

### 4 TERMINAL 3A OUTPUT LOW DROP VOLTAGE REGULATOR

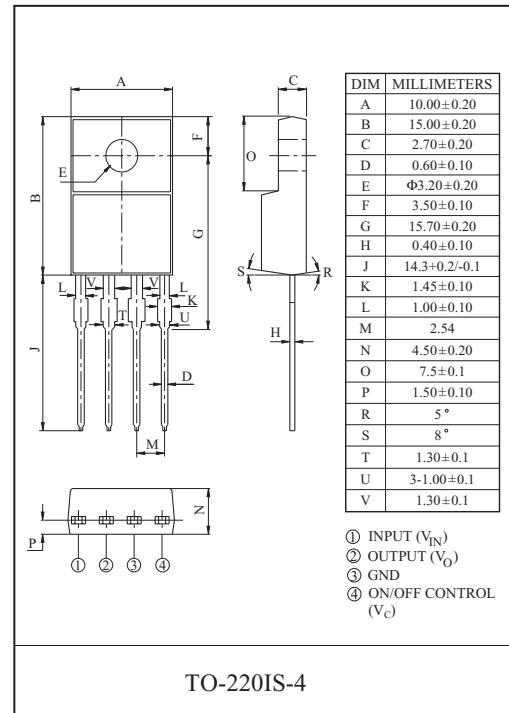
The KIA378R × × Series are Low Drop Voltage Regulator suitable for various electronic equipments. It provides constant voltage power source with TO-220IS-4 terminal lead full molded PKG. The Regulator has multi-function such as over current protection, overheat protection and ON/OFF control.

#### FEATURES

- 3.0A 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
KIA378R25PI	2.5	V
KIA378R33PI	3.3	
KIA378R35PI	3.5	



#### MAXIMUM RATINGS (Ta=25 °C)

CHARACTERISTIC	SYMBOL	RATING	UNIT	Remark
Input Voltage	V <sub>IN</sub>	35	V	-
ON/OFF Control Voltage	V <sub>C</sub>	35	V	-
Output Current	I <sub>O</sub>	3	A	-
Power Dissipation 1	P <sub>d1</sub>	1.5	W	No heatsink
Power Dissipation 2	P <sub>d2</sub>	15	W	with heatsink
Operating Junction Temperature	T <sub>J(opr)</sub>	-40~150	°C	-
Storage Temperature	T <sub>stg</sub>	-45 ~150	°C	-
Soldering Temperature (10sec)	T <sub>sol</sub>	260	°C	-

# KIA378R25PI~KIA378R35PI

## ELECTRICAL CHARACTERISTICS

(Unless otherwise specified,  $I_O=1.0A$ ,  $T_a=25^\circ C$ , Note1.)

CHARACTERISTIC	SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNIT
Output Voltage	KIA378R25	-	2.438	2.50	2.562	V
	KIA378R33	-	3.220	3.30	3.380	
	KIA378R35	-	3.413	3.50	3.587	
Load Regulation	Reg Load	$I_O=5mA \sim 3A$	-	0.1	2.0	%
Line Regulation	Reg Line	(Note 2)	-	0.5	2.5	%
Temperature Coefficient of Output Voltage	$T_C V_O$	$T_j=0 \sim 125^\circ C$	-	$\pm 0.02$	$\pm 0.05$	%/ $^\circ C$
Ripple Rejection	$R \cdot R$	-	45	55	-	dB
Drop Out Voltage	$V_D$	$I_O=3A$	-	-	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	$\mu A$
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 KIA378R25=4.2V

" KIA378R33=5.0V

" KIA378R35=5.2V

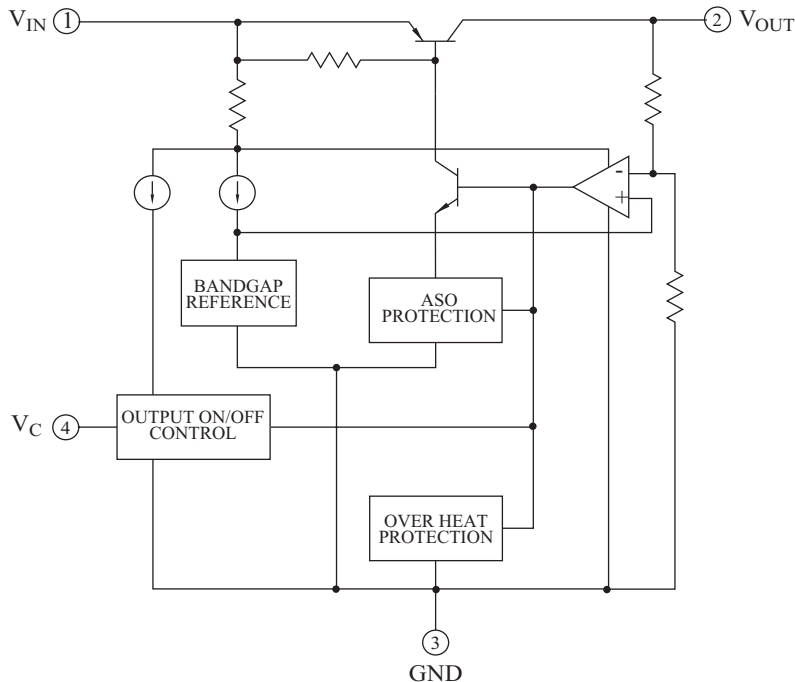
Note2)  $V_{IN}$  of KIA378R25=3.2 ~ 10V

" KIA378R33=4.0 ~ 10V

" KIA378R35=4.2 ~ 10V

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

## BLOCK DIAGRAM



# KIA378R25PI~KIA378R35PI

Fig. 1 Standard Test Circuit

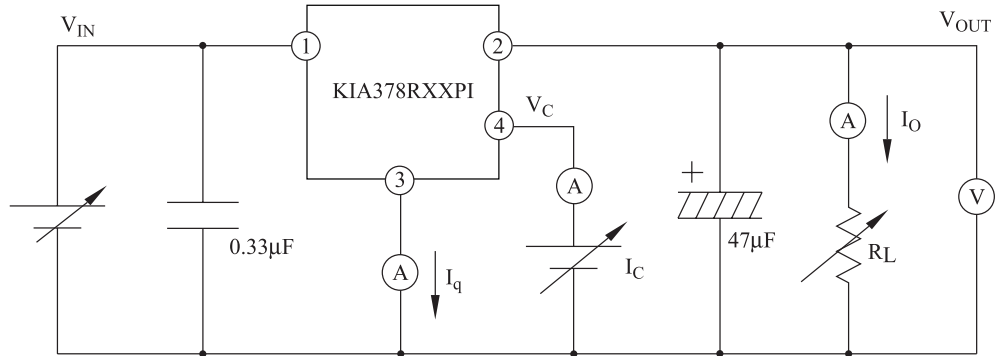


Fig. 1-2 Ripple Rejection Test Circuit

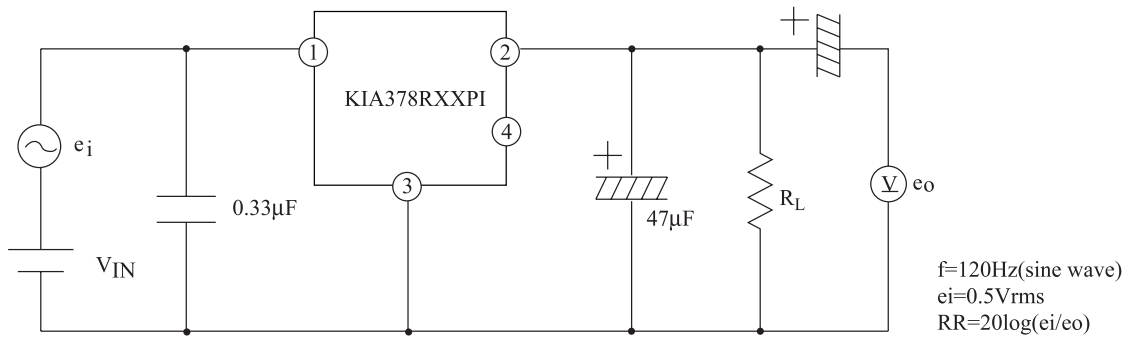
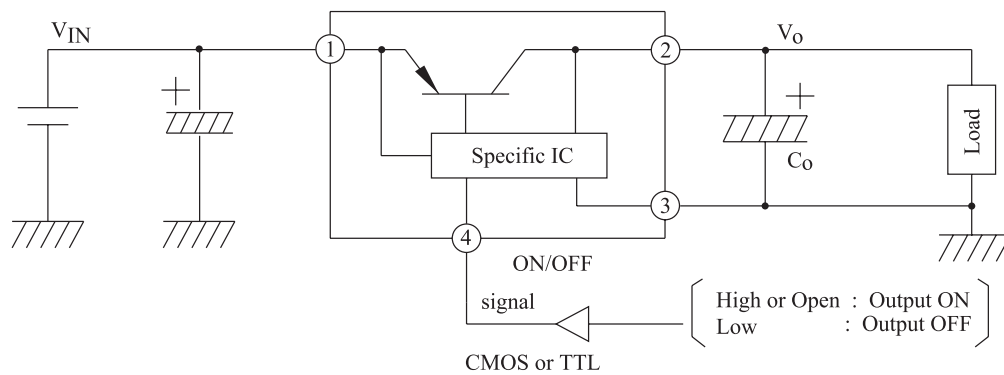
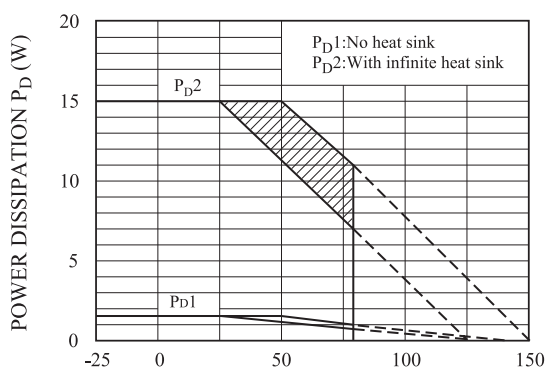


Fig. 2 Application Circuit for Standard



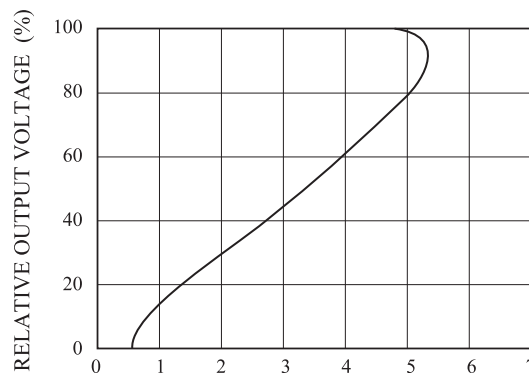
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Fig.3  $T_a - P_D$



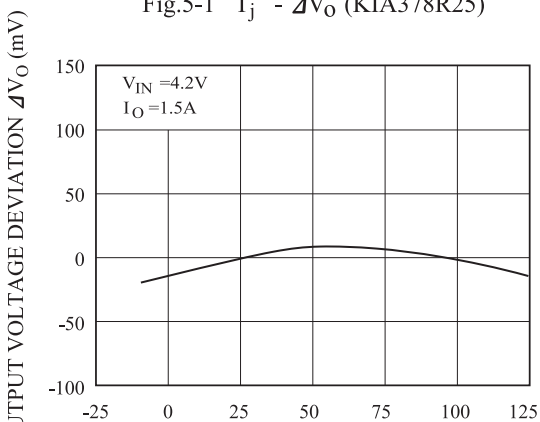
AMBIENT TEMPERATURE  $T_a$  (°C)  
 Note) Oblique line portion : Overheat protection may operate in this area.

Fig.4  $I_O - V_O$



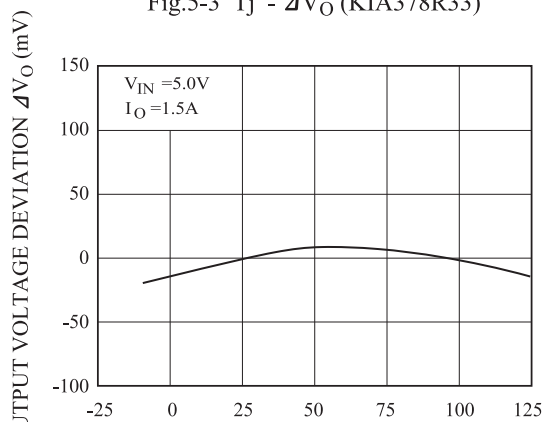
OUTPUT CURRENT  $I_O$  (A)

Fig.5-1  $T_j - \Delta V_O$  (KIA378R25)



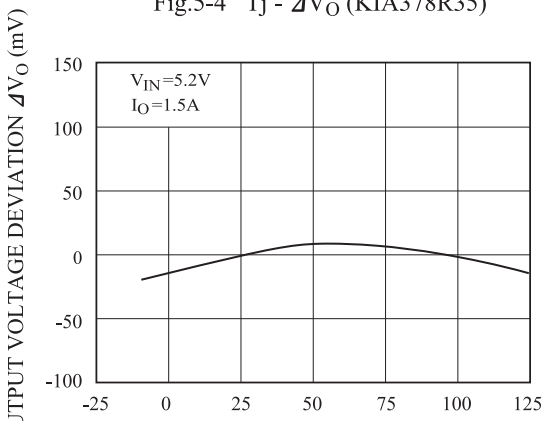
JUNCTION TEMPERATURE  $T_j$  (°C)

Fig.5-3  $T_j - \Delta V_O$  (KIA378R33)



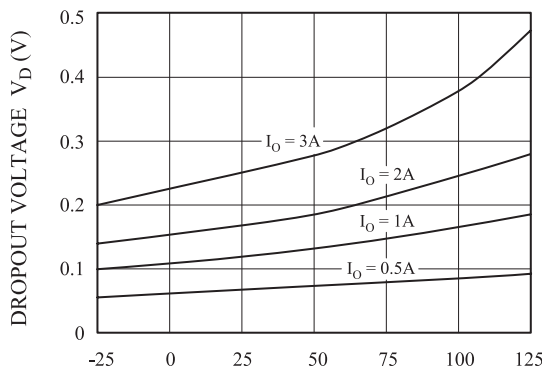
JUNCTION TEMPERATURE  $T_j$  (°C)

Fig.5-4  $T_j - \Delta V_O$  (KIA378R35)



JUNCTION TEMPERATURE  $T_j$  (°C)

Fig.6  $T_j - V_D$



JUNCTION TEMPERATURE  $T_j$  (°C)

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Fig.7  $T_j - I_q$

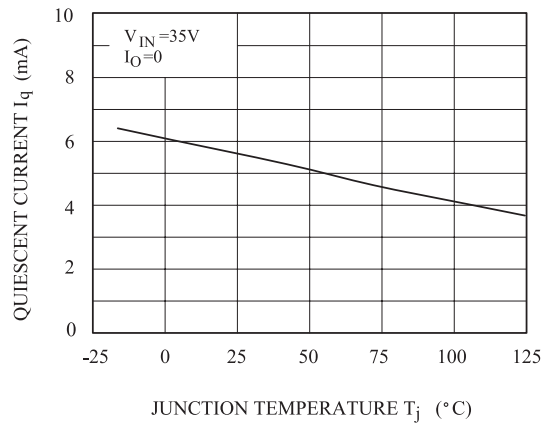


Fig.8-1  $f - RR$

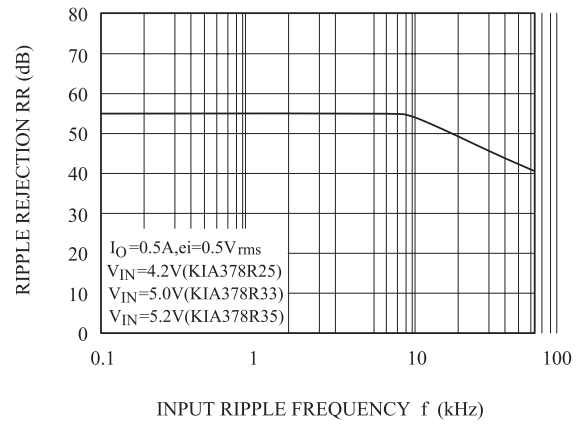


Fig.8-2  $I_O - RR$

