



## 1A Low Dropout Voltage Regulator With ON/OFF Control KIA78RXX

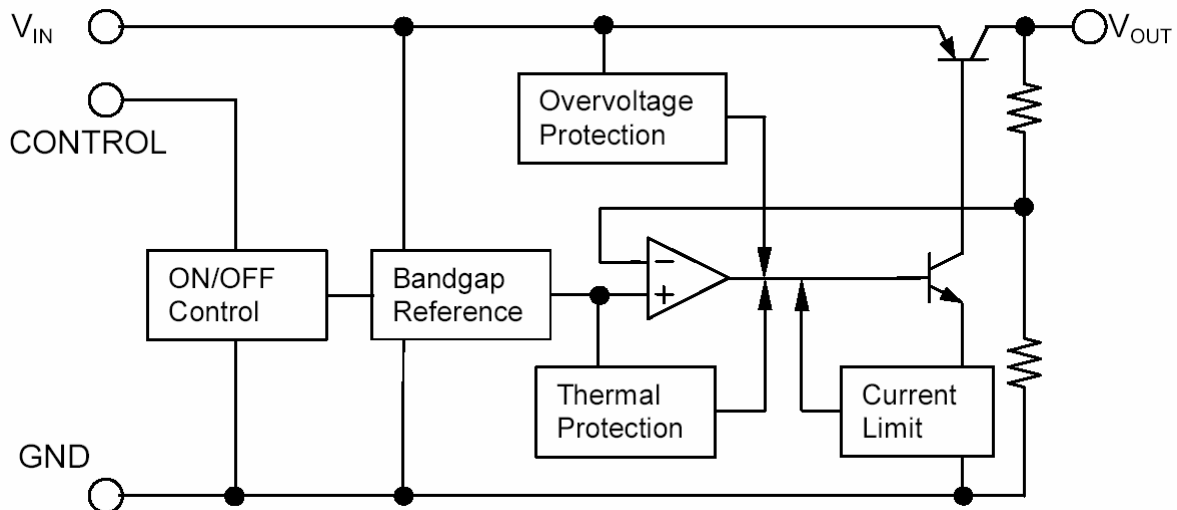
### DESCRIPTIONS:

The KIA78RXX is a low dropout voltage regulator suitable for various electronic equipment. The output current is up to 1.0A and dropout voltage is 0.5V typ. at  $I_o=1.0A$ . This regulator has various function such as peak current protection, thermal shut down, over voltage protection and output disable function. The KIA78RXX is available in TO-252-5L, TO-220F-4 power package.

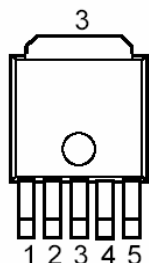
### FEATURES

- 1.0A output low dropout voltage regulator.
- Built in ON/OFF control terminal.
- Built in over current protection, over heat protection function.

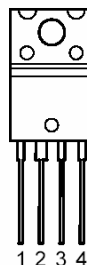
### BLOCK DIAGRAM



**PIN CONFIGURATION:**



- PIN FUNCTION
1. VIN
  2. GND
  3. VOUT
  4. NC
  5. ON/OFF CONTROL



- PIN FUNCTION
1.  $V_{IN}$
  2.  $V_{OUT}$
  3. GND
  4. ON/OFF CONTROL

**ORDERING INFORMATION:**

Package Marking	Output Voltage	Package Type
KIA78R25FXX	2.5V	TO-252-5L
KIA78R33FXX	3.3 V	TO-252-5L
KIA78R05FXX	5.0V	TO-252-5L
KIA78R06FXX	6.0V	TO-252-5L
KIA78R08FXX	8.0V	TO-252-5L
KIA78R09FXX	9.0 V	TO-252-5L
KIA78R10FXX	10.0V	TO-252-5L
KIA78R12FXX	12.0V	TO-252-5L
KIA78R15FXX	15.0V	TO-252-5L
KIA78R25API	2.5V	TO-220F-4
KIA78R33API	3.3 V	TO-220F-4
KIA78R05API	5.0V	TO-220F-4
KIA78R06API	6.0V	TO-220F-4
KIA78R08API	8.0V	TO-220F-4
KIA78R09API	9.0 V	TO-220F-4
KIA78R10API	10.0V	TO-220F-4
KIA78R12API	12.0V	TO-220F-4
KIA78R15API	15.0V	TO-220F-4

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

Characteristic	Value	Unit
Input Voltage	35	V
ON/OFF Control Volatge	35	V

**KIA78RXX**

Output Current		1	A
Power Dissipation 1 (no heatsink)		1.5	W
Power Dissipation 2 (with heatsink)	TO-252-5L	10	W
	TO-220F-4	15	
Junction Temperature		125	°C
Operating Temperature		-20~80	°C
Storage Temperature		-30~125	°C
Soldering Temperature (10sec)		260	°C

**ELECTRICAL CHARACTERISTICS**(unless otherwise specified:  $I_o=0.5A, T_a=25^{\circ}C$ )

Characteristics	Symbol	Test conditions	Min	Typ	Max	Unit
Output Voltage	$V_{out}$	Note1	-2% $V_o$		2% $V_o$	V
Load regulation	$R_{load}$	$I_o=5mA \sim 2A$		0.1	2.0	%
Line regulation	$R_{line}$	Note2		0.5	2.5	%
Temperature coefficient of output voltage	$T_c V_o$	$T_j=0 \sim 125^{\circ}C$		$\pm 0.02$	$\pm 0.05$	%/°C
Ripple rejection	R.R		45	55		dB
Drop out voltage	$V_D$	$I_o=1A, \text{Note3}$			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	$I_{C(OFF)}$	$V_c=0.4V_o$			-0.4	mA
Quiescent current	$I_Q$	Note1, $I_o=0$			10	mA

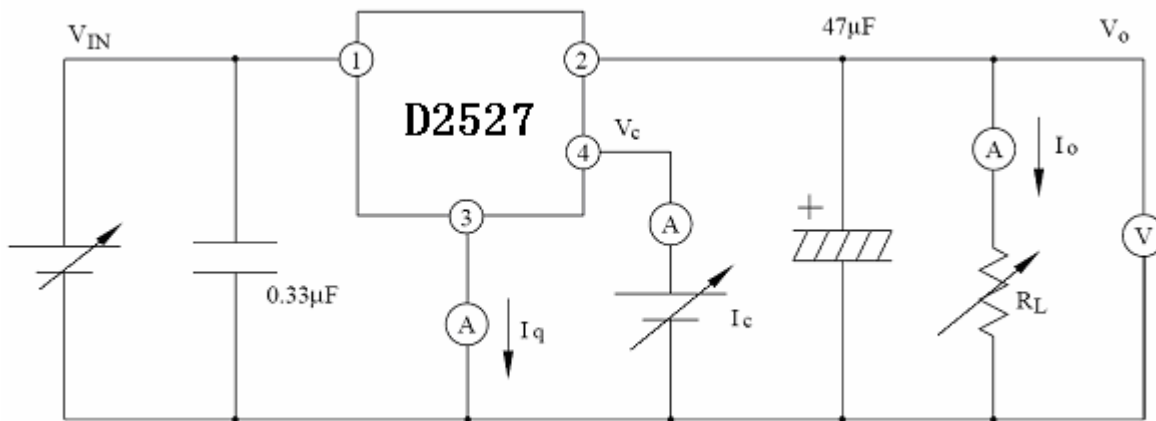
**Note:**

## KIA78RXX

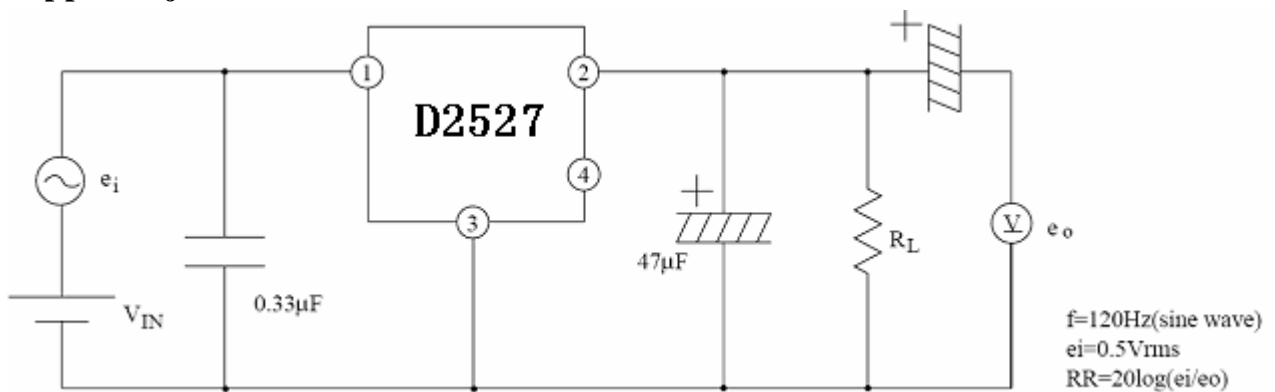
	Note1	Note2	Note3
KIA78R25	$V_{IN}=4.5V$	$V_{in}=3.5\sim 9.5V$	$V_{out}=0.95V_o$
KIA78R33	$V_{in}=5.0V$	$V_{in}=4.3\sim 10.3V$	
KIA78R05	$V_{in}=7.0V$	$V_{in}=6\sim 12V$	
KIA78R06	$V_{in}=8.0V$	$V_{in}=7\sim 15V$	
KIA78R08	$V_{in}=10V$	$V_{in}=9\sim 25V$	
KIA78R09	$V_{in}=15V$	$V_{in}=10\sim 25V$	
KIA78R10	$V_{in}=16V$	$V_{in}=11\sim 26V$	
KIA78R12	$V_{in}=18V$	$V_{in}=13\sim 29V$	
KIA78R15	$V_{in}=21V$	$V_{in}=16\sim 32V$	

### TEST CIRCUIT

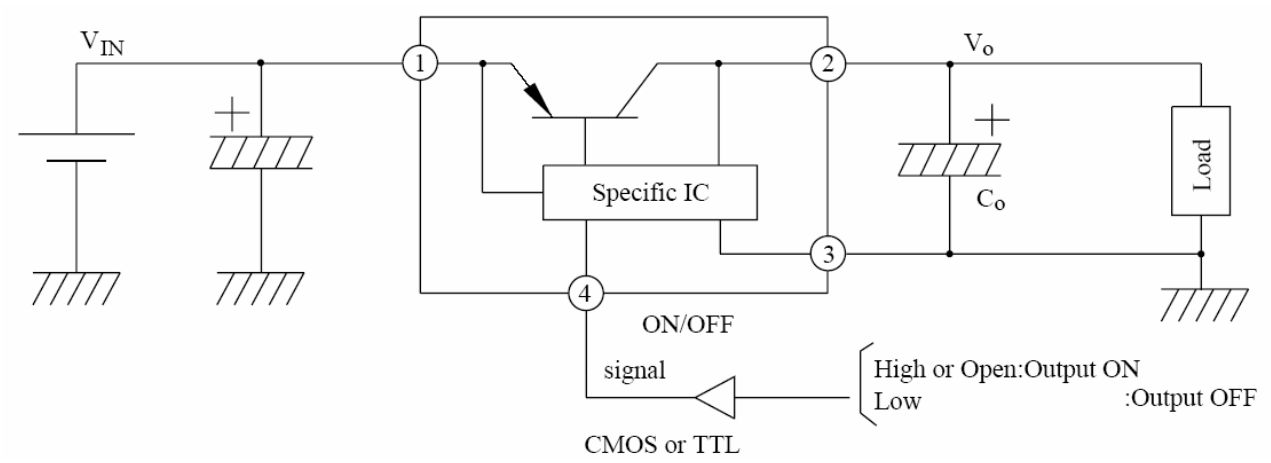
#### Standard Test Circuit



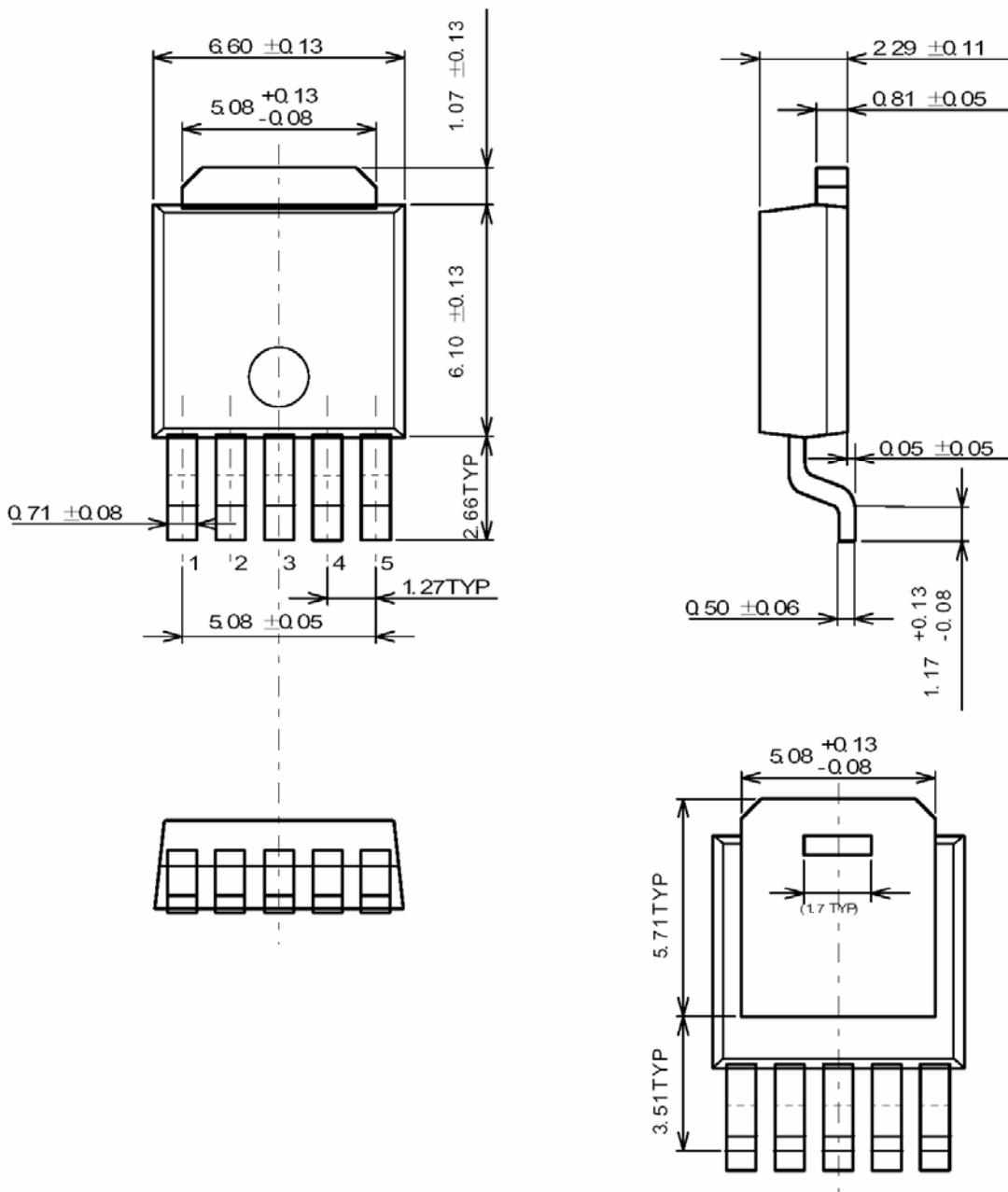
#### Ripple Rejection Test Circuit



APPLICATION CIRCUIT



TO-252-5L:



UNIT : mm

**OUTLINE DRAWING**

**TO220F-4L**

