

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.

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.)

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.

IL70xx (TO-92)



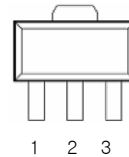
1. Output
2. GND
3. Vcc

IL70xxA (TO-92)



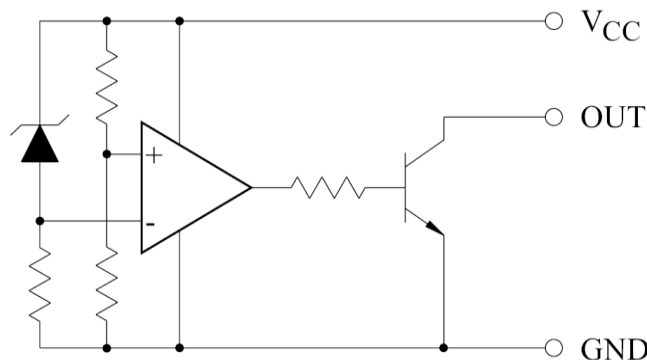
1. Vcc
2. GND
3. Output

IL70xx (SOT-89)



1. Vcc
2. GND
3. Output

EQUIVALENT CIRCUIT



MAXIMUM RATINGS (Ta=25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage	V _{cc}	-0.3~+15.0	V
Power Dissipation (Package Limitation)	P _D	500	mW
Operation Temperature	Topr	-30~+85	°C

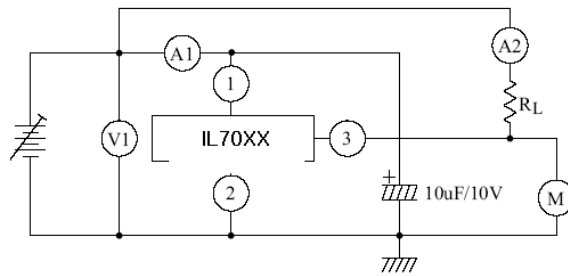
ELECTRICAL CHARACTERISTICS

(Tj= +25°C, unless otherwise noted)

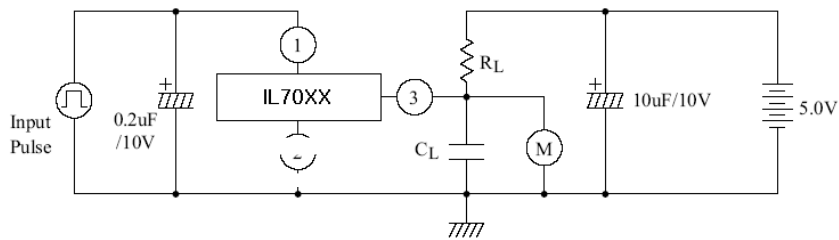
CHARACTERISTIC	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNIT	
Detecting Voltage	V _s	R _L =200Ω V _{OL} ≤0.4V	IL7021T2	1.95	2.1	2.25	V
			IL7023T2	2.15	2.3	2.45	
			IL7025T2	2.35	2.5	2.65	
			IL7027T2	2.55	2.7	2.85	
			IL7029T2	2.75	2.9	3.05	
			IL7031T2	2.95	3.1	3.25	
			IL7033T2	3.15	3.3	3.45	
			IL7036T2	3.45	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}	V _{cc} =15V	-	-	0.1	μA	
Histeresis Voltage	ΔV _s	R _L =200Ω	30	50	100	mV	
Detecting Voltage Temperature Coefficient	V _s /ΔT	R _L =200Ω	-	±0.01	-	%/°C	
Circuit Current at on Time	I _{ccL}	V _{cc} =V _{smin} – 0.05V	-	-	500	μA	
Circuit Current at off Time	I _{ccH}	V _{cc} =5.25V	-	-	50	μA	
Threshold Operating Voltage	V _{opr}	R _L =200Ω V _{OL} ≤0.4V	-	0.8	-	V	
"L" Transmission Delay Time	t _{pHL}	R _L =1.0k , C _L =100pF	-	10	-	μs	
"H" Transmission Delay Time	t _{pLH}	R _L =1.0k , C _L =100pF	-	15	-	μs	
Output Current	I _{OL}	V _{cc} =V _{smin} – 0.05V T _c =25°C	20	-	-	mA	

TEST and APPLICATION CIRCUITS

TEST CIRCUIT 1.

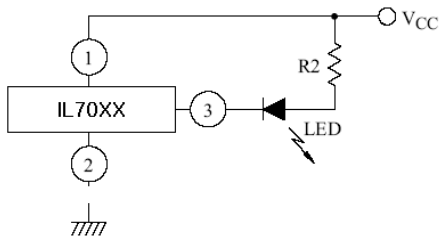


TEST CIRCUIT 2.

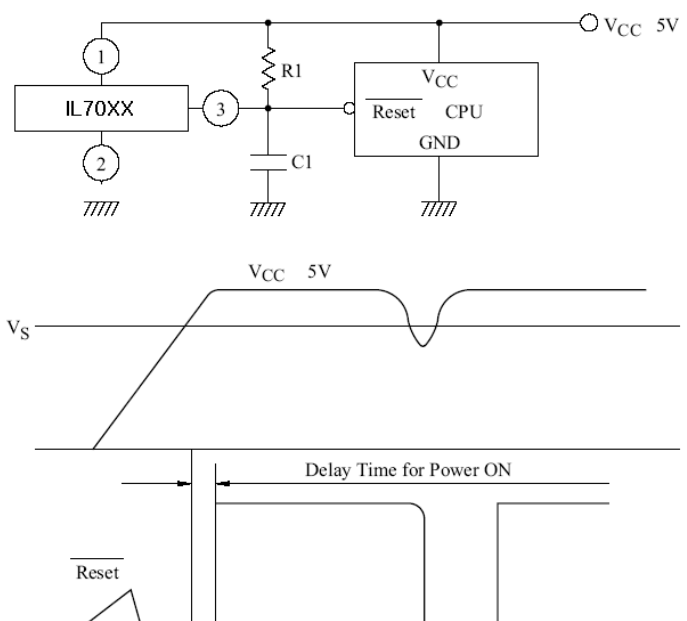


APPLICATION CIRCUIT

(1) BATTERY LOW INDICATOR



(2) CPU RESETTING

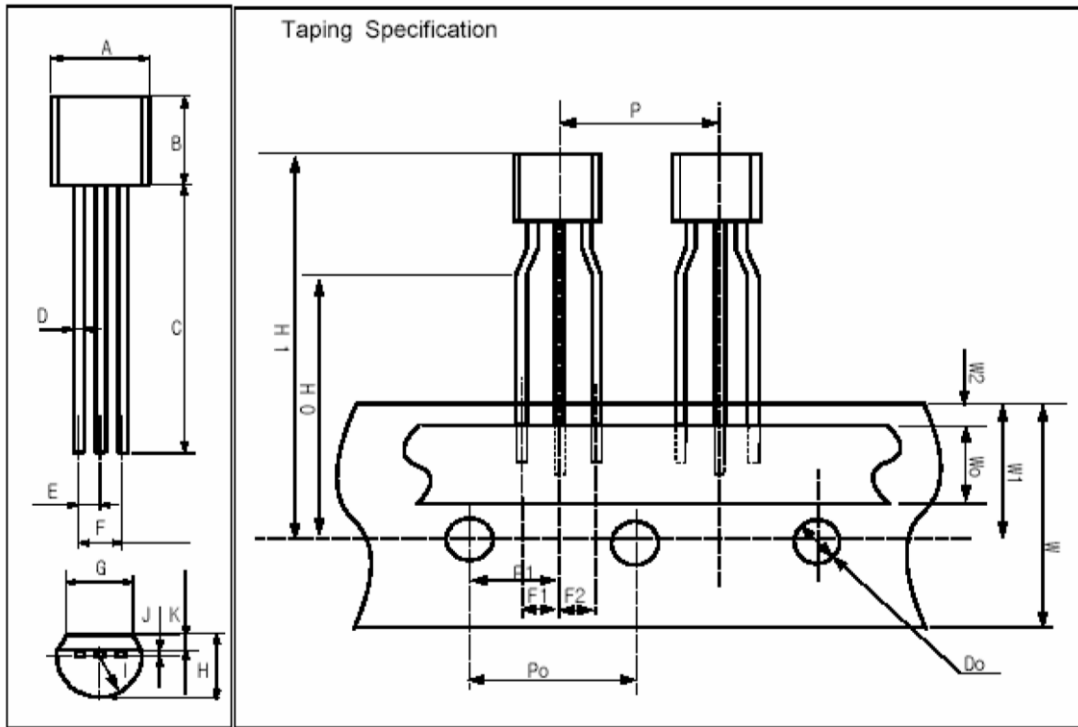


(NOTE)

- (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.

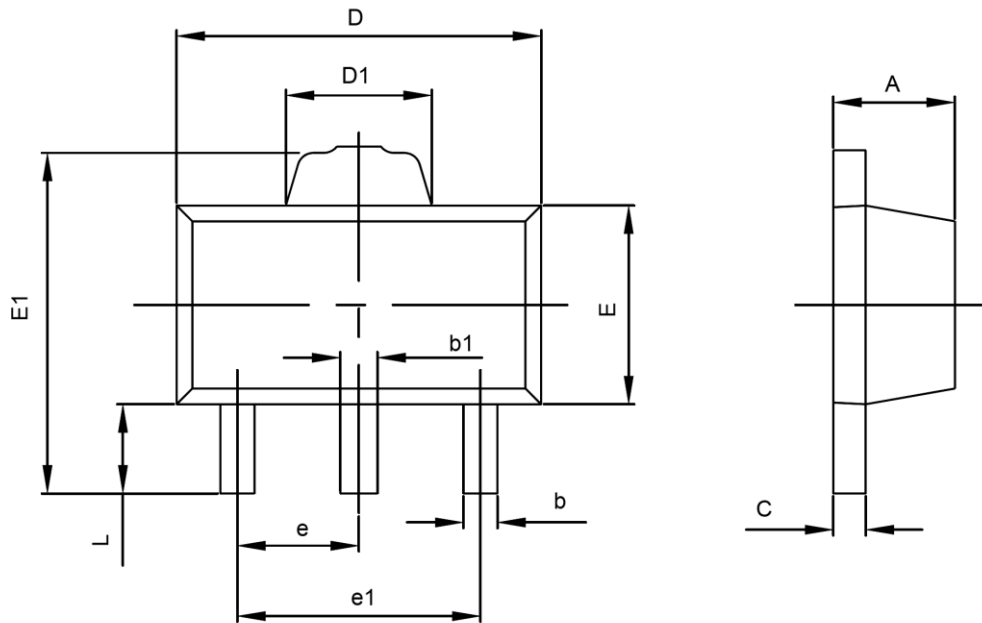
PACKAGE DIMENSIONS

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

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