

LR8808 Microprocessor Reset Circuits

General Description

The LR8808 series are ultra-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°C to +85°C temperature range.

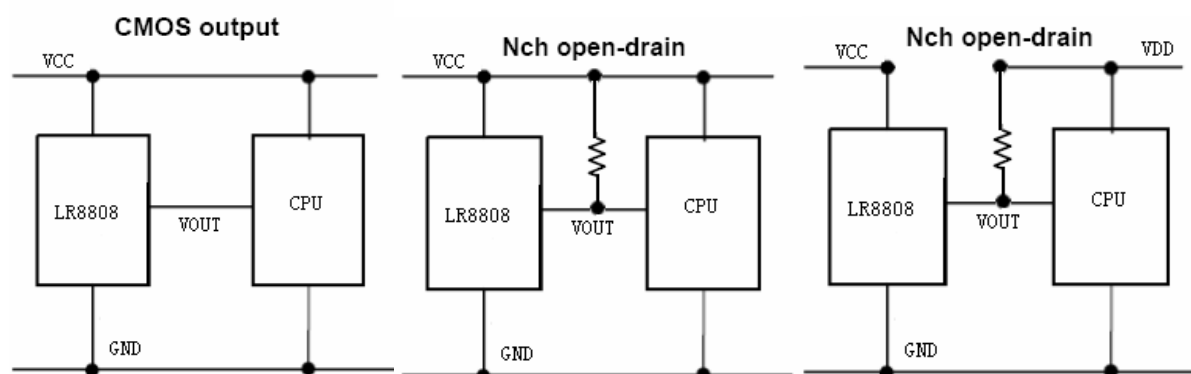
Features

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

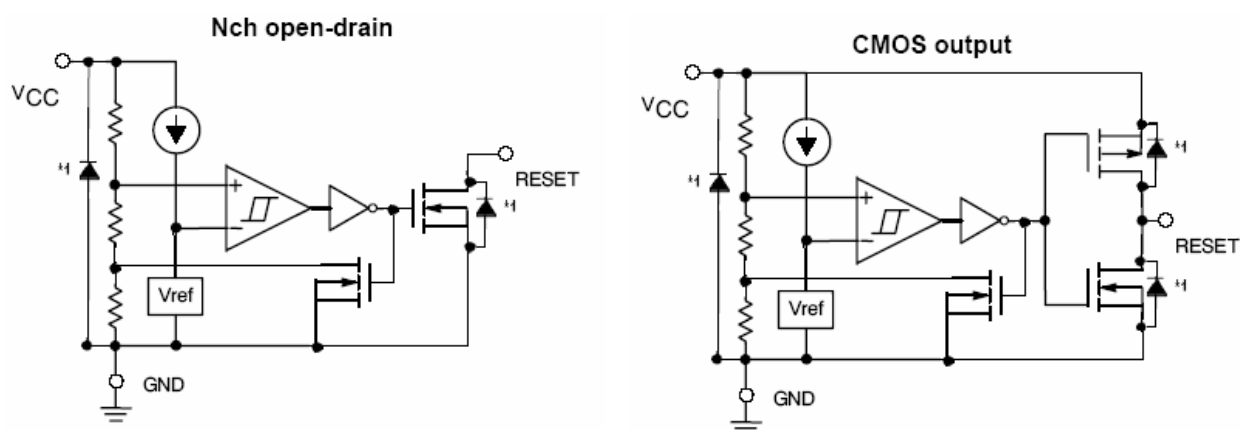
Applications

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

Typical Application Circuit



Block Diagram(*1: parasitic diode)



LR8808

Pin Descriptions

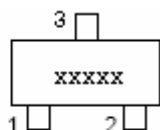
	SOT23		SOT23-5
Pin No	A	M	R
1	Gnd	Vout	Vout
2	Vout	Gnd	Vcc
3	Vcc	Vcc	Gnd
4	—	—	No connection
5	—	—	No connection

Connection Diagrams

SOT23 package



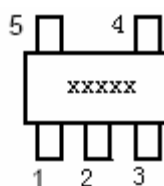
SOT-23
(TO-236)



SOT23-5 package



SOT23-5
(TSOP-5)



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

LR8808

Electrical Characteristics

Unless otherwise specified, Typical values and limits appearing in standard typeface are for $T_a = 25^\circ\text{C}$.

Symbol	Item	Conditions	Min	Type	Max	Unit
$-V_{DET}$ (Figure1)	Detection voltage	—	$-V_{DET} (S)$ $\times 0.98$	$-V_{DET} (S)$	$-V_{DET} (S)$ $\times 1.02$	V
V_{HYS} (Figure1)	Hysteresis Width	—	$-V_{DET} (S)$ $\times 0.02$	$-V_{DET} (S)$ $\times 0.05$	$-V_{DET} (S)$ $\times 0.08$	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
V_{CC}	Operating voltage	—	0.95	—	8	V
I _{OUT}	Output Current	NMOS: $V_{OUT} = 0.5V$ $V_{CC} = -V_{DET} - 0.5$	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: $V_{CC} - V_{OUT} = 0.5V$ $V_{CC} = -V_{DET} + 0.5$	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, $V_{CC} = 8.0V$, $V_{OUT} = 8.0V$		—	0.1	μA
	Temperature coefficient	$T_a = -40^\circ\text{C}$ to $+85^\circ\text{C}$	—	± 120	± 360	ppm/ $^\circ\text{C}$
T_{PLH}	Delay time				200	μs

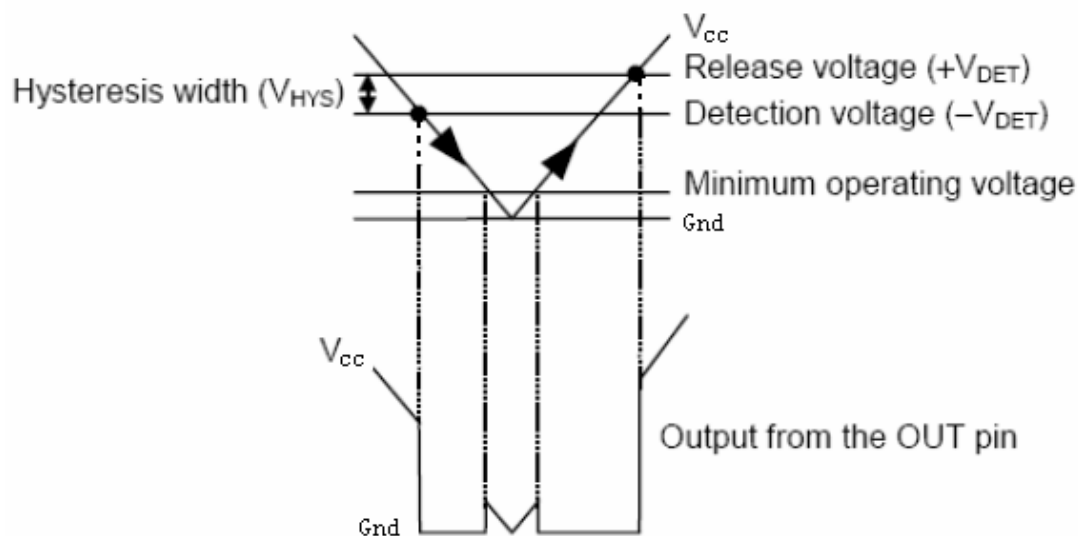


Figure1

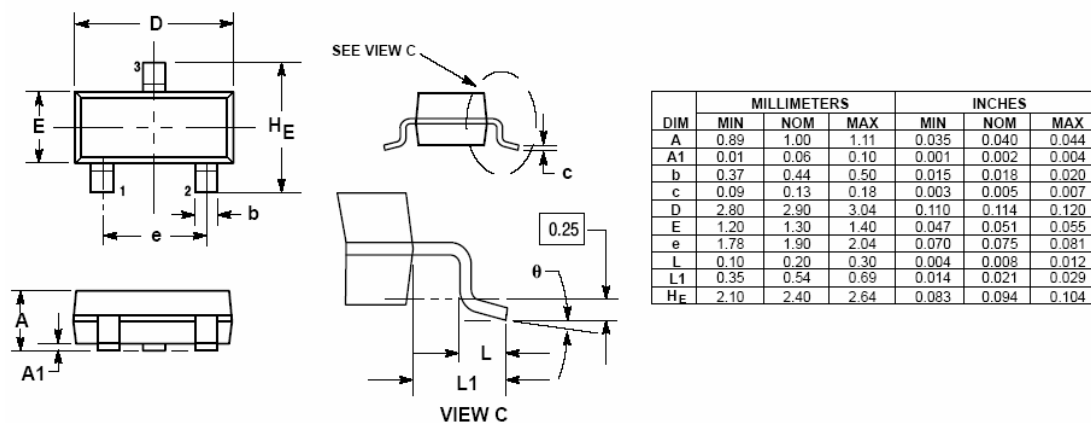
LR8808**Making Information**

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

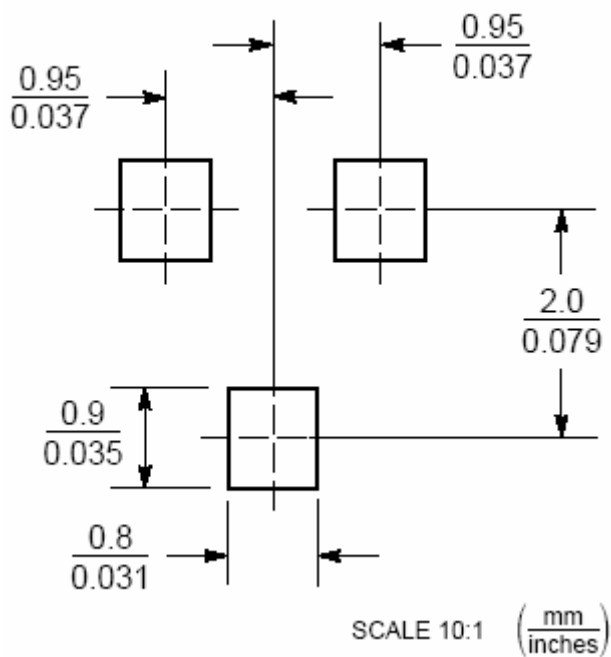
LR8808

Physical Dimensions

SOT-23 (TO236)



SOLDERING FOOTPRINT*



LR8808

SOT23-5 (TSOP-5)

