

## VOLTAGE DETECTOR

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.

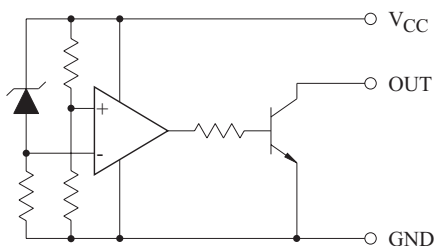
## FEATURES

- Current Consumption is Low.  $I_{CCL}=300\mu A$  Typ.  $I_{CCH}=30\mu A$  Typ.
- Resetting Output Minimum Guarantee Voltage is Low 0.8V Typ.
- Hysteresis Voltage is Provided. 50mV Typ.
- Reset Signal Generation Starting Voltages :  
 KIA7019BP/BF/BS 1.9V Typ. KIA7033BP/BF/BS 3.3V Typ.  
 KIA7021BP/BF/BS 2.1V Typ. KIA7034BP/BF/BS 3.4V Typ.  
 KIA7023BP/BF/BS 2.3V Typ. KIA7035BP/BF/BS 3.5V Typ.  
 KIA7025BP/BF/BS 2.5V Typ. KIA7036BP/BF/BS 3.6V Typ.  
 KIA7027BP/BF/BS 2.7V Typ. KIA7039BP/BF/BS 3.9V Typ.  
 KIA7029BP/BF/BS 2.9V Typ. KIA7042BP/BF/BS 4.2V Typ.  
 KIA7031BP/BF/BS 3.1V Typ. KIA7045BP/BF/BS 4.5V Typ.  
 KIA7032BP/BF/BS 3.2V Typ.
- Taping Type is also Available.

## APPLICATIONS

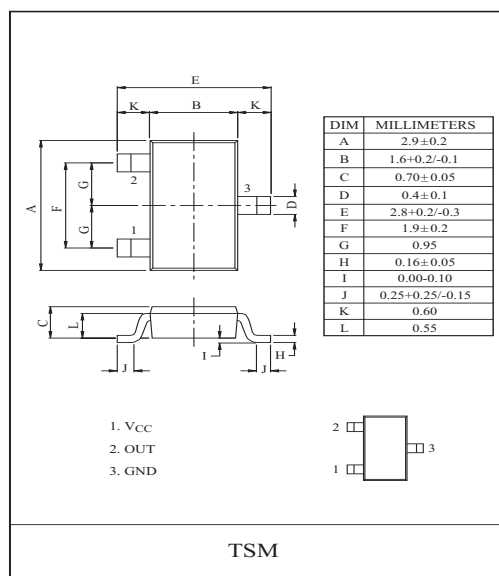
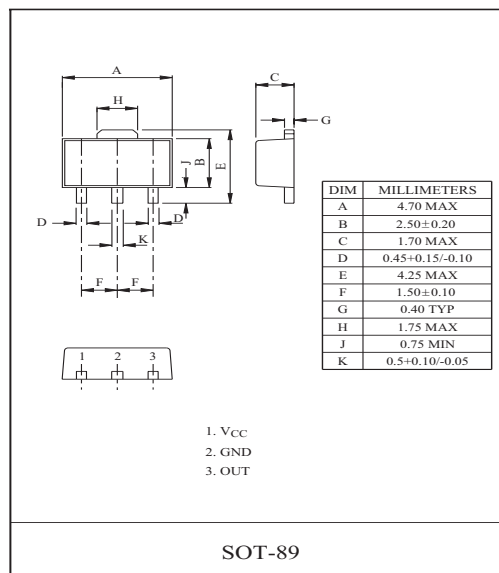
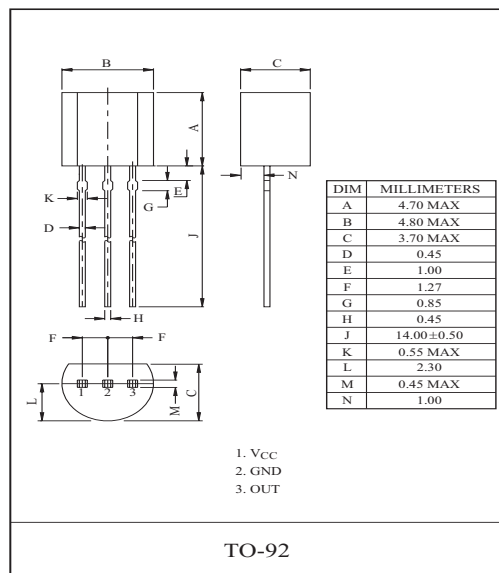
- As Control Circuit of Battery-Backed Memory.
- As Measure Against Erroneous Operations at Power ON-OFF.
- As Measure Against System Runaway at Instantaneous Break of Power Supply etc.
- As Resetting Function for the CPU-Mounted Equipment, such as Personal Computers, Printers, VTRs and so forth.

## EQUIVALENT CIRCUIT



## Marking

Type No.	Marking	Type No.	Marking	Type No.	Marking
KIA7019BF/BS	5A	KIA7029BF/BS	5F	KIA7035BF/BS	5L
KIA7021BF/BS	5B	KIA7031BF/BS	5G	KIA7036BF/BS	5M
KIA7023BF/BS	5C	KIA7032BF/BS	5H	KIA7039BF/BS	5N
KIA7025BF/BS	5D	KIA7033BF/BS	5J	KIA7042BF/BS	5P
KIA7027BF/BS	5E	KIA7034BF/BS	5K	KIA7045BF/BS	5R



# KIA7019BP/BF/BS~KIA7045BP/BF/BS

## MAXIMUM RATINGS (Ta=25 °C)

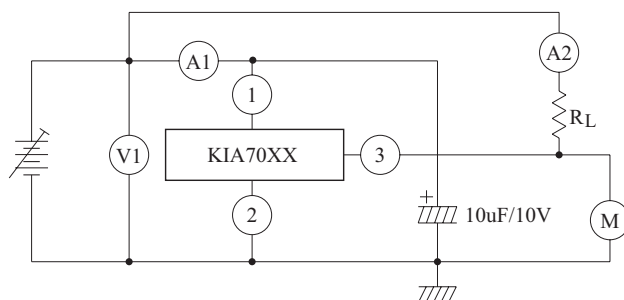
CHARACTERISTIC		SYMBOL	RATING	UNIT
Supply Voltage		V <sub>CC</sub>	-0.3 ~ +15.0	V
Power Dissipation (Package Limitation)	KIA7019BP ~ 45BP	P <sub>D</sub>	400	mW
	KIA7019BF ~ 45BF		500	
	KIA7019BS ~ 45BS		350	
Operating Temperature		T <sub>opr</sub>	-30 ~ +75	°C
Storage Temperature		T <sub>stg</sub>	-55 ~ +150	°C

## ELECTRICAL CHARACTERISTICS

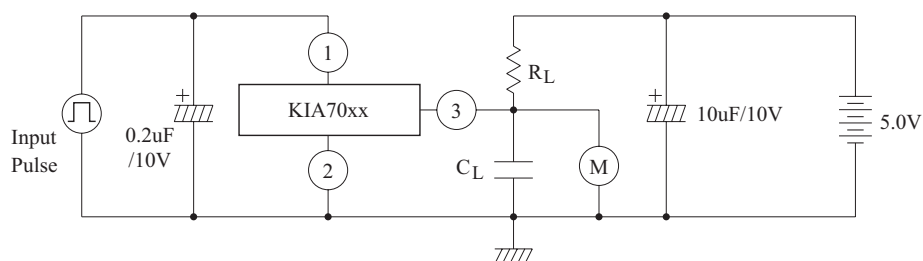
CHARACTERISTIC	SYMBOL	TEST CIRCUIT	TEST CONDITION		MIN.	TYP.	MAX.	UNIT
Detecting Voltage	V <sub>S</sub>	1	R <sub>L</sub> =200 Ω V <sub>OL</sub> ≤ 0.4V	KIA7019BP/BF/BS	1.75	1.9	2.05	V
				KIA7021BP/BF/BS	1.95	2.1	2.25	
				KIA7023BP/BF/BS	2.15	2.3	2.45	
				KIA7025BP/BF/BS	2.35	2.5	2.65	
				KIA7027BP/BF/BS	2.55	2.7	2.85	
				KIA7029BP/BF/BS	2.75	2.9	3.05	
				KIA7031BP/BF/BS	2.95	3.1	3.25	
				KIA7032BP/BF/BS	3.05	3.2	3.35	
				KIA7033BP/BF/BS	3.15	3.3	3.45	
				KIA7034BP/BF/BS	3.25	3.4	3.55	
				KIA7035BP/BF/BS	3.35	3.5	3.65	
				KIA7036BP/BF/BS	3.45	3.6	3.75	
				KIA7039BP/BF/BS	3.75	3.9	4.05	
				KIA7042BP/BF/BS	4.05	4.2	4.35	
				KIA7045BP/BF/BS	4.35	4.5	4.65	
Low-Level Output Voltage	V <sub>OL</sub>	1	R <sub>L</sub> =200 Ω		-	-	0.4	V
Output Leakage Current	I <sub>OH</sub>	1	V <sub>CC</sub> =15V		-	-	0.1	μA
Hysteresis Voltage	ΔV <sub>S</sub>	1	R <sub>L</sub> =200 Ω		30	50	100	mV
Detecting Voltage Temperature Coefficient	V <sub>S</sub> /ΔT	1	R <sub>L</sub> =200 Ω		-	±0.01	-	%/°C
Circuit Current at on Time	I <sub>ccL</sub>	1	V <sub>CC</sub> =V <sub>Smin</sub> .-0.05V		-	300	500	μA
Circuit Current at off Time	I <sub>ccH</sub>	1	V <sub>CC</sub> =5.25V		-	30	50	μA
Threshold Operating Voltage	V <sub>opr</sub>	1	R <sub>L</sub> =200 Ω, V <sub>OL</sub> ≤ 0.4V		-	0.8	-	V
"L" Transmission Delay Time	tpHL	2	R <sub>L</sub> =1.0k Ω, C <sub>L</sub> =100pF		-	10	-	μs
"H" Transmission Delay Time	tpLH	2	R <sub>L</sub> =1.0k Ω, C <sub>L</sub> =100pF		-	15	-	μs
Output Current at on Time I	IoL I	1	V <sub>CC</sub> =V <sub>Smin</sub> .-0.05V, Tc=25 °C		20	-	-	mA
Output Current at on Time II	IoL II	1	V <sub>CC</sub> =V <sub>Smin</sub> .-0.05V, Tc=-30 ~ +75 °C		16	-	-	mA

# KIA7019BP/BF/BS~KIA7045BP/BF/BS

TEST CIRCUIT 1.

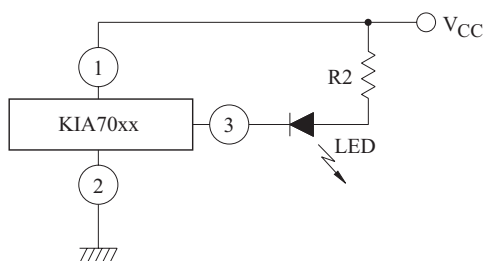


TEST CIRCUIT 2.

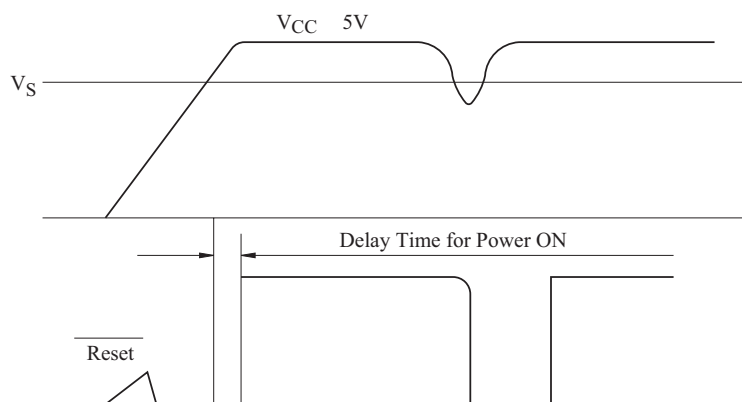
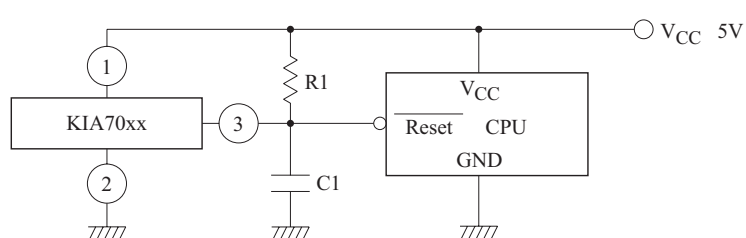


APPLICATION CIRCUIT

(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.