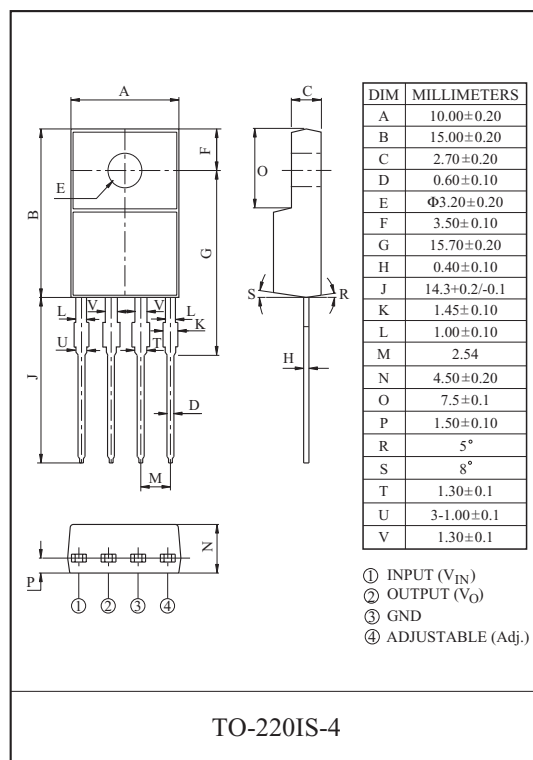


#### 1A ADJUSTABLE LOW DROP VOLTAGE REGULATOR

The KIA78R00PI is a Low Drop Voltage Regulator suitable for various electronic equipments. The Regulator has multi function such as over current protection, overheat protection.

#### FEATURES

- Adjustable Output Voltage (Range : 1.5~30V)
- 1.0A Output Low Drop Voltage Regulator.
- Built in Over Current Protection, Over Heat Protection Function.



#### MAXIMUM RATINGS (Ta=25 °C)

CHARACTERISTIC	SYMBOL	RATING	UNIT	Remark
Input Voltage	$V_{IN}$	35	V	-
Output Current	$I_{OUT}$	1	A	-
Power Dissipation 1	$P_{D1}$	1.5	W	No heatsink
Power Dissipation 2	$P_{D2}$	15	W	Infinite heatsink
Operating Junction Temperature	$T_{J(opr)}$	-40~150	°C	-
Storage Temperature	$T_{stg}$	-45~150	°C	-
Soldering Temperature (10sec)	$T_{sol}$	260	°C	-

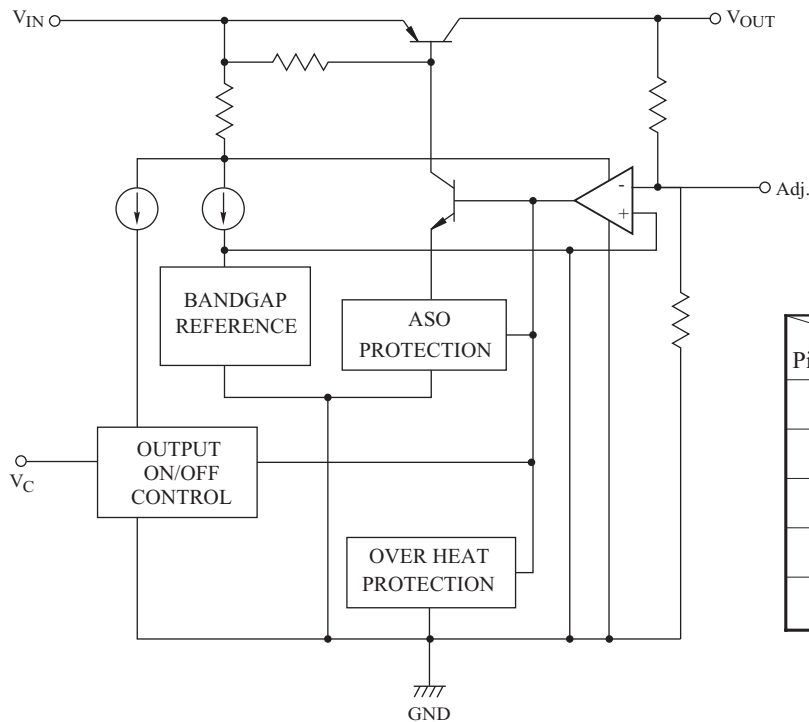
# KIA78R00PI

## ELECTRICAL CHARACTERISTICS

(Unless otherwise specified,  $V_{IN}=15V$ ,  $V_O=10V$ ,  $I_O=0.5A$ ,  $R_1=390\ \Omega$  (Note1 :  $V_{IN}=0.95V_{out}$ ))

CHARACTERISTIC	SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNIT	
Input Voltage	$V_{IN}$	-	4.5	-	35	V	
Output Voltage	$V_O$	$R_2=84\ \Omega$ to $8.7k\ \Omega$	1.5	-	30	V	
Load Regulation	Reg Load	$I_O=5mA \sim 1A$	-	-	2.0	%	
Line Regulation	Reg Line	$V_{IN}=11V \sim 28V$	-	-	2.5	%	
Ripple Rejection	$R \cdot R$	$C_{ref}=0$	Refer to Fig.2	45	55	-	dB
		$C_{ref}=3.3\ \mu F$		55	65	-	
Reference Voltage	$V_{ref}$	-	1.26	1.29	1.32	V	
Temperature coefficient of reference Voltage	$T_C V_{ref}$	$T_j=0 \sim 125\ ^\circ C$	-	$\pm 1.0$	-	%	
DropOut Voltage	$V_D$	$I_O=1.0A$ (Note1)	-	-	0.5	V	
Quiescent Current	$I_Q$	$I_O=0A$	-	-	10	mA	

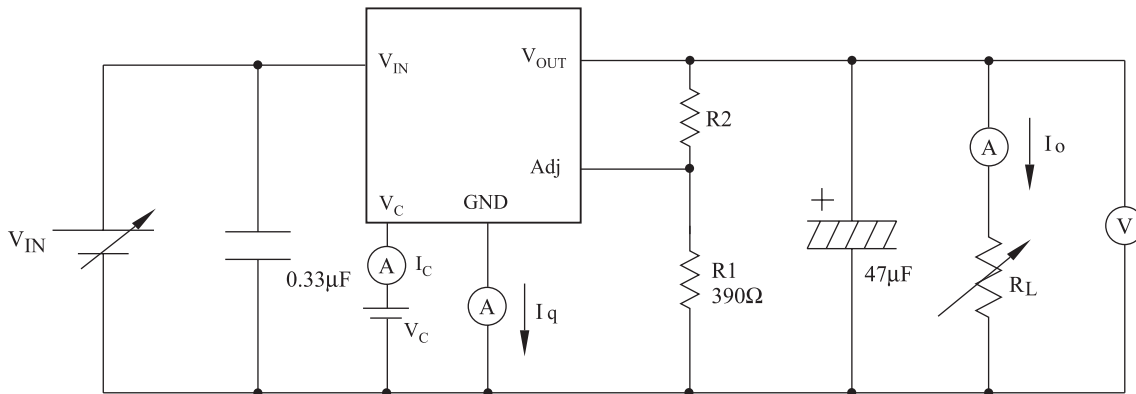
## BLOCK DIAGRAM



Pin NO	ITEM	KIA78R00PI (TO-220IS-4)
1		$V_{IN}$
2		$V_{OUT}$
3		GND
4		Adj
5		-

# KIA78R00PI

**Fig. 1 Standard Test Circuit**



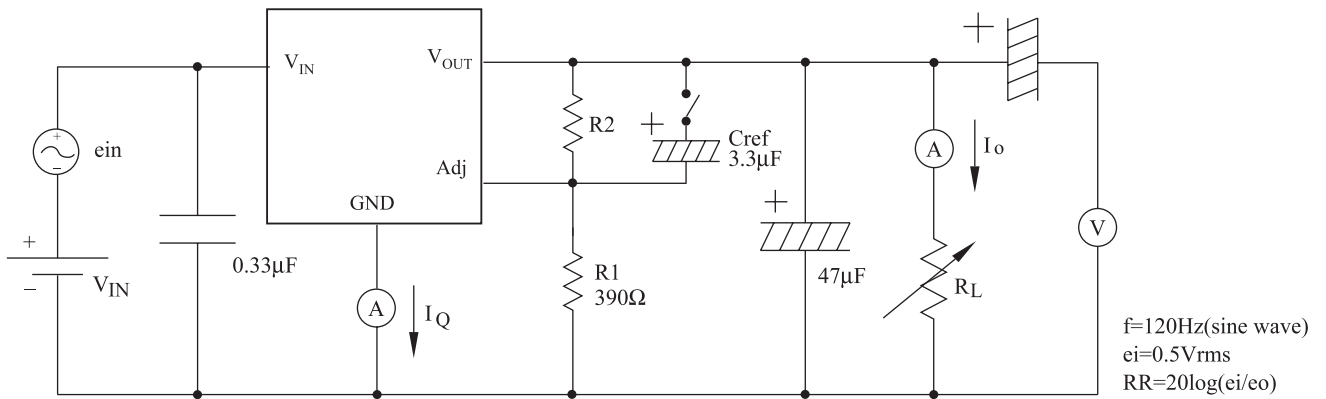
$$V_{OUT} = V_{ref} \times \left( 1 + \frac{R2}{R1} \right) = 1.29 \times \left( 1 + \frac{R2}{R1} \right)$$

$C_{IN}$  : More than 0.33µF required if regulator is located an appreciable distance from power supply filter.

You must use to prevent from the parasitic oscillation.

$C_{OUT}$  : More than 47µF. You must use the Low-impedance-type(low ESR) capacitor.

**Fig. 2 Ripple Rejection Circuit**



# KIA78R00PI

Fig. 3  $I_O - V_O$

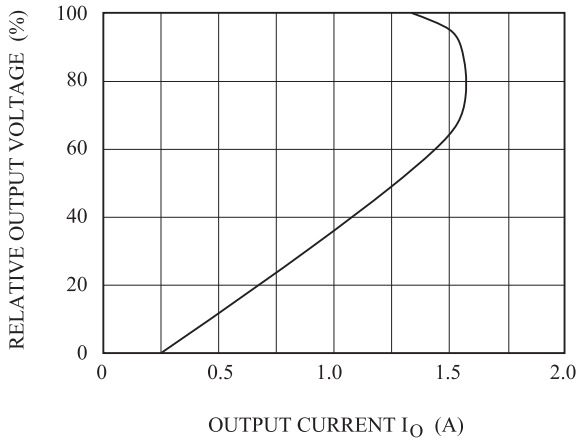


Fig. 4  $T_j - \Delta V_O$

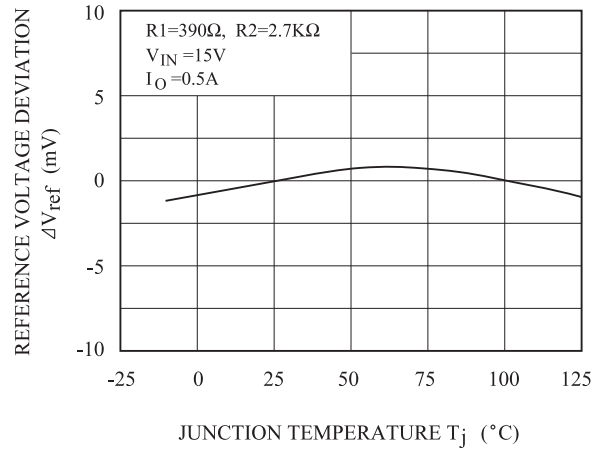


Fig. 5  $V_{IN} - V_O$

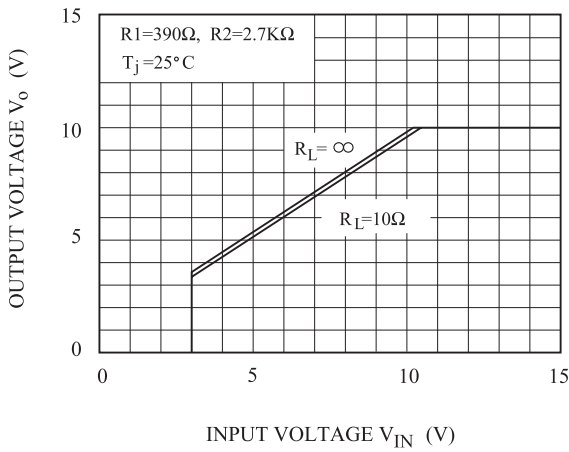


Fig. 6  $T_j - V_D$

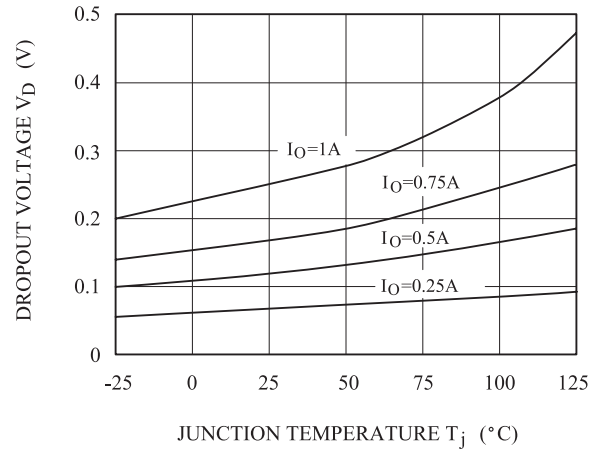


Fig. 7  $T_j - I_q$

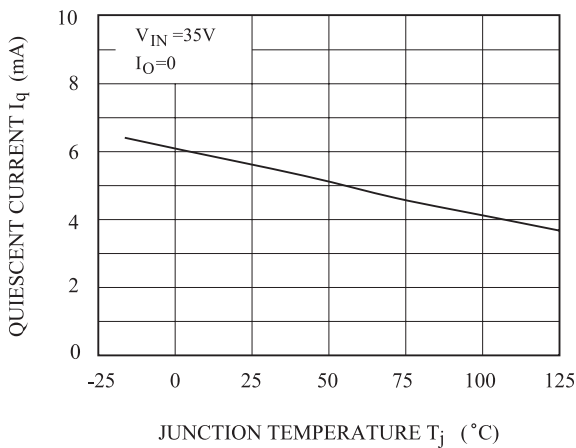
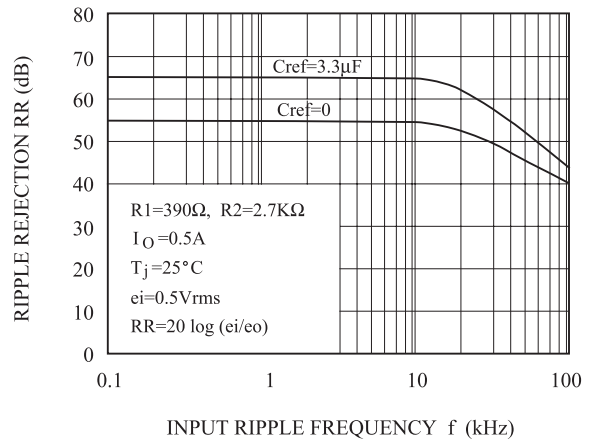


Fig. 8  $f - RR$



# KIA78R00PI

Fig. 9  $I_O$  - RR

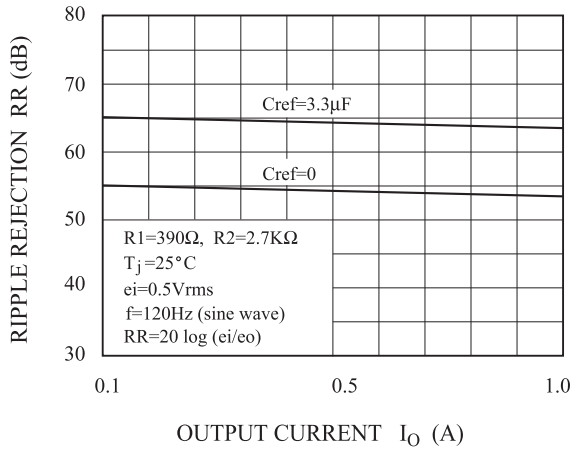


Fig. 10  $R_2$  -  $V_O$

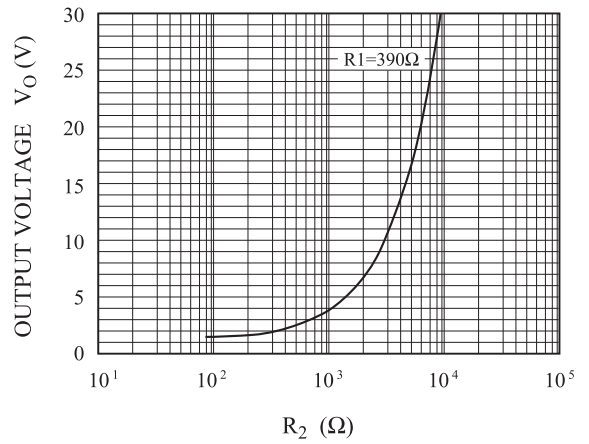


Fig.11  $P_D$  -  $T_a$  (PI-Type : TO-220IS-4)

