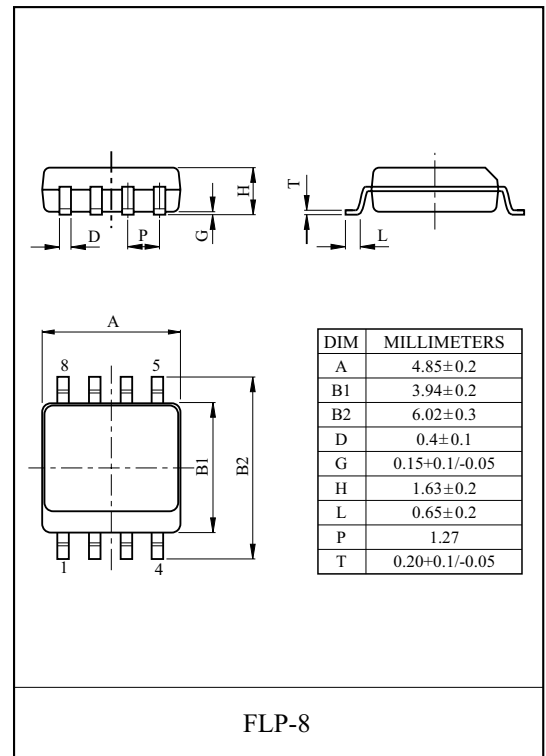


## LAMP FAILURE INDICATOR.

Function of this IC is used as a monitor for lamp failure in automobiles. Output is triggered as compare built-in reference voltage with the variance of lamp current by small value of resistance.

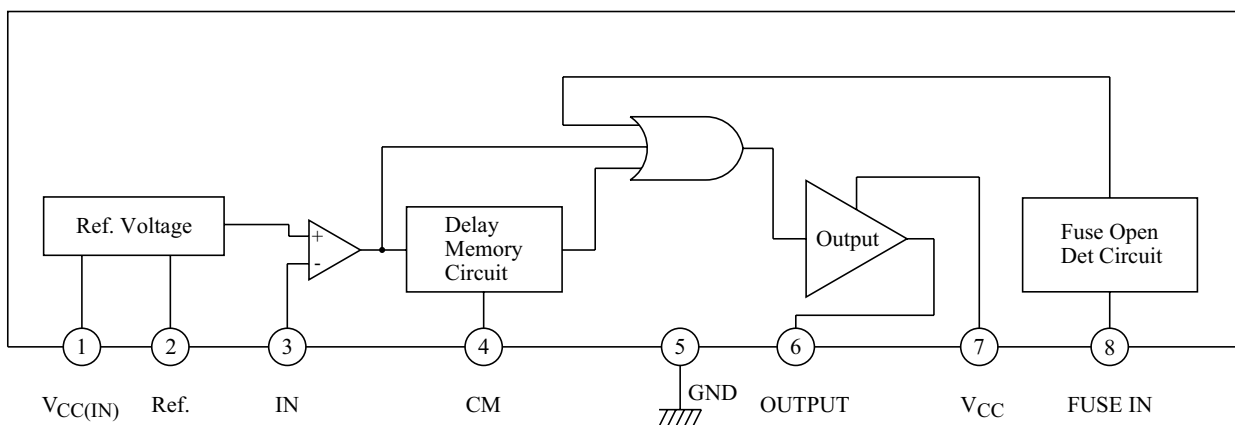
- High accuracy of the built-in comparator.  
(Can be easy to detect the opened line even one of any lamps is opened, because reference voltage is based on lamp current).
- Memorable the open status after detecting all the line such as stop lamp or others lamps and the delayed characteristic by the capacitance of outside let it possible to keep the memory in safty.
- Detectable the opened line of fuse of lamp.
- The output is designed for 0.3A driving ability and it is able to drive the lamp on purpose of various warnings.



## MAXIMUM RATINGS (Ta=25 °C)

CHARACTERISTIC	SYMBOL	RATING	CONDITION	UNIT
Operating Voltage	$V_{CC(opr)}$	18	-	V
DC Supply Voltage	$V_{CC(DC)}$	24	$R_s=220 \Omega$	V
Surge Supply Current	$I_{CC(S)}$	200	$\tau=100ms$	mA
Surge Input Voltage	$V_{IN(S)}$	65	$\tau=100ms$	V
Output Current	$I_{OL}$	300	-	mA
Power Dissipation	$P_D$	240	-	mW
Operating Temperature	$T_{opr}$	-30 ~ 85	-	°C
Storage Temperature	$T_{stg}$	-55 ~ 150	-	°C

## BLOCK DIAGRAM

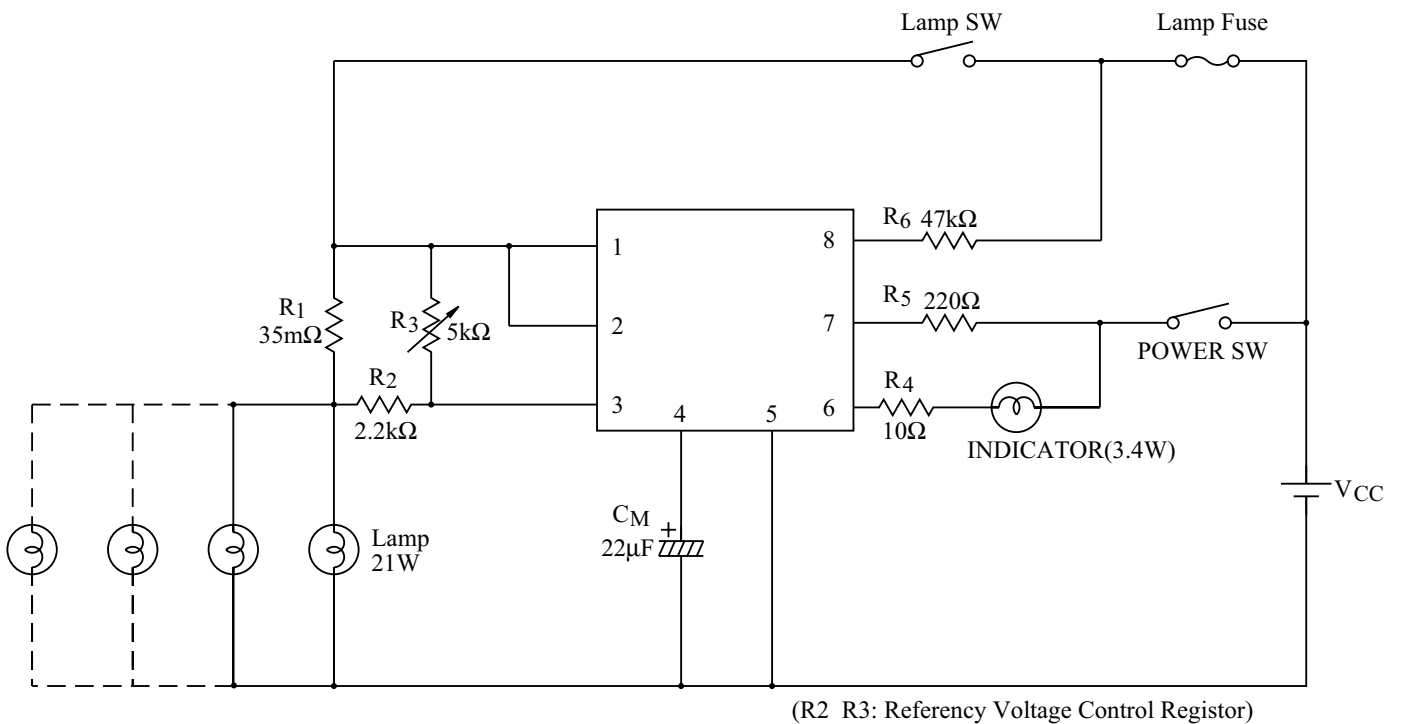


# KIA4210FV

ELECTRICAL CHARACTERISTICS ( $V_{CC}=13.2V$ ,  $R_S=220\ \Omega$ ,  $R_L=50\ \Omega$ ,  $T_a=25\ ^\circ C$ )

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Supply Current	$I_{CCQ}$	$V_{IF}=0$	1.6	2.6	4.5	mA
	$I_{CCH}$	$V_{CC}=24V$ , $V_{IF}=24V$	2.0	3.0	5.0	
Input Supply Current	$I_{CC(IN)}$	$V_{CC}=24V$	1.6	2.4	4.0	mA
Input Bias Current	$I_{IB}$	$V_{IN}=V_{CC(IN)}=13.2V$	-	400	1000	nA
Input Offset Voltage	$V_{IO}$	-	-	2	4	mV
Reference Voltage	$V_{R(12)}$	$V_{CC(IN)}=12V$	110	115	125	mV
	$V_{R(8)}/V_{R(12)}$	$V_{CC(IN)}=8V$	0.775	0.815	0.855	
	$V_{R(16)}/V_{R(12)}$	$V_{CC(IN)}=16V$	1.120	1.175	1.230	
Reference Circuit Resistor	$R_R$	$I_R=1mA$	250	400	550	$\Omega$
Memory Start Time	$T_{MS}$	$C_M=1\ \mu F$	27	54	100	ms
Memory Hold Voltage	$V_{MH}$	$V_{CC}=7.8V$	4.6	5.0	5.8	V
Fuse Open Det. Voltage	$V_{TH(F)}$	$R_F=47k\ \Omega$	2.6	3.8	5.0	V
OFF Clamp Voltage	$V_{IL(F)}$	$V_{CC}=0$ , $V_{IN(F)}=18V$ , $R=47k\ \Omega$	-	1.0	1.8	V
ON Clamp Voltage	$V_{IH(F)}$	$V_{CC}=18V$ , $V_{IN(F)}=18V$ , $R=47k\ \Omega$	5.0	5.4	6.5	V
Output Saturation Voltage	$V_{OL}$	$I_{OL}=240mA$	-	0.9	1.2	V
Output Current ("H" Level)	$I_{OH}$	$V_{CC}=24V$	-	-	1.0	mA
Over Voltage Protection Voltage	$V_{CCZ}$	$I_{CC}=200mA$ , $\tau=100ms$	35	55	65	V

## APPLICATION CIRCUIT



# KIA4210FV

