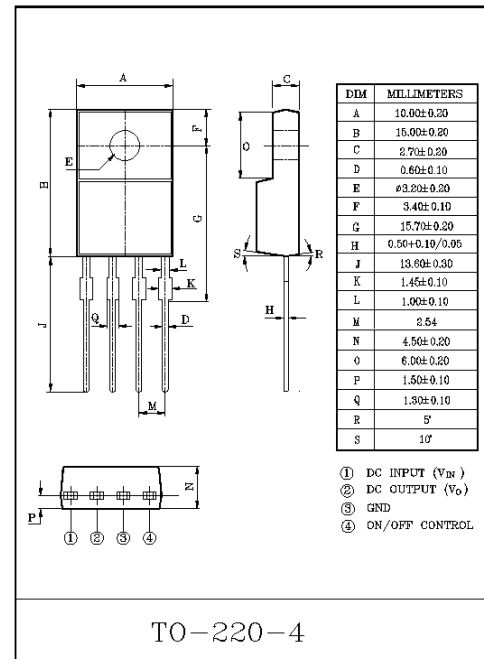


4 TERMINAL LOW DROP VOLTAGE REGULATOR

The KIA78R×× Series are Low Drop Voltage Regulator suitable for various electronic equipments. It provides constant voltage power source with TO-220 4 terminal lead full molded PKG. The Regulator has multi function such as over current protection, overheat protection and ON/OFF control.

FEATURES

- 1.0A Output Low Drop Voltage Regulator.
- Built in ON/OFF Control Terminal.
- Built in Over Current Protection, Over Heat Protection Function.

**MAXIMUM RATINGS ($T_a=25^\circ\text{C}$)**

CHARACTERISTIC	SYMBOL	RATING	UNIT	Remark
Input Voltage	V_{IN}	35	V	-
ON/OFF Control Voltage	V_C	35	V	-
Output Current	I_O	1	A	-
Power Dissipation 1	P_{d1}	1.5	W	No heatsink
Power Dissipation 2	P_{d2}	15	W	with heatsink
Junction Temperature	T_j	125	$^\circ\text{C}$	-
Operating Temperature	T_{opr}	-20~80	$^\circ\text{C}$	-
Storage Temperature	T_{stg}	-30~125	$^\circ\text{C}$	-
Soldering Temperature (10sec)	T_{sol}	260	$^\circ\text{C}$	-

KIA78R05PI ~ KIA78R15PI

ELECTRICAL CHARACTERISTICS

(Unless otherwise specified, $I_o=0.5A$, $T_a=25^{\circ}C$, Note1.)

CHARACTERISTIC	SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNIT
Output Voltage	KIA78R05	-	4.9	5.0	5.1	V
	KIA78R09	-	8.82	9.0	9.18	
	KIA78R12	-	11.76	12.0	12.24	
	KIA78R15	-	14.70	15.0	15.30	
Load Regulation	Reg Load	$I_o=5mA \sim 1A$	-	0.1	2.0	%
Line Regulation	Reg Line	(Note 2)	-	0.5	2.5	%
Ripple Rejection	R·R		55	65	-	dB
Drop Out Voltage	V_D	(Note 3)	-	-	0.5	V
Output ON state for control Voltage	$V_{C(ON)}$		2.0	-	-	V
Output ON state for control Current	$I_{C(ON)}$	$V_C=2.7V$	-	-	20	μA
Output OFF state for control Voltage	$V_{C(OFF)}$	-	-	-	0.8	V
Output OFF state for control Current	$I_{C(OFF)}$	$V_C=0.4V$	-	-	-0.4	mA
Quiescent Current	I_Q	$I_o=0$	-	-	10	mA

Note1) V_{IN} of KIA78R05=7V

" KIA78R09=15V

" KIA78R12=18V

" KIA78R15=21V

Note2) V_{IN} of KIA78R05=6~12V

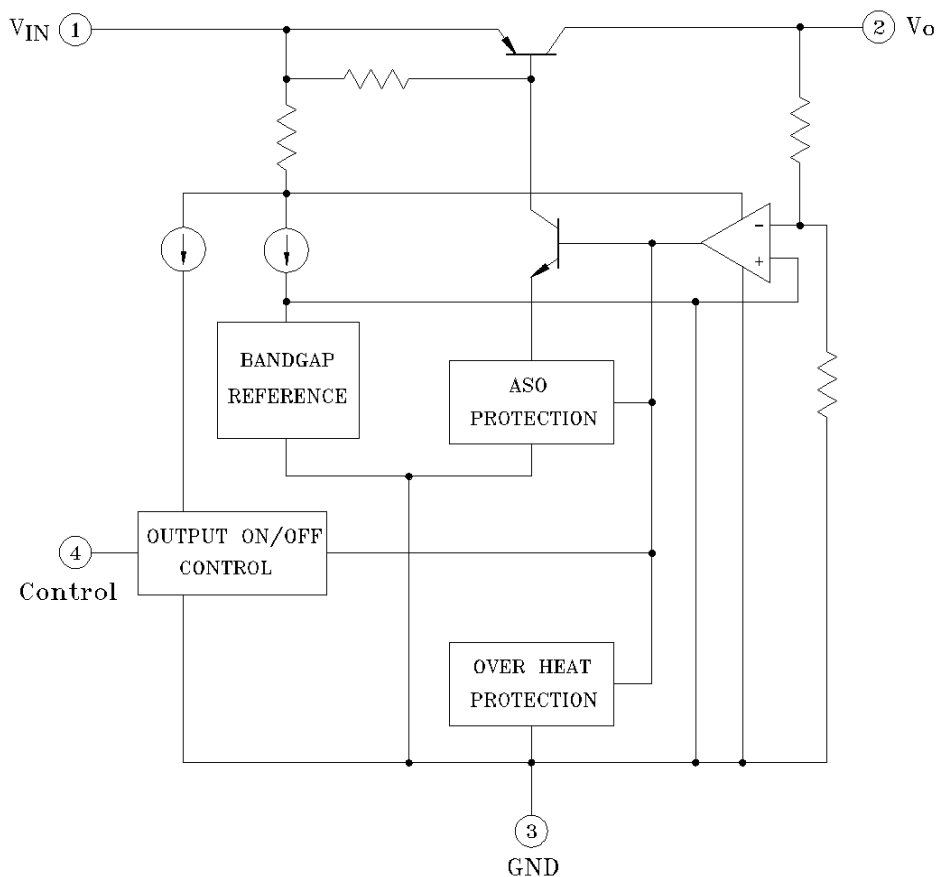
" KIA78R09=10~25V

" KIA78R12=13~29V

" KIA78R15=16~32V

Note3) At $V_{IN}=0.95V_o$

BLOCK DIAGRAM



KIA78R05PI ~ KIA78R15PI

Fig. 1 Standard Test Circuit

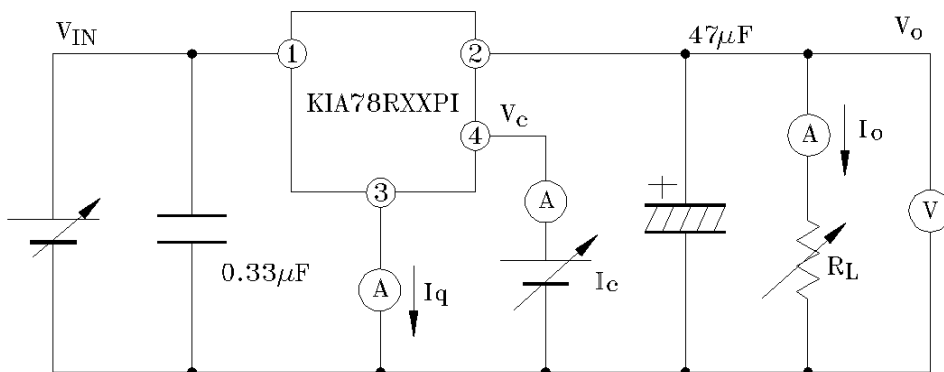


Fig. 1 Ripple Rejection Test Circuit

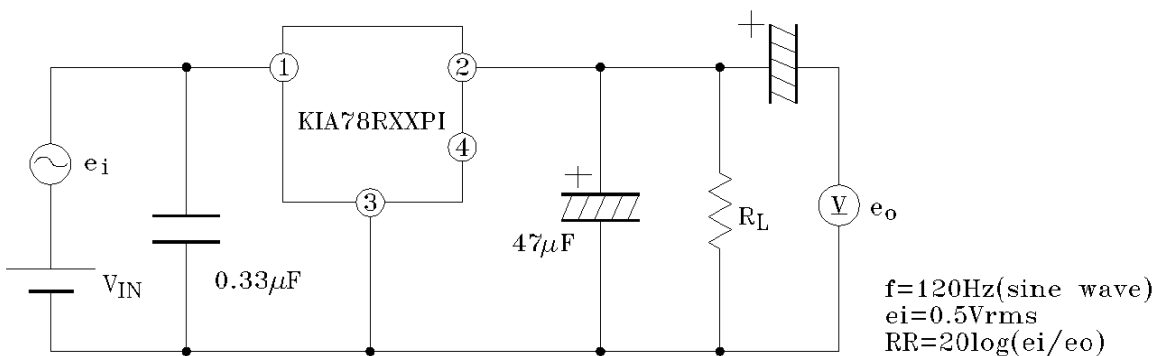
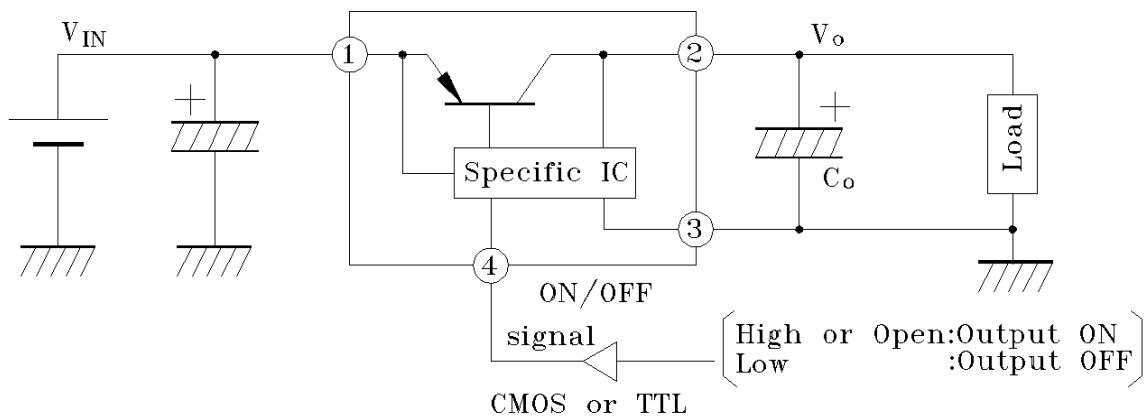
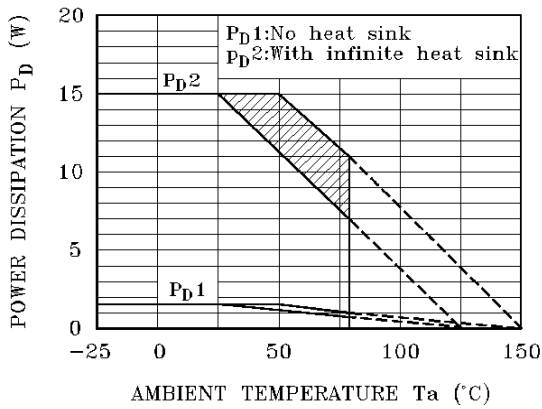


Fig. 11 Application Circuit for Standard



KIA78R05PI ~ KIA78R15PI

Fig.3 $T_a - P_D$



Note) Oblique line portion : Overheat protection may operate in this area.

Fig.4 $I_o - V_o$

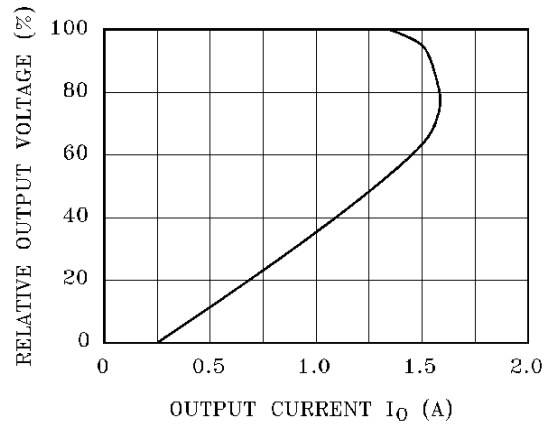


Fig.5-1 $T_j - \Delta V_o$ (KIA78R05)

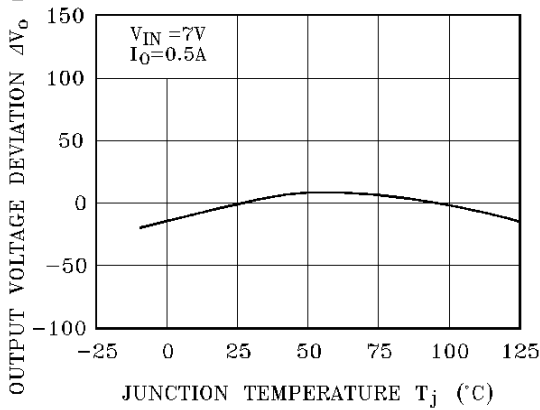


Fig.5-2 $T_j - \Delta V_o$ (KIA78R09)

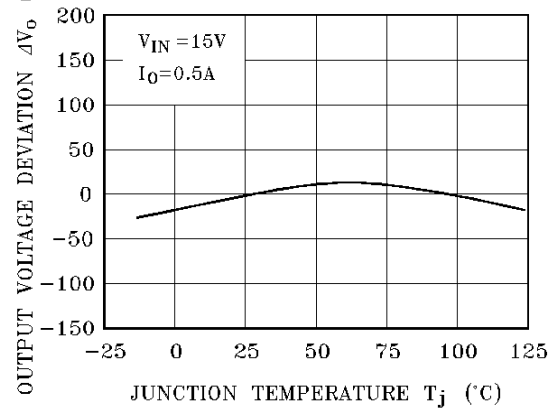


Fig.5-3 $T_j - \Delta V_o$ (KIA78R12)

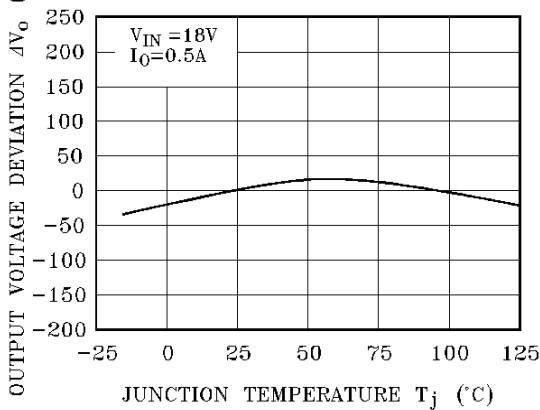
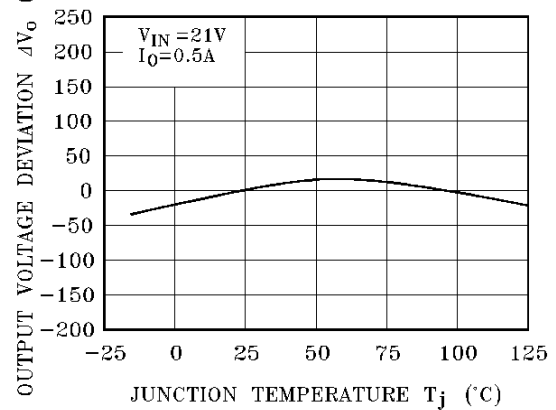


Fig.5-4 $T_j - \Delta V_o$ (KIA78R15)



KIA78R05PI ~ KIA78R15PI

Fig.6-1 $V_{IN} - V_o$ (KIA78R05)

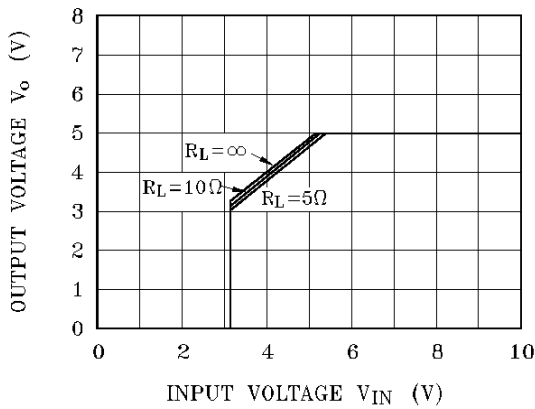


Fig.6-2 $V_{IN} - V_o$ (KIA78R09)

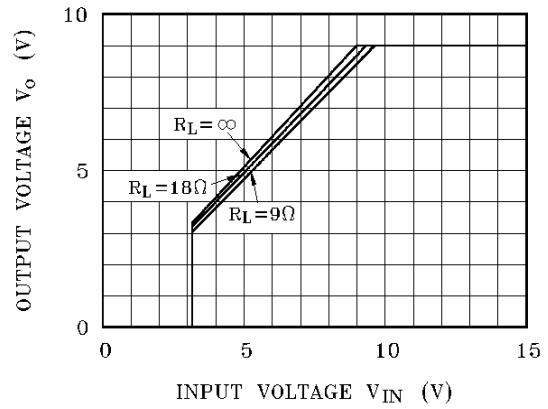


Fig.6-3 $V_{IN} - V_o$ (KIA78R12)

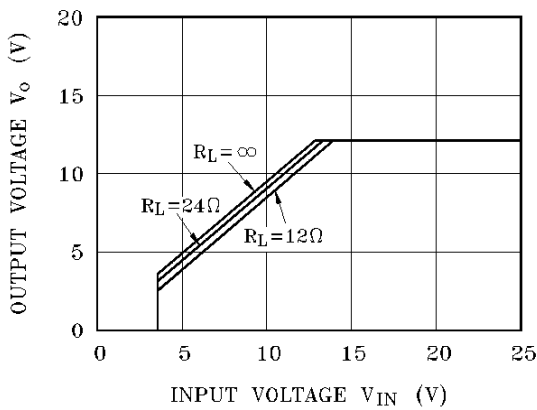


Fig.6-4 $V_{IN} - V_o$ (KIA78R15)

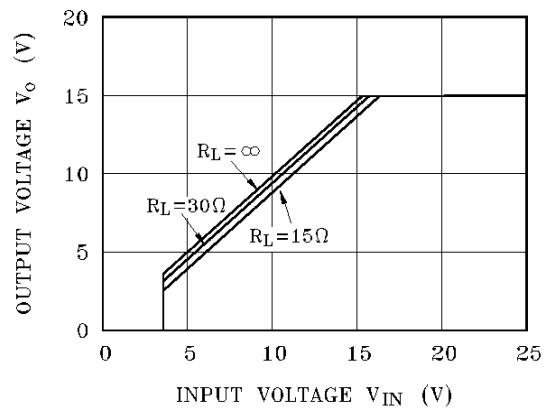


Fig.7-1 $V_{IN} - I_{BIAS}$ (KIA78R05)

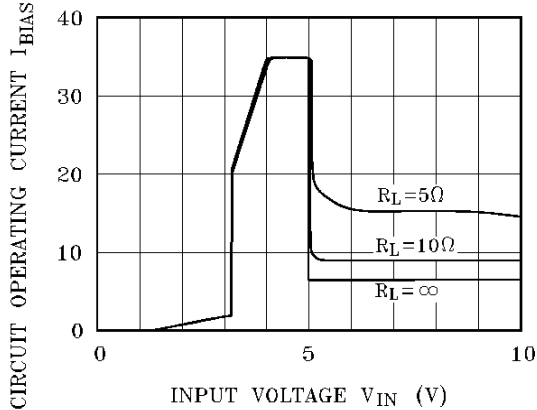
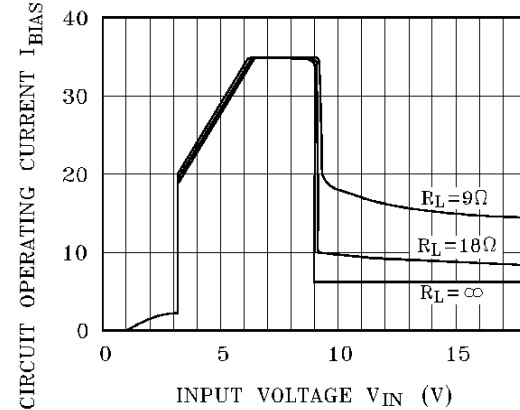


Fig.7-2 $V_{IN} - I_{BIAS}$ (KIA78R09)



KIA78R05PI ~ KIA78R15PI

