

4 TERMINAL LOW DROP VOLTAGE REGULATOR

The KIA78R $\times$ 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.

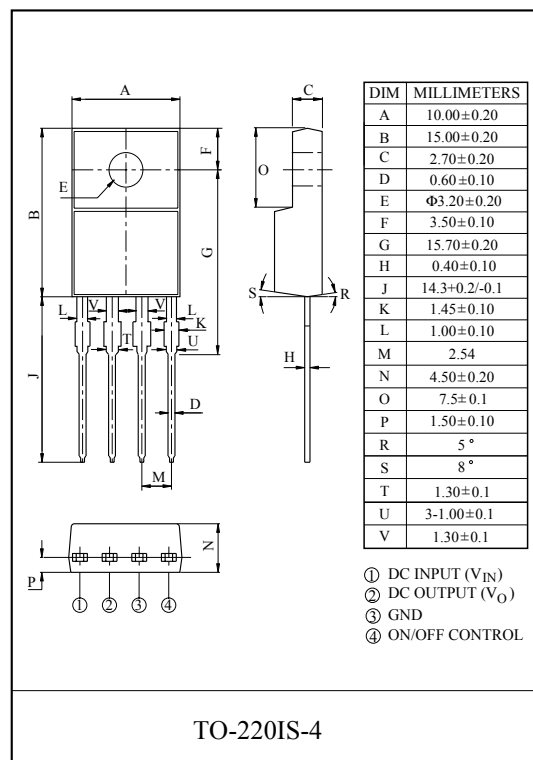
FEATURES

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

LINE UP

ITEM	OUTPUT VOLTAGE (Typ.)	UNIT
* KIA78R25PI	2.5	V
* KIA78R30PI	3.0	
KIA78R33PI	3.3	
* KIA78R35PI	3.5	
* KIA78R37PI	3.7	

Note) *: Under development



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

CHARACTERISTIC	SYMBOL	RATING	UNIT	Remark
Input Voltage	V_{IN}	15	V	-
ON/OFF Control Voltage	V_C	15	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	$^{\circ}\text{C}$	-

KIA78R25PI~KIA78R37PI

ELECTRICAL CHARACTERISTICS (Ta=25℃)

(Unless otherwise specified, I_O=0.5A, Ta=25℃, Note1.)

CHARACTERISTIC		SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNIT
Output Voltage	KIA78R25	V _O	-	2.438	2.50	2.562	V
	KIA78R30		-	2.925	3.00	3.075	
	KIA78R33		-	3.220	3.30	3.380	
	KIA78R35		-	3.413	3.50	3.587	
	KIA78R37		-	3.608	3.70	3.792	
Load Regulation		Reg Load	I _O =5mA ~ 1A	-	0.1	2.0	%
Line Regulation		Reg Line	(Note 2)	-	0.5	2.5	%
Temperature Coefficient of Output Voltage		T _C V _O	T _j =0 ~ 125℃	-	±0.02	±0.05	%/℃
Ripple Rejection		R · R	-	45	55	-	dB
Drop Out Voltage		V _D	I _O =1A	-	-	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 KIA78R25=4.2V

Note2) V_{IN} of KIA78R25=3.2 ~ 10V

Note3) At V_{IN}=0.95V_O

" KIA78R30=4.7V

" KIA78R30=3.7 ~ 10V

" KIA78R33=5.0V

" KIA78R33=4.0 ~ 10V

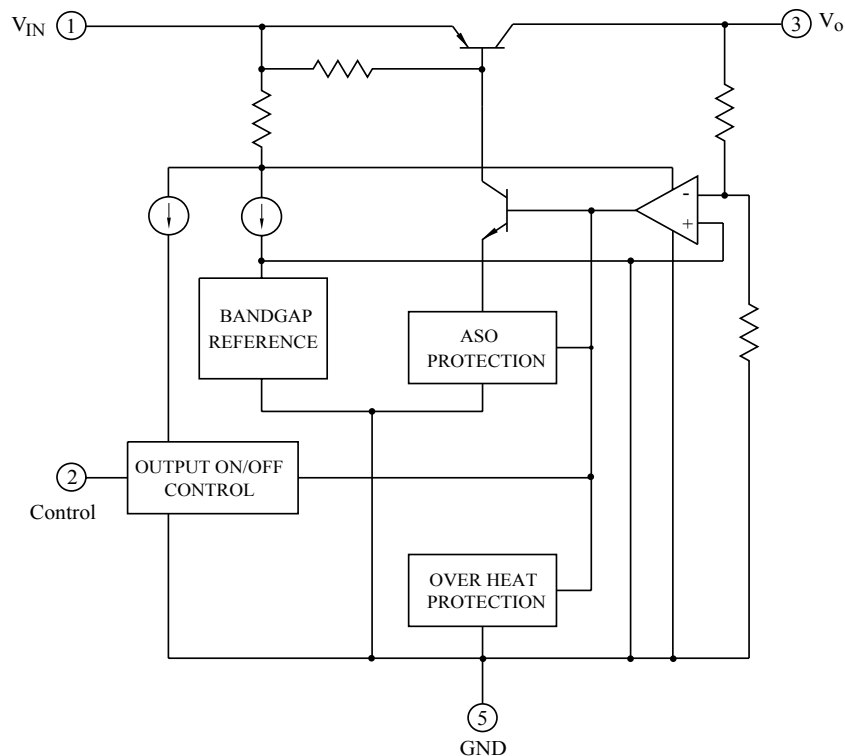
" KIA78R35=5.2V

" KIA78R35=4.2 ~ 10V

" KIA78R37=5.4V

" KIA78R37=4.4 ~ 10V

BLOCK DIAGRAM



KIA78R25PI~KIA78R37PI

Fig. 1 Standard Test Circuit

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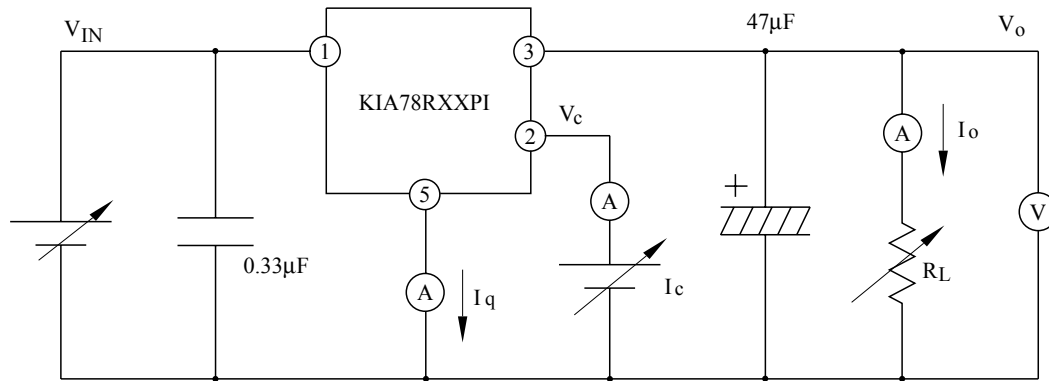


Fig. 1-2 Ripple Rejection Test Circuit

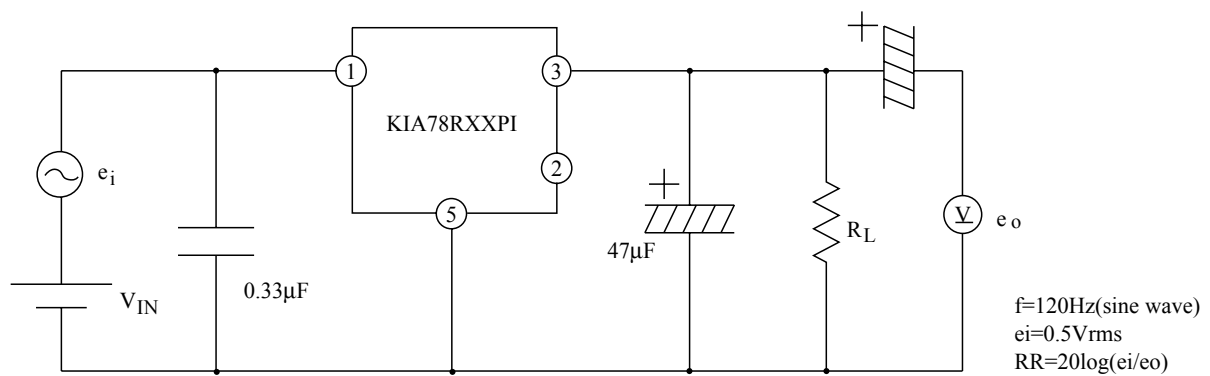
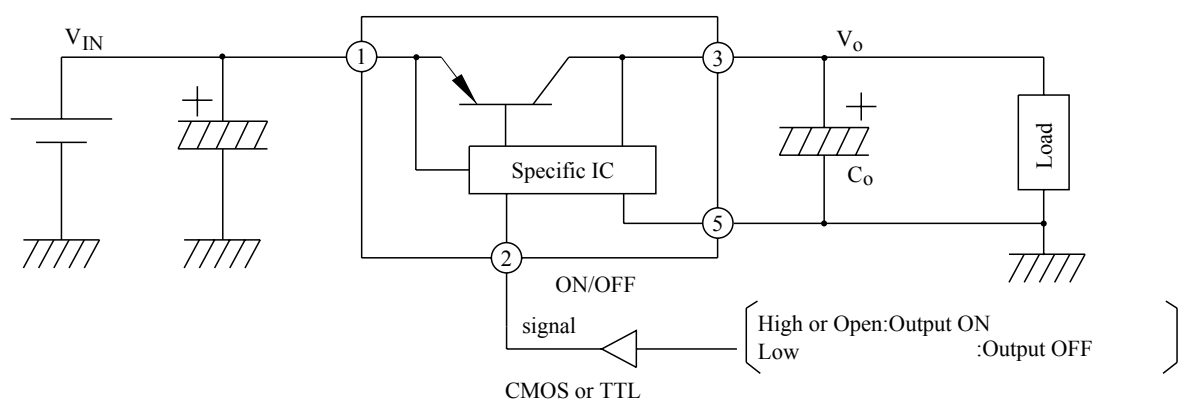
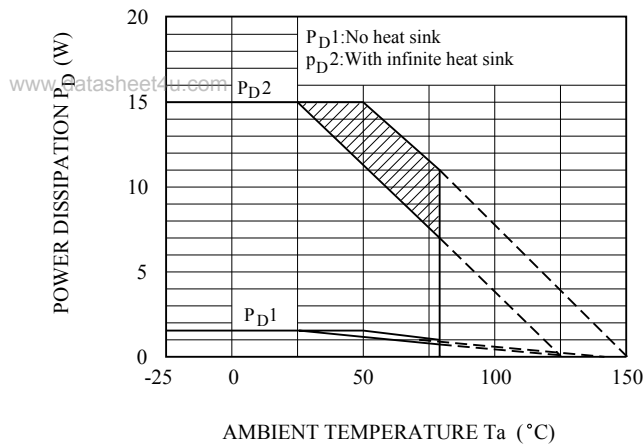


Fig. 2 Application Circuit for Standard



KIA78R25PI~KIA78R37PI

Fig.3 $T_a - P_D$



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

Fig.4 $I_O - V_O$

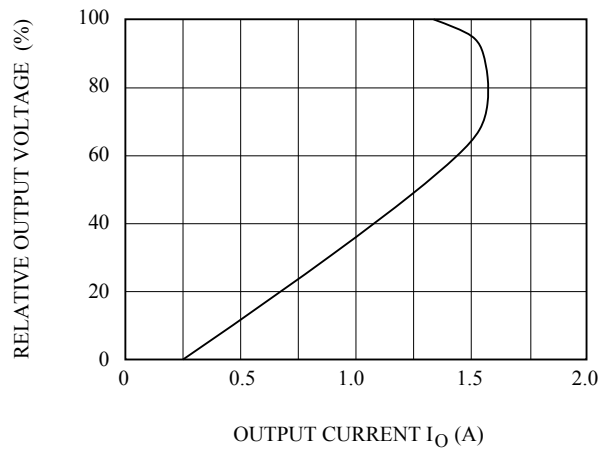


Fig.5-1 $T_j - \Delta V_O$ (KIA78R25)

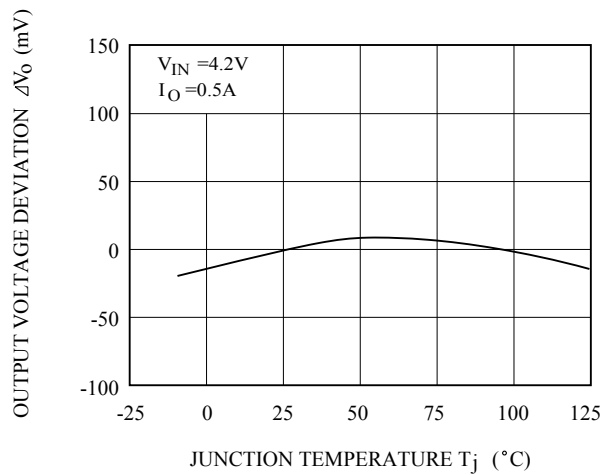


Fig.5-2 $T_j - \Delta V_O$ (KIA78R30)

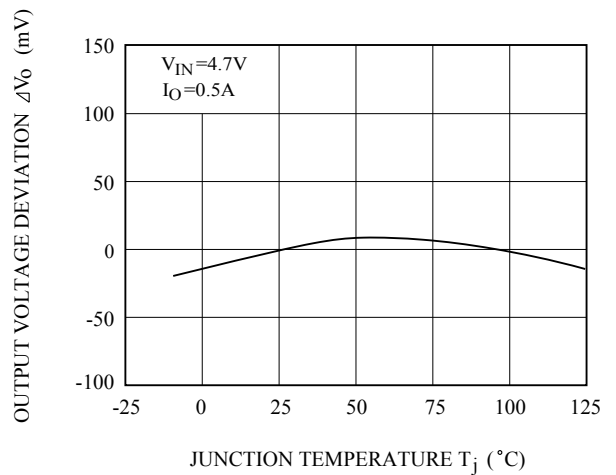


Fig.5-3 $T_j - \Delta V_O$ (KIA78R33)

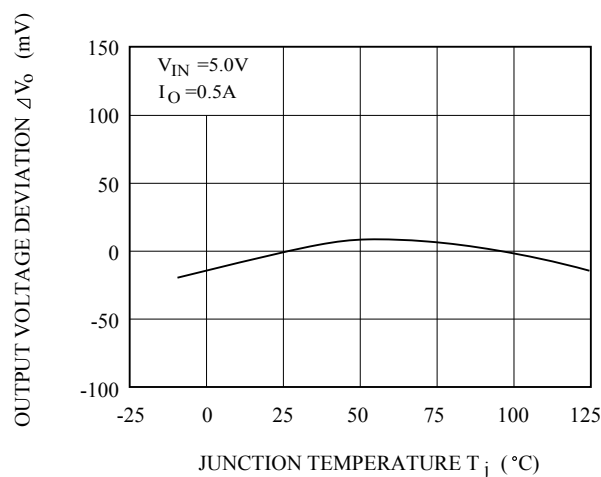
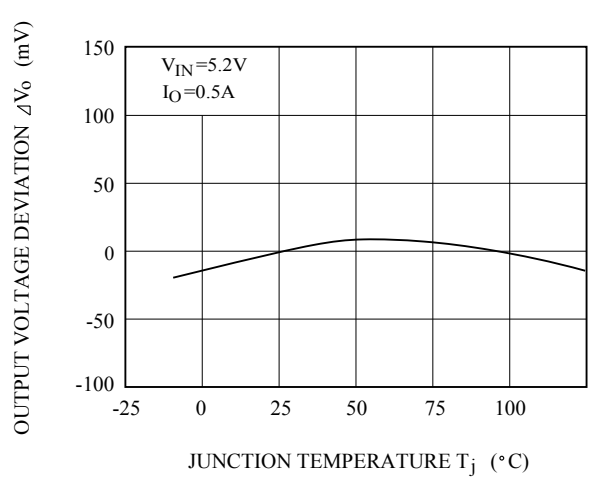


Fig.5-4 $T_j - \Delta V_O$ (KIA78R35)



KIA78R25PI~KIA78R37PI

Fig.5-5 $T_j - \Delta V_o$ (KIA78R37)

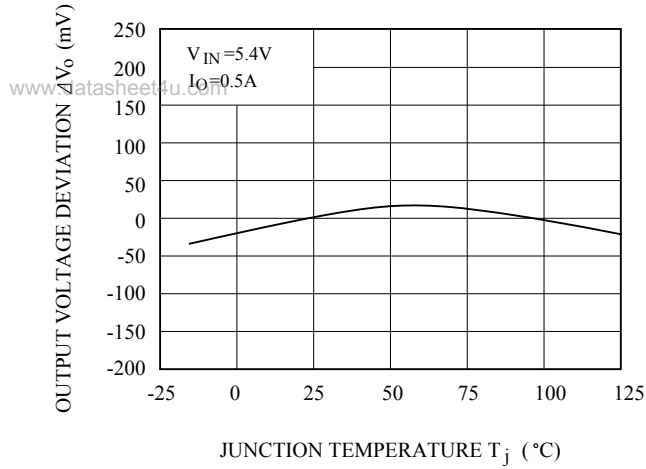


Fig.6 $T_j - V_D$

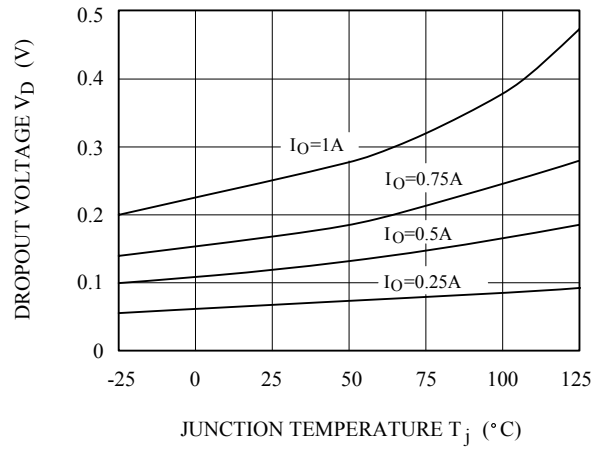


Fig.7 $T_j - I_q$

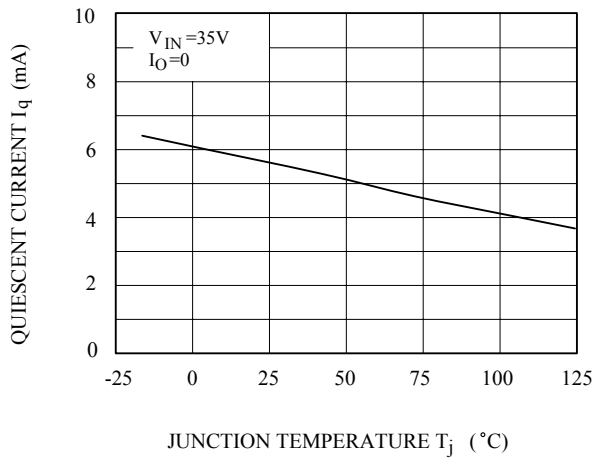


Fig.8-1 $f - RR$

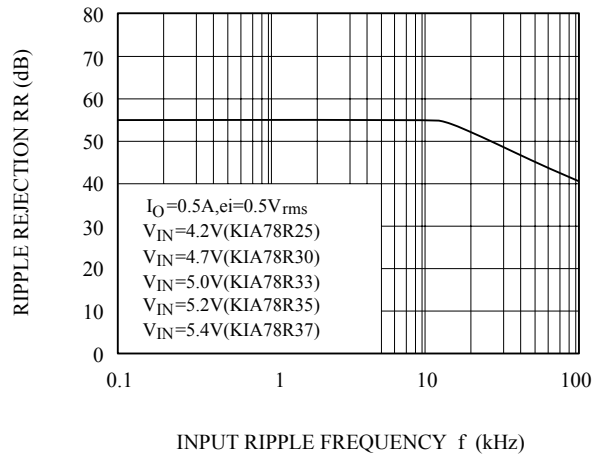


Fig.10-2 $I_O - RR$

