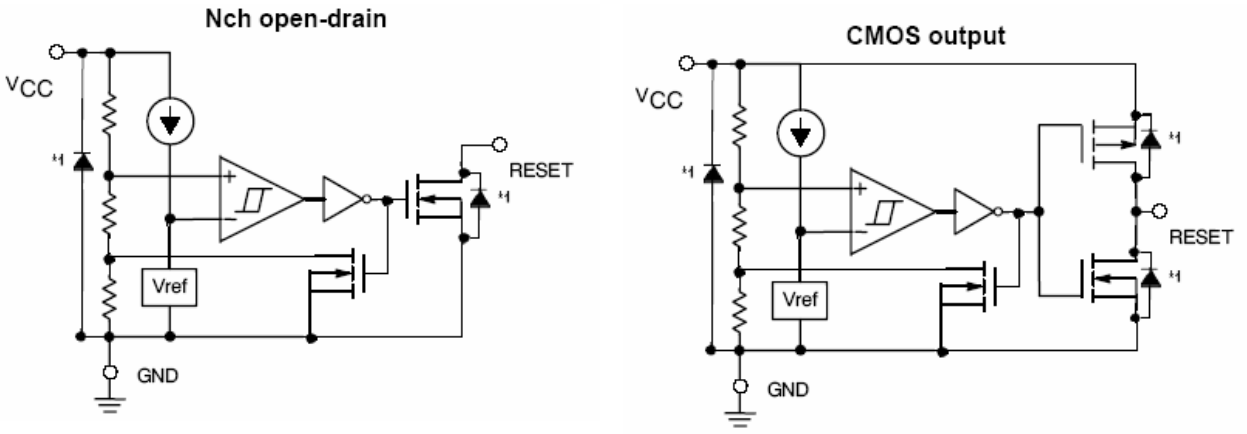
Applications

★Battery-Powered Systems
★Power Supply Monitoring
★Handheld and Portable Equipment
★Processor Supervisor Reset

Typical Application Circuit



Block Diagram(*1: parasitic diode)

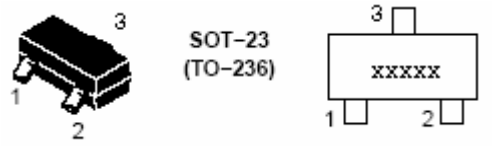


Pin Descriptions

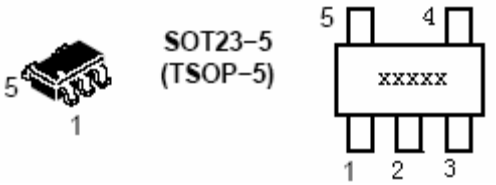
	SOT23		SOT23-5
Pin No	A	M	R
1	Gnd	Vout	Vout
2	Vout	Gnd	Vcc
3	Vcc	Vcc	Gnd
4	—	—	No connection
5	—	—	No connection

Connection Diagrams

SOT23 package



SOT23-5 package



Ordering Information

The package type,the detector threshold,the output type and the taping type of LR8808 series can be designated at user's request as following:

LR8808-x.xxx
a bc

CODE	SYMBOL	DESCRIPTION
a	1.5~6.0	Detect Voltage
b	C	CMOS Output
	N	Nch open drain Output
c	A/M	Package:SOT23
	R	Package:SOT23-5

Absolute Maximum Ratings

V_{IN}	Gnd to Gnd +10V
V_{OUT}	Gnd to Gnd +10V
Junction Temperature	−40°C to +85°C
Storage Temperature	−40°C to +125°C
Power Dissipation	
SOT23	250mW

Operating Ratings

V_{IN}	0.95V to 8V
V_{OUT}	0 to V_{IN}
Junction Temperature	−40°C to +85°C
Junction-to-Ambient Thermal Resistance (θ_{JA})	
SOT23	301°C /W
SOT23-5	220°C /W

Electrical Characteristics

Unless otherwise specified,Typical values and limits appearing in standard typeface are for T_a = 25°C.

Symbol	Item	Conditions		Min	Type	Max	Unit
$-V_{DET}$ (Figure1)	Detection voltage	—		$-V_{DET(S)}$ ×0.98	$-V_{DET(S)}$	$-V_{DET(S)}$ ×1.02	V
V_{HYS} (Figure1)	Hysteresis Width	—		$-V_{DET(S)}$ ×0.02	$-V_{DET(S)}$ ×0.05	$-V_{DET(S)}$ ×0.08	V
Iss	Current Consumption	$V_{CC} = -V_{DET}+0.5V$	LR8808－2.0～2.6 C/N	—	1.0	2.0	μA
			LR8808－2.6～3.9 C/N	—	1.2	2.5	μA
			LR8808－3.9～6.0 C/N	—	1.5	3.0	μA
Vcc	Operating voltage	—		0.95	—	8	V
I_{OUT}	Output Current	NMOS: V_{OUT}=0.5V Vcc=$-V_{DET}$−0.5	LR8808－2.0～2.6 C/N	3.0	13.0	—	mA
			LR8808－2.6～3.9 C/N	3.0	15.0	—	mA
			LR8808－3.9～6.0 C/N	3.0	18.0	—	mA
		PMOS: Vcc−V_{OUT}=0.5V Vcc=$-V_{DET}$+0.5	LR8808－2.0～2.6 C/N	1.5	4.0	—	mA
			LR8808－2.6～3.9 C/N	1.5	6.0	—	mA
			LR8808－3.9～6.0 C/N	1.5	8.0	—	mA
I_{LEAK}	Leakage current	Only for NMOS open-drain output products, V_{CC}=8.0 V, V_{OUT}=8.0 V			—	0.1	μA
	Temperature coefficient	Ta=−40°C to +85°C		—	±120	±360	ppm/°C
T_{PLH}	Delay time					200	μs

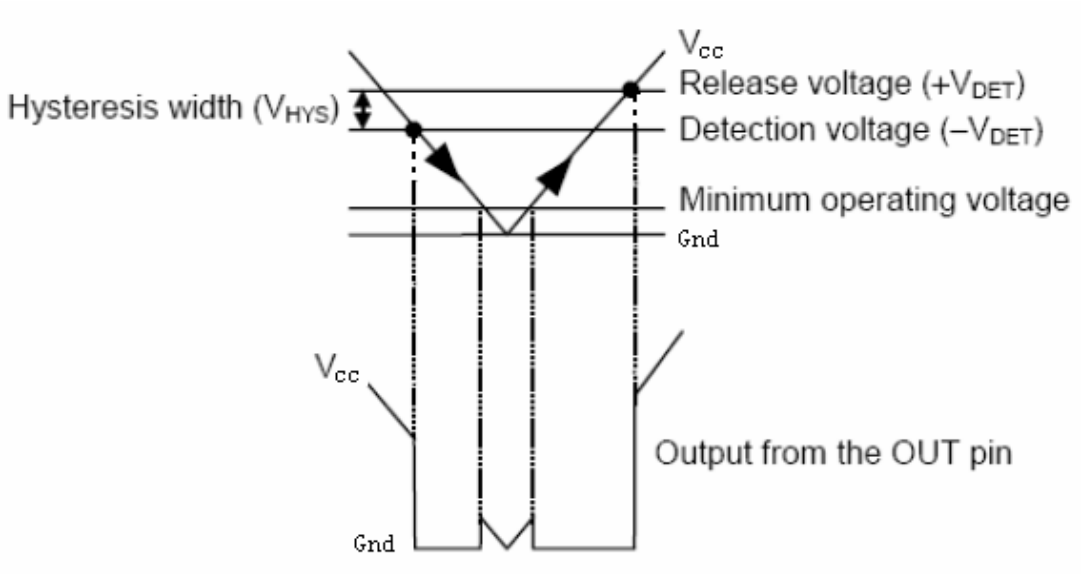
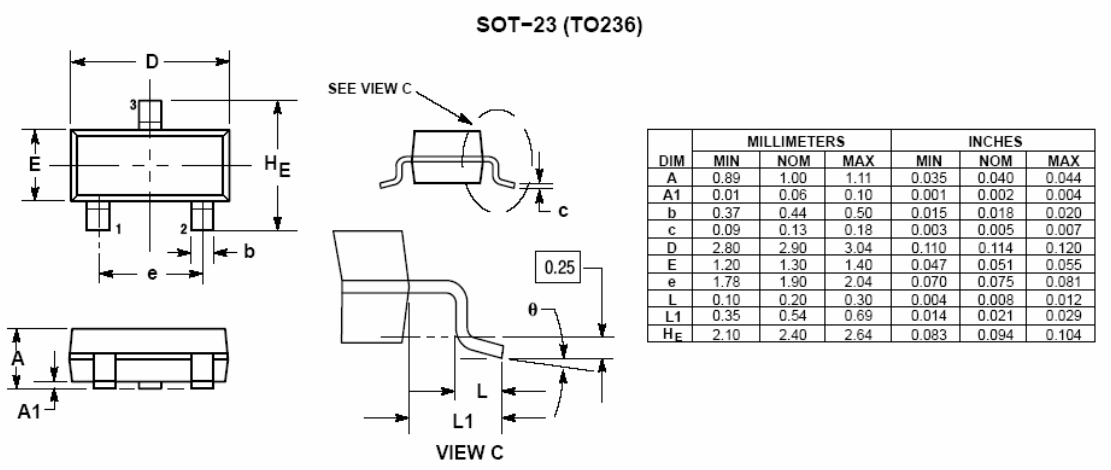


Figure1

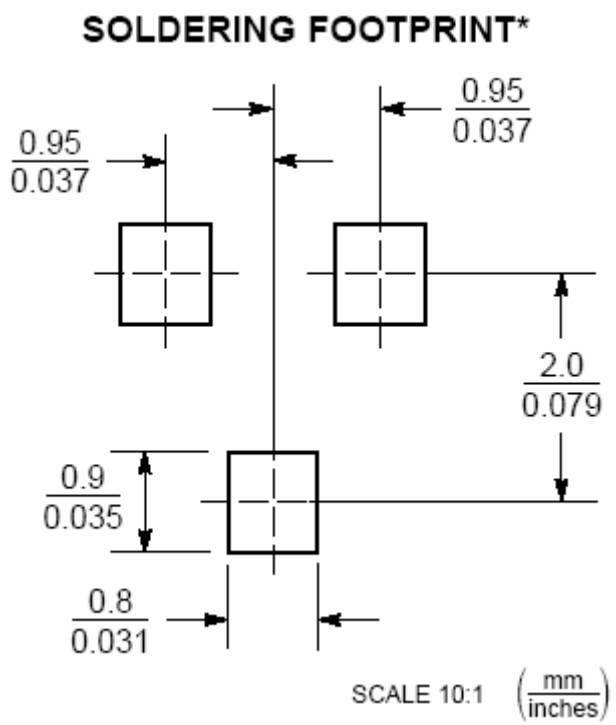
Making Information

DN159	LR8808-1.5	DN389	LR8808-3.8
DN169	LR8808-1.6	DN399	LR8808-3.9
DN179	LR8808-1.7	DN409	LR8808-4.0
DN189	LR8808-1.8	DN419	LR8808-4.1
DN199	LR8808-1.9	DN429	LR8808-4.2
DN209	LR8808-2.0	DN439	LR8808-4.3
DN219	LR8808-2.1	DN449	LR8808-4.4
DN229	LR8808-2.2	DN459	LR8808-4.5
DN239	LR8808-2.3	DN469	LR8808-4.6
DN249	LR8808-2.4	DN479	LR8808-4.7
DN259	LR8808-2.5	DN489	LR8808-4.8
DN269	LR8808-2.6	DN499	LR8808-4.9
DN279	LR8808-2.7	DN509	LR8808-5.0
DN289	LR8808-2.8	DN519	LR8808-5.1
DN299	LR8808-2.9	DN529	LR8808-5.2
DN309	LR8808-3.0	DN539	LR8808-5.3
DN319	LR8808-3.1	DN549	LR8808-5.4
DN329	LR8808-3.2	DN559	LR8808-5.5
DN339	LR8808-3.3	DN569	LR8808-5.6
DN349	LR8808-3.4	DN579	LR8808-5.7
DN359	LR8808-3.5	DN589	LR8808-5.8
DN369	LR8808-3.6	DN599	LR8808-5.9
DN379	LR8808-3.7	DN609	LR8808-6.0

Physical Dimensions

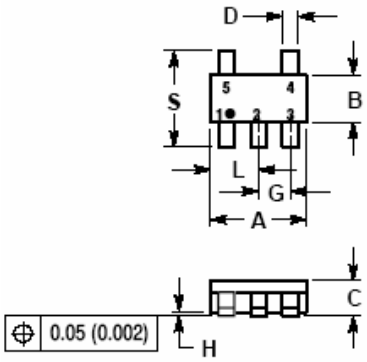


DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.89	1.00	1.11	0.035	0.040	0.044
A1	0.01	0.06	0.10	0.001	0.002	0.004
b	0.37	0.44	0.50	0.015	0.018	0.020
c	0.09	0.13	0.18	0.003	0.005	0.007
D	2.80	2.90	3.04	0.110	0.114	0.120
E	1.20	1.30	1.40	0.047	0.051	0.055
e	1.78	1.90	2.04	0.070	0.075	0.081
L	0.10	0.20	0.30	0.004	0.008	0.012
L1	0.35	0.54	0.69	0.014	0.021	0.029
H_E	2.10	2.40	2.64	0.083	0.094	0.104



LR8808

SOT23−5 (TSOP−5)



DIM	MILLIMETERS MIN	MILLIMETERS MAX	INCHES MIN	INCHES MAX
A	2.90	3.10	0.1142	0.1220
B	1.30	1.70	0.0512	0.0669
C	0.90	1.10	0.0354	0.0433
D	0.25	0.50	0.0098	0.0197
G	0.85	1.05	0.0335	0.0413
H	0.013	0.100	0.0005	0.0040
J	0.10	0.26	0.0040	0.0102
K	0.20	0.60	0.0079	0.0236
L	1.25	1.55	0.0493	0.0610
M	0	10	0	10
S	2.50	3.00	0.0985	0.1181

