KIA7419P/F ~ KIA7445P/F

BIPOLAR LINEAR INTEGRATED CIRCUIT

VOLTAGE DETECTOR

This IC series is usable for the CPU system of all types and wired logic system as it has the function of detecting the power supply voltage at the time of initial resetting after switching the power supply on and after instantaneous break in power supply voltage there-by accurately resetting the system this particular series has especially been designed as the high resetting output type.

FEATURES

- Current Consumption is Low. I_{CCL}=30μA Typ.
  I_{CCH}=300μA Typ.
- Resetting Output Minimum Guarantee Voltage is Low 0.8V Typ.
- Hysteresis Voltage is Provided 50mV Typ.
- Reset Signal Generation Starting Voltages:

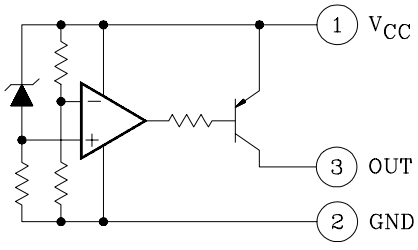
KIA7419P/F	1.9V Typ.	KIA7433P/F	3.3V Typ.
KIA7421P/F	2.1V Typ.	KIA7434P/F	3.4V Typ.
KIA7423P/F	2.3V Typ.	KIA7435P/F	3.5V Typ.
KIA7425P/F	2.5V Typ.	KIA7436P/F	3.6V Typ.
KIA7427P/F	2.7V Typ.	KIA7439P/F	3.9V Typ.
KIA7429P/F	2.9V Typ.	KIA7442P/F	4.2V Typ.
KIA7431P/F	3.1V Typ.	KIA7445P/F	4.5V Typ.
KIA7432P/F	3.2V Typ.		

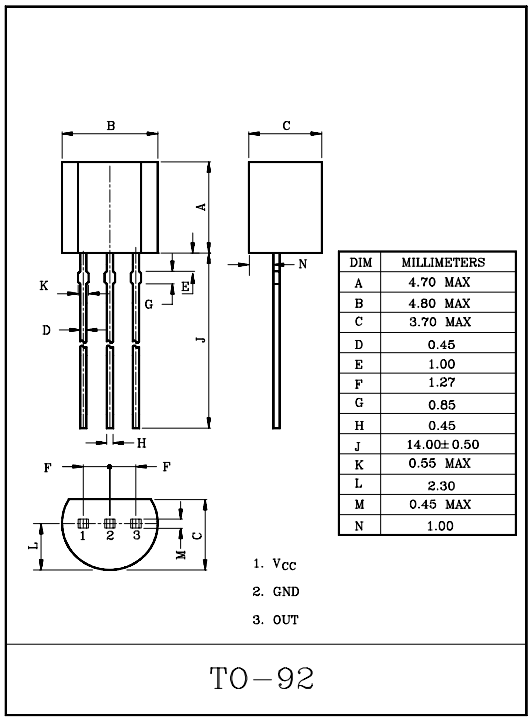
- Taping Type is also Available.

APPLICATIONS

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

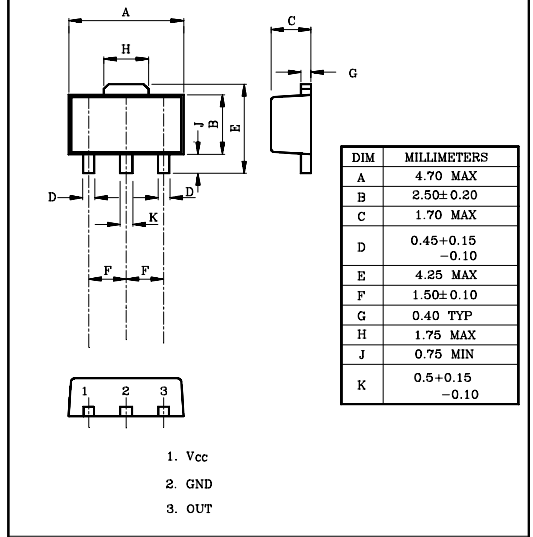
EQUIVALENT CIRCUIT





DIM	MILLIMETERS
A	4.70 MAX
B	4.80 MAX
C	3.70 MAX
D	0.45
E	1.00
F	1.27
G	0.85
H	0.45
J	14.00±0.50
K	0.55 MAX
L	2.30
M	0.45 MAX
N	1.00

TO-92



DIM	MILLIMETERS
A	4.70 MAX
B	2.50±0.20
C	1.70 MAX
D	0.45+0.15 −0.10
E	4.25 MAX
F	1.50±0.10
G	0.40 TYP
H	1.75 MAX
J	0.75 MIN
K	0.5+0.15 −0.10

SOT-89

MAXIMUM RATINGS (Ta=25℃)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Supply Voltage		V_{CC}	-0.3~+7.5	V
Power Dissipation (Package Limitation)	KIA7419P~45P	P_D	400	mW
	KIA7419P~45F		500	
Operating Temperature		T_{opr}	-30~+75	℃
Storage Temperature		T_{stg}	-55~150	℃

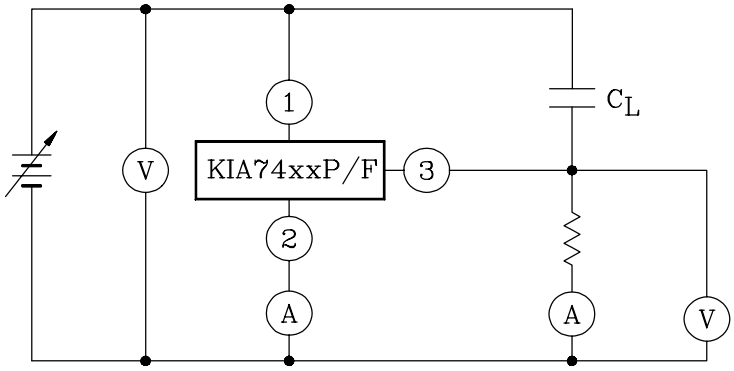
MARKING

Type No.	Marking	Type No.	Marking
KIA7419F	4A	KIA7433F	4J
KIA7421F	4B	KIA7434F	4K
KIA7423F	4C	KIA7435F	4L
KIA7425F	4D	KIA7436F	4M
KIA7427F	4E	KIA7439F	4N
KIA7429F	4F	KIA7442F	4P
KIA7431F	4G	KIA7445F	4R
KIA7432F	4H		

ELECTRICAL CHARACTERISTICS

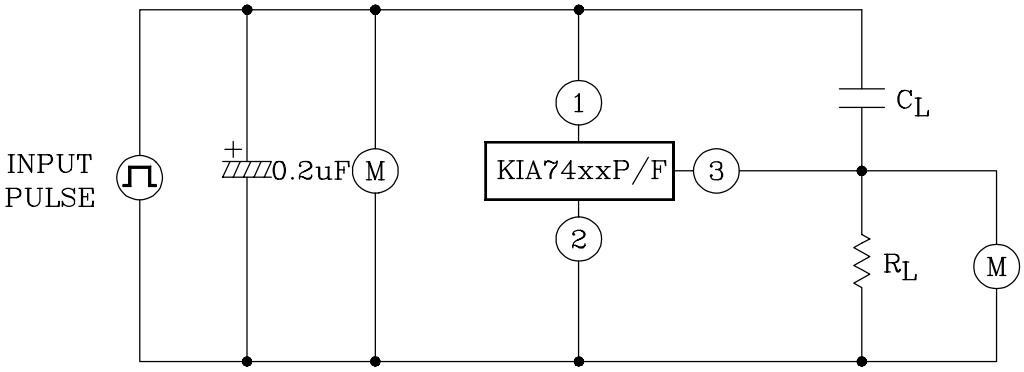
CHARACTERISTIC	SYMBOL	TEST CIR.	TEST CONDITION		MIN.	TYP.	MAX.	UNIT
Detecting Voltage	V_S	1	R_L=4.7kΩ V_{OH}≧ V_{OL}-0.4	KIA7419P/F	1.75	1.9	2.05	V
				KIA7421P/F	1.95	2.1	2.25	
				KIA7423P/F	2.15	2.3	2.45	
				KIA7425P/F	2.35	2.5	2.65	
				KIA7427P/F	2.55	2.7	2.85	
				KIA7429P/F	2.75	2.9	3.05	
				KIA7431P/F	2.95	3.1	3.25	
				KIA7432P/F	3.05	3.2	3.35	
				KIA7433P/F	3.15	3.3	3.45	
				KIA7434P/F	3.25	3.4	3.55	
				KIA7435P/F	3.35	3.5	3.65	
				KIA7436P/F	3.45	3.6	3.75	
				KIA7439P/F	3.70	3.9	4.10	
				KIA7442P/F	4.00	4.2	4.40	
				KIA7445P/F	4.30	4.5	4.70	
Low-Level Output Voltage	V_{OL}	1	R_L=4.7kΩ		V_{CC} -0.4	-	-	V
Output Leakage Current	I_{OL}	1	V_{CC}=7.5V		-	-	0.1	μA
Hysterisis Voltage	Vs	1	R_L=4.7kΩ	KIA7419P/F KIA7421P/F KIA7423P/F	20	50	100	mV
					30	50	100	
Detecting Voltage Temperature Coefficient	Vs/⊿T	1	R_L=4.7kΩ		-	±0.01	-	%/℃
Circuit Current at on Time	IccH	1	V_{CC}=Vsmin -0.05V		-	300	500	μA
Circuit Current at off Time	IccL	1	V_{CC}=5.25V	KIA7419P/F KIA7421P/F KIA7423P/F	-	30	70	μA
					-	30	50	
Threshold Operating Voltage	Vopr	1	R_L=4.7kΩ V_{OH}≧V_{CC}-0.4		-	0.8	-	V
"L" Transmission DELAY Time	tpHL	2	R_L=4.7kΩ C_L=100pF		-	10	-	μS
"H" Transmission DELAY Time	tpLH	2	R_L=4.7kΩ C_L=100pF		-	10	-	μS
Output Current	I_{OH}	1	V_{CC}=Vsmin -0.05V R_L=0Ω, Tc=25℃		-2.0	-5.0	-	mA

TEST CIRCUIT 1.



Ⓐ is DC AMPEREMETER
Ⓥ is DC VOLTMETER

TEST CIRCUIT 2.



Ⓜ is OSCILLOSCOPE MONITOR

PRECAUTION FOR USE

SOLDERING

Flat Package (SOT-89 Package)

Elements mounting styles of electronic devices are gaining in further diversification over recent years, and needs for components are all the more expanding in varieties. Especially, surface mounting is steadily penetrating into industrial segments as a world-wide popular technical trend. Although exposure to high temperature is inevitable during soldering we recommend limiting the soldering temperature to low levels as shown in figure for the sake of retaining inherent excellent reliability.

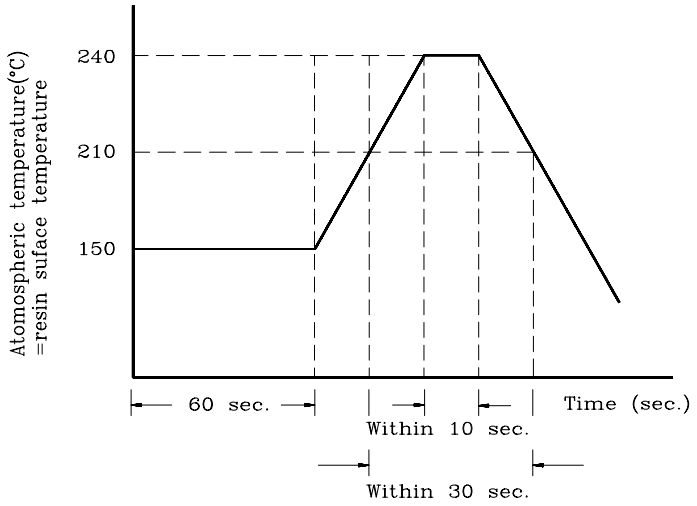


Fig 6

(a) When employing solder reflow method

① Atmospheric temperature around resin surfaces must be less than 240℃, not exceeding the time length of 10 sec.

② Recommend temperature profile

③ Precautions on heating method

When resin in kept exposed to high temperature for a long time, device reliability may be marred. Therefore, it is essential to complete soldering in the shortest time possible to prevent temperature of resin from rising.

(b) When employing halogen lamps or infrared-ray heaters

When halogen lamps or infrared-ray heaters are used, avoid direct irradiation onto resin surfaces; such devices cause extensive localized temperature rise.

※ Please keep a reflow solder operating when SOT-89 package's soldering.