

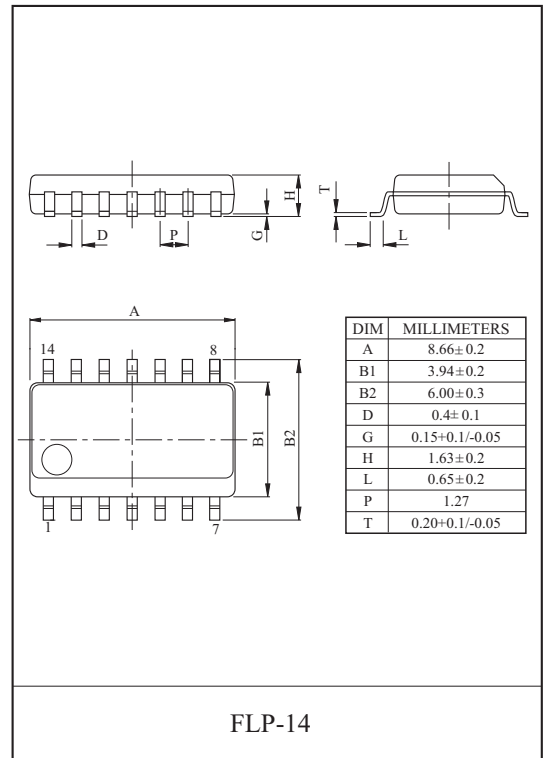
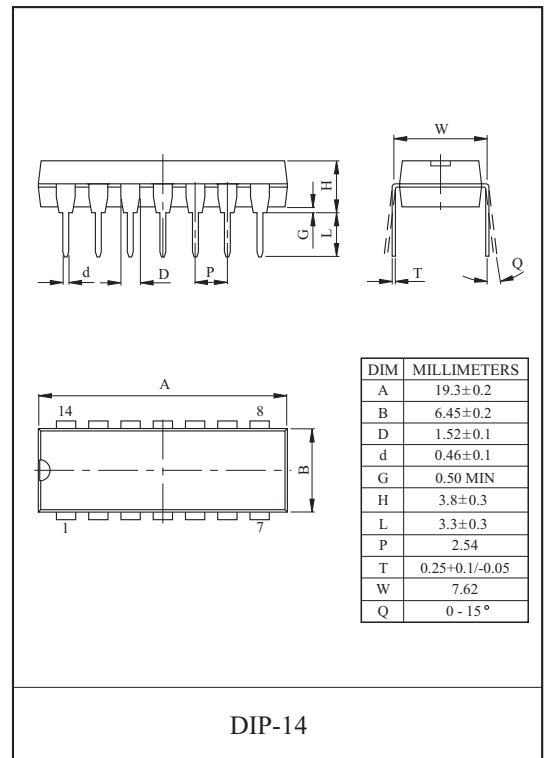
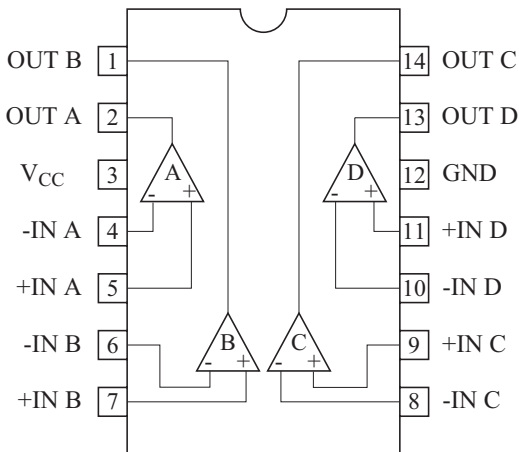
QUAD VOLTAGE COMPARATORS

This device consists of four independent voltage comparators that are designed to operate from a single power supply over a wide range of voltage. Normal operation from dual supplies is also to be guaranteed over a voltage range from 2V to 36V.

V_{CC} is necessary at least 1.5 volts more than the input common mode voltage. The output can be connected to other open collector outputs to achieve a Wired-OR relationship.

- Single Supply Voltage Range or Dual Supplies.
: $2V_{DC}$ to $36V_{DC}$ or $\pm 18V_{DC}$
- Low Supply Current : 0.8mA (Typ.)
- Low Input Offset Voltage : $\pm 2mV$ (Typ.)
- Wide Input Common Mode Voltage Range .
: $0V_{DC}$ to $V_{CC}-1.5V_{DC}$
- Output Compatible With TTL, DTL, MOS and CMOS Logic System.
- The Output Can be Connected to Achieve Wired-OR.
- Suffix U : Qualified to AEC-Q100 (Grade 1)
ex) KIA339P-EL/PU

PIN CONNECTION (TOP VIEW)

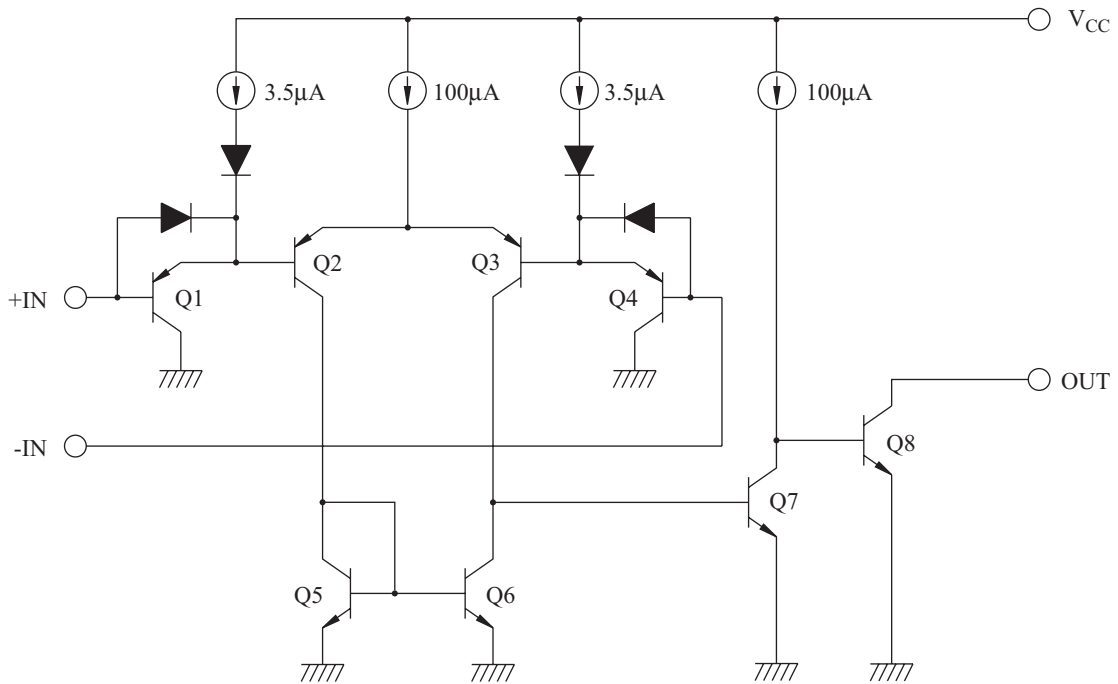


KIA339P/F

MAXIMUM RATINGS (Ta=25 °C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Supply Voltage		V_{CC}	$\pm 18, 36$	V
Differential Input Voltage		DV_{IN}	$\pm 18, 36$	V
Common Mode Input Voltage		CMV_{IN}	$-0.3 V_{CC}$	V
Power Dissipation	KIA339P	P_D	625	mW
	KIA339F		280	
Operating Temperature		T_{opr}	-40 125	
Storage Temperature		T_{stg}	-55 125	

EQUIVALENT CIRCUIT

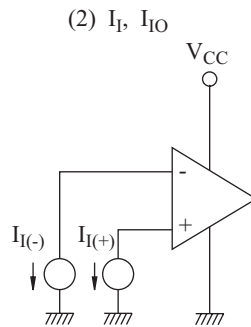
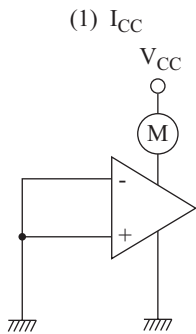


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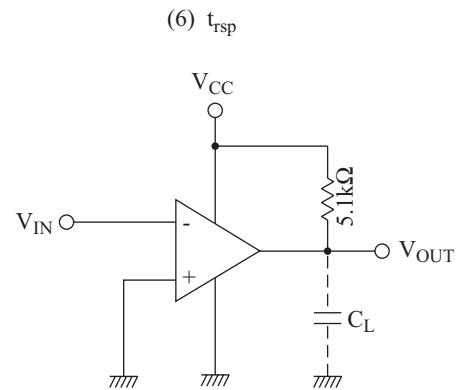
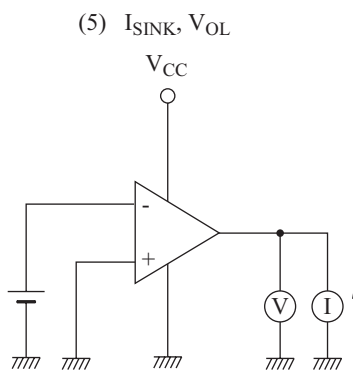
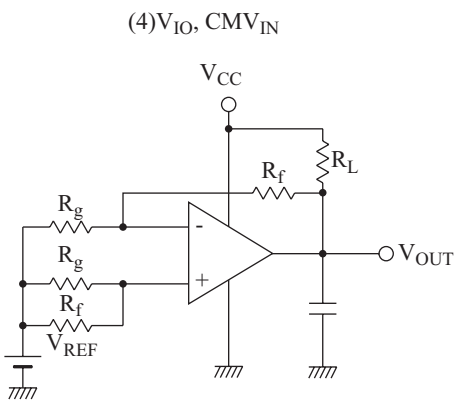
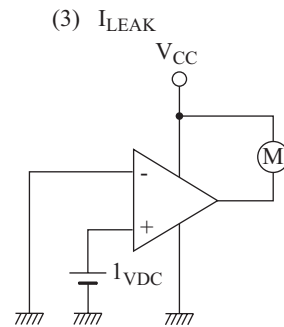
ELECTRICAL CHARACTERISTICS ($V_{CC}=5V$, $V_{EE}=GND$, $T_a=25^\circ C$)

CHARACTERISTIC	SYMBOL	TEST CIRCUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Input Offset Voltage	V_{IO}	4	$V_O=1.4V$	-	2	5	mV
Input Offset Current	I_{IO}	2	-	-	5	50	nA
Input Bias Current	I_I	2	-	-	25	250	nA
Common Mode Input Voltage	CMV_{IN}	4	-	0	-	$V_{CC}-1.5$	V
Voltage Gain	G_V	-	$R_L=15k$	-	200	-	V/mV
Supply Current	I_{CC}	1	No load	-	0.8	2	mA
Sink Current	I_{sink}	5	+IN=0V, -IN=1V, $V_{OL}=1.5V$	6	16	-	mA
Output Voltage ("L" Level)	V_{OL}	5	+IN=0V, -IN=1V, $I_{sink}=3mA$	-	0.2	0.4	V
Output Leak Current	I_{LEAK}	3	+IN=1V, -IN=0V, $V_O=5V$	-	0.1	-	nA
Response Time	t_{rsp}	6	$R_L=5.1k$, $C_L=15pF$	-	1.3	-	μs

TEST CIRCUIT

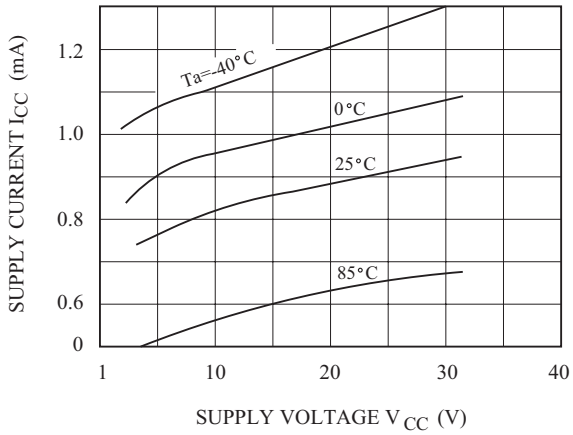


$$I_{IO} = |I_{I(+)} - I_{I(-)}|$$

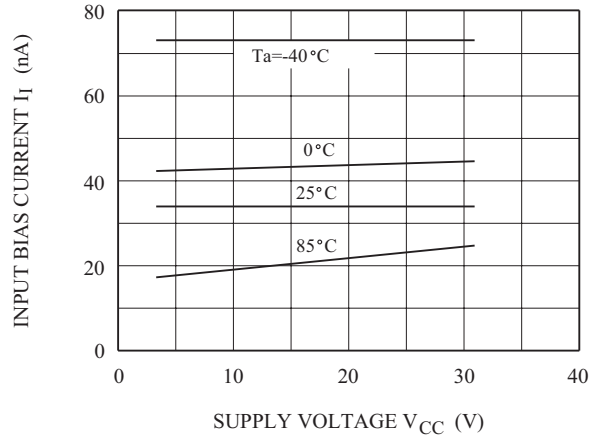


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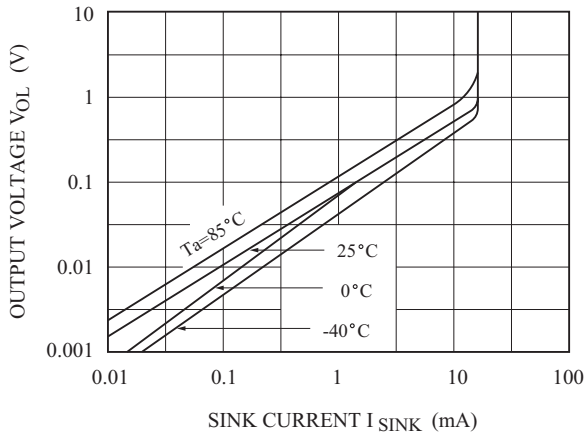
$V_{CC} - I_{CC}$



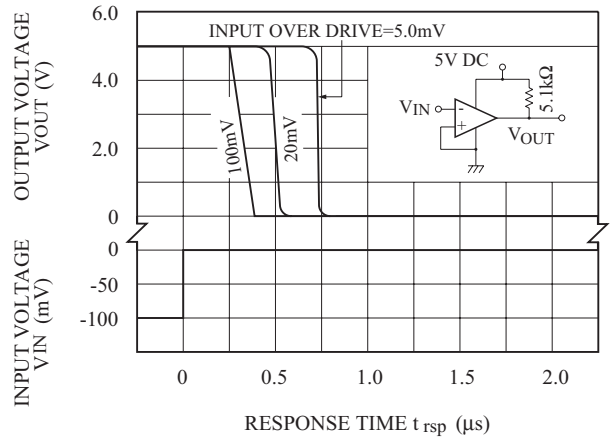
$V_{CC} - I_I$



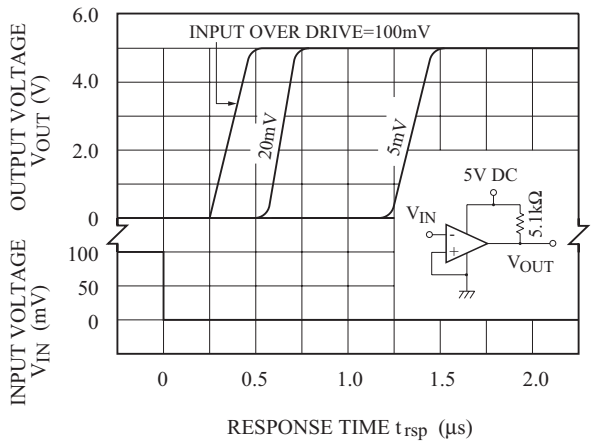
$V_{OL} - I_{SINK}$



$V_{IN}, V_{OUT} - t_{rsp}$



$V_{IN}, V_{OUT} - t_{rsp}$



$P_D - T_a$

