Voltage Detector

IL70xx

Function of this IC is accurately resetting the system after detecting voltage at the time of switching power on and instantaneous power off in various CPU systems and other logic systems.

IL70xx (TO-92)

1. Output
2. GND
3. Vcc

IL70xxA (TO-92)

1. Vcc
2. GND
3. Output

FUNCTIONS

• Current Consumption is Low.
• Resetting Output Minimum Guarantee Voltage is Low (0.8V Typ.)
• Hysteresis Voltage is Provided 50mV (Typ.)
• Reset Signal Generation Starting Voltage:
 2.1; 2.3; 2.5; 2.7; 2.9; 3.1; 3.3; 3.6; 3.7; 3.9; 4.2; 4.5V (Typ.)

IL70xx (SOT-89)

1. Vcc
2. GND
3. Output

1 2 3

APPLICATIONS

• As Control Circuit of Battery-Backed Memory.
• As Measure Against Erroneous Operations at Power ON-OFF
• As Measure Against System Runaway at Instantaneous
 Break of Power Supply etc.
• As Resetting Function for the CPU-Mounted Equipment,
 such as Personal Computers, Printers, VTRs and so forth.

EQUIVALENT CIRCUIT
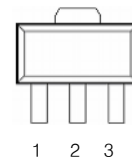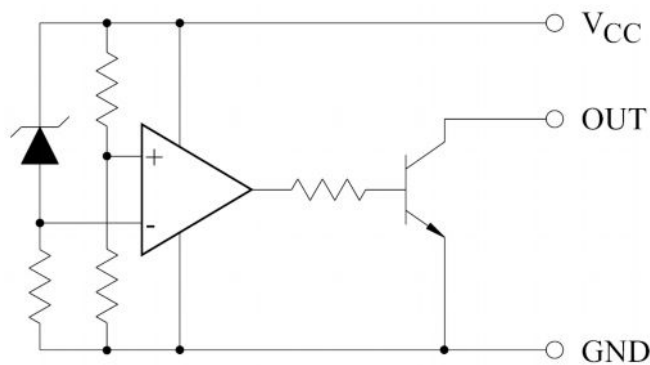
OUTPUT TABLE&CURVE

Vcc	Vcc>Vs(+)	Vcc≤Vs(-)
Vout	Hi-Z	Gnd
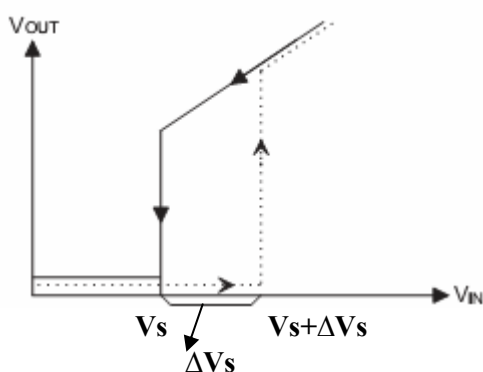
ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage	Vcc	-0.3~+15.0	V
Power Dissipation (Package Limitation)	P_D	500	mW
Operation Temperature	Topr	-30~+75	°C

Note: These are stress ratings only. Stress exceeding the range specified under "Absolute Maximum Ratings" may cause substantial damage to the device. Functional operation of this device at other Conditions beyond those listed in the specification is not implied and prolonged exposure to extreme conditions may affect device reliability.

ELECTRICAL CHARACTERISTICS
(Tj= +25°C, unless otherwise noted)

CHARACTERISTIC	SYMBOL	CONDITIONS		MIN	TYP	MAX	UNIT
Detecting Voltage	Vs	R_L=200Ω V_{OL}≤0.4V	IL7021T2	1.95	2.1	2.25	V
			IL7023T2	2.15	2.3	2.45	
			IL7025T2	2.35	2.5	2.65	
			IL7027T2	2.55	2.7	2.85	
			IL7029T2	2.75	2.9	3.05	
			IL7031T2	2.95	3.1	3.25	
			IL7033T2	3.15	3.3	3.45	
			IL7036T2	3.45	3.6	3.75	
			IL7037T2	3.55	3.7	3.85	
			IL7039T2	3.75	3.9	4.05	
			IL7042T2	4.05	4.2	4.35	
			IL7045T2	4.35	4.5	4.65	
Low-Level Output Voltage	V_{OL}	R_L=200Ω		-	-	0.4	V
Output Leakage Current	I_{OH}	Vcc=15V		-	-	0.1	μA
Histeresis Voltage	ΔVs	R_L=200Ω		30	50	100	mV
Detecting Voltage Temperature Coefficient	Vs/ΔT	R_L=200Ω		-	±0.01	-	%/°C
Circuit Current at on Time	Icc_L	Vcc=Vsmin – 0.05V		-	-	500	μA
Circuit Current at off Time	Icc_H	Vcc=5.25V		-	-	50	μA
Threshold Operating Voltage	Vopr	R_L=200Ω V_{OL}≤0.4V		-	0.8	-	V
"L" Transmission Delay Time	tp_{HL}	R_L=1.0k , C_L=100pF		-	10	-	μs
"H" Transmission Delay Time	tp_{LH}	R_L=1.0k , C_L=100pF		-	15	-	μs
Output Current	I_{OL}	Vcc=Vsmin – 0.05V Tc=25°C		20	-	-	mA

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TEST and APPLICATION CIRCUITS

TEST CIRCUIT 1.
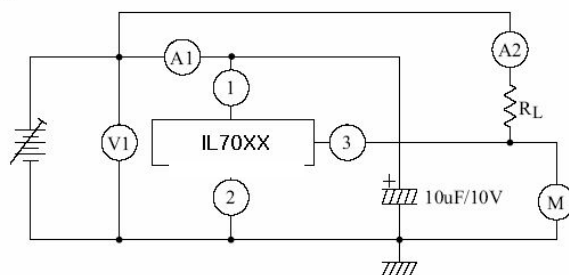
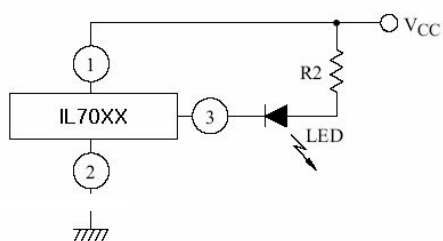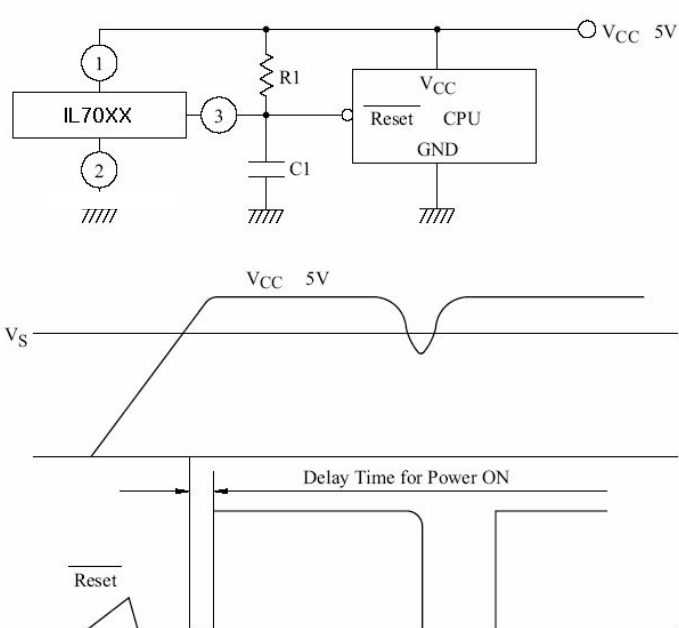

TEST CIRCUIT 2.
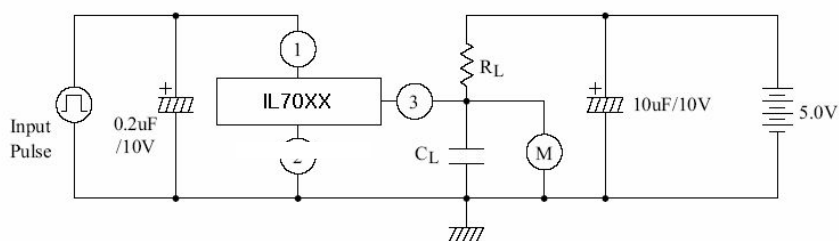
APPLICATION CIRCUIT
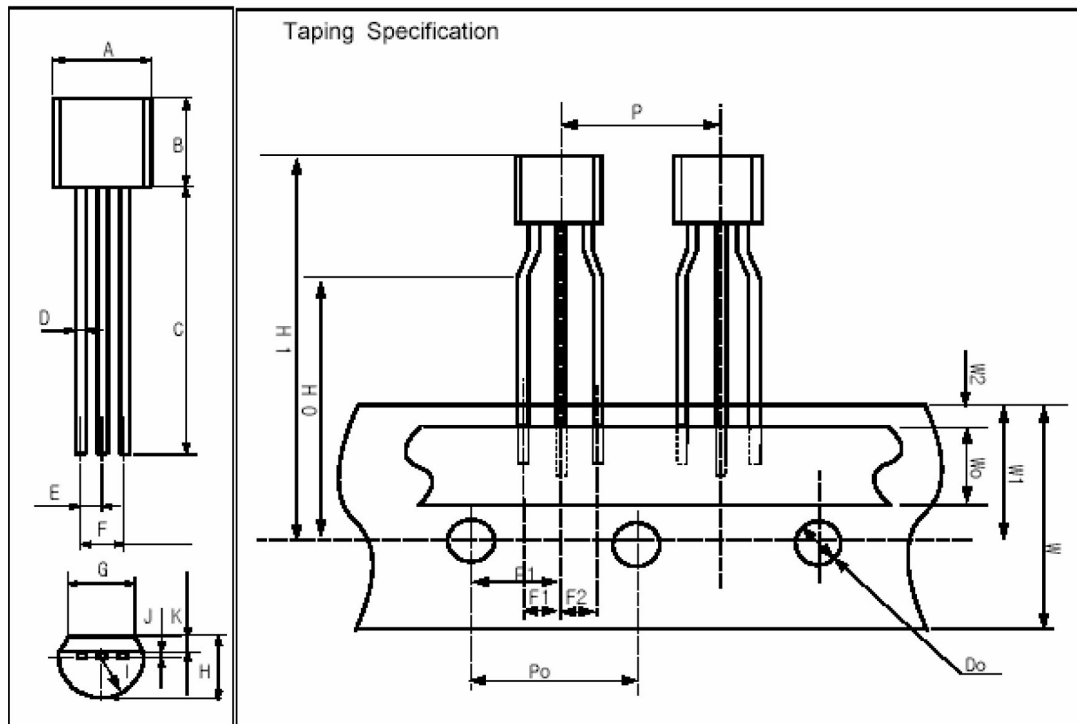(1) BATTERY LOW INDICATOR   (2) CPU RESETTING

(NOTE)
(1) Connecting of LED and R2 obtains a voltage drop indicator.
(2) Connecting of C1 and selection of time constant with C1 and R1 set
the power on delay time.

PACKAGE DIMENSIONS

TO-92 PACKAGE OUTLINE DEMENSIONS

Package Dimension(unit:mm)				Taping Dimension(unit:mm)			
Symbol	Min	Typ	Max	Symbol	Min	Typ	Max
A	4.43	4.58	4.83	P	12.2	12.7	13.2
B	4.38	4.58	4.78	PO	12.5	12.7	12.9
C	14.07	14.47	14.87	P1	5.85	6.35	6.85
D	0.36	0.46	0.56	F1,F2	2.4	2.5	2.9
E	1.07	1.27	1.47	W	17.5	18.0	19.0
F	2.34	2.54	2.74	WO	5.5	6.0	6.5
G	3.40	3.60	3.80	W1	8.5	9.0	9.5
H	-	-	3.86	W2	-	-	1.0
I	-	[R2.29]	-	HO	15.5	16.0	16.5
J	0.33	0.38	0.39	H1	-	-	27.0
K	0.92	1.02	1.12	DO	3.8	4.0	4.2

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SOT-89-3L PACKAGE OUTLINE DIMENSIONS
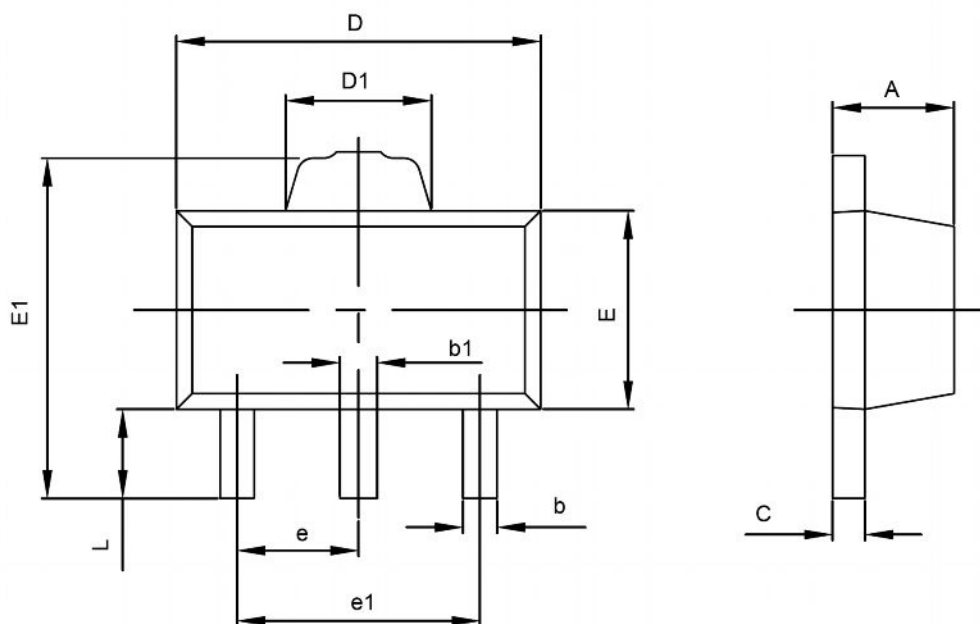
Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.400	1.600	0.055	0.063
b	0.320	0.520	0.013	0.020
b1	0.360	0.560	0.014	0.022
c	0.350	0.440	0.014	0.017
D	4.400	4.600	0.173	0.181
D1	1.400	1.800	0.055	0.071
E	2.300	2.600	0.091	0.102
E1	3.940	4.250	0.155	0.167
e	1.500TYP		0.060TYP	
e1	2.900	3.100	0.114	0.122
L	0.900	1.100	0.035	0.043