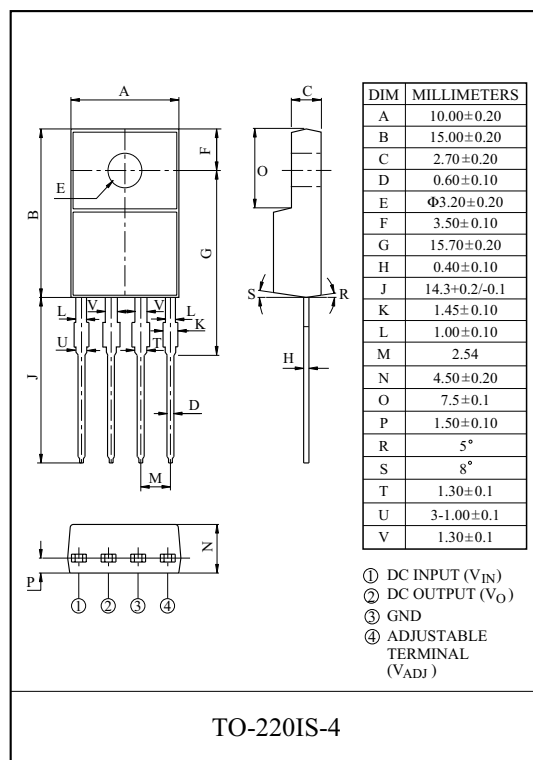


2A ADJUSTABLE LOW DROP VOLTAGE REGULATOR

The KIA278R00PI is a 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.

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

| CHARACTERISTIC | SYMBOL | RATING | UNIT | Remark |
|-------------------------------|-----------|-----------|------------------|---------------|
| Input Voltage | V_{IN} | 35 | V | - |
| Output Current | I_{OUT} | 2 | 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 | $^\circ\text{C}$ | - |

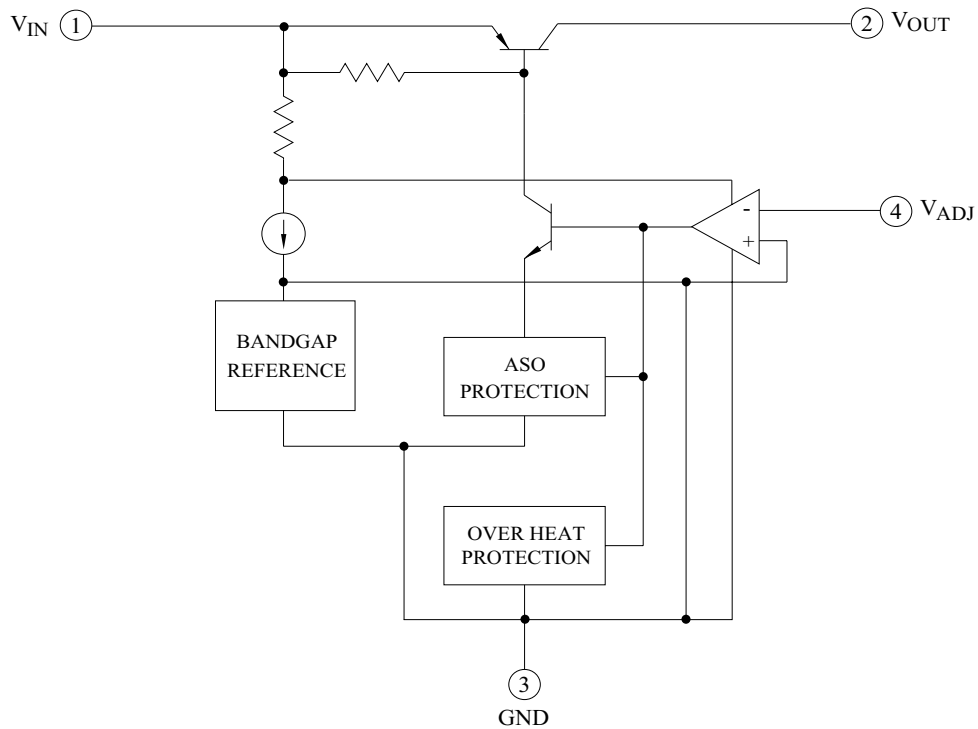
KIA278R00PI

ELECTRICAL CHARACTERISTICS

(Unless otherwise specified, $V_{IN}=15V$, $V_O=10V$, $I_O=1A$, $R_1=470\ \Omega$ (Note1 : $V_{IN}=0.95V_{out}$))

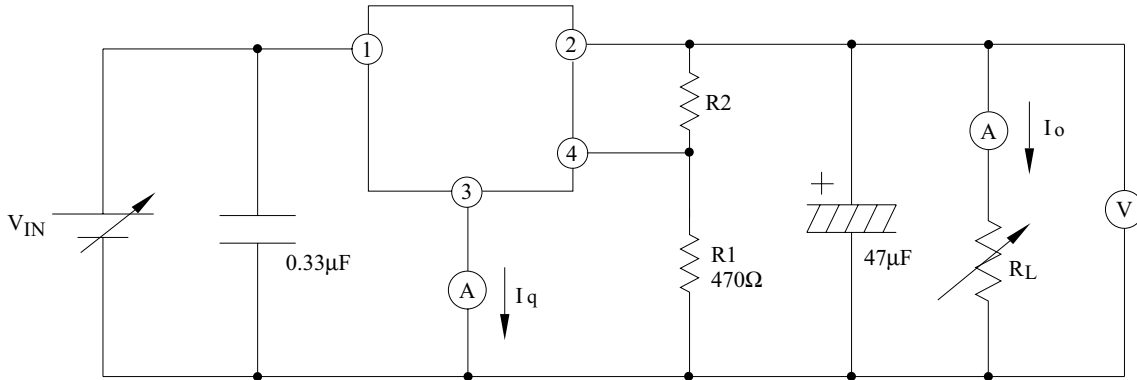
| CHARACTERISTIC | SYMBOL | CONDITIONS | MIN. | TYP. | MAX. | UNIT | |
|--|---------------|-------------------------------------|----------------|-----------|------|------|----|
| Input Voltage | V_{IN} | - | 4.5 | - | 35 | V | |
| Output Voltage | V_O | $R_2=76\ \Omega$ to $10.5k\ \Omega$ | 1.5 | - | 30 | V | |
| Load Regulation | Reg Load | $I_O=5mA \sim 2A$ | - | - | 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 | $T_C V_{ref}$ | $T_j=0 \sim 125\ ^\circ C$ | - | ± 1.0 | - | % | |
| DropOut Voltage | V_D | $I_O=2A$ (Note1) | - | - | 0.5 | V | |
| Quiescent Current | I_Q | $I_O=0A$ | - | - | 10 | mA | |

BLOCK DIAGRAM



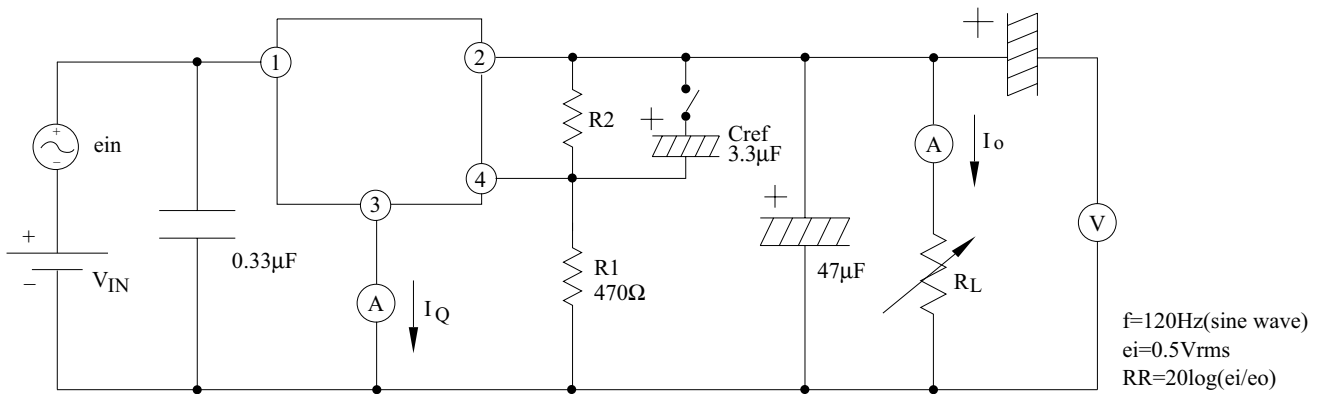
KIA278R00PI

Fig. 1 Standard Test Circuit



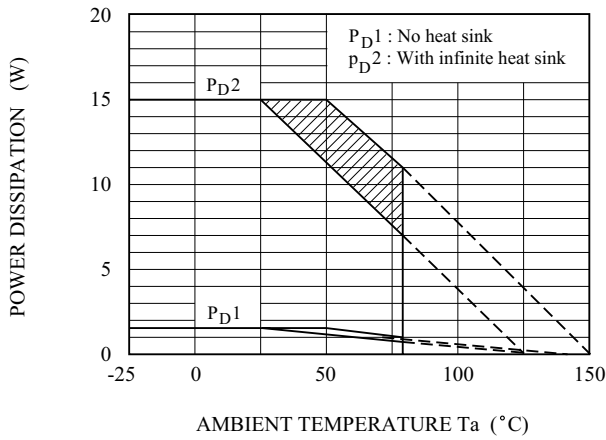
$$V_{OUT} = V_{ref} \times \left(1 + \frac{R2}{R1}\right) = 1.29 \times \left(1 + \frac{R2}{R1}\right)$$

Fig. 2 Ripple Rejection Circuit



KIA278R00PI

Fig. 3 $T_a - P_D$



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

Fig. 4 $I_O - V_O$

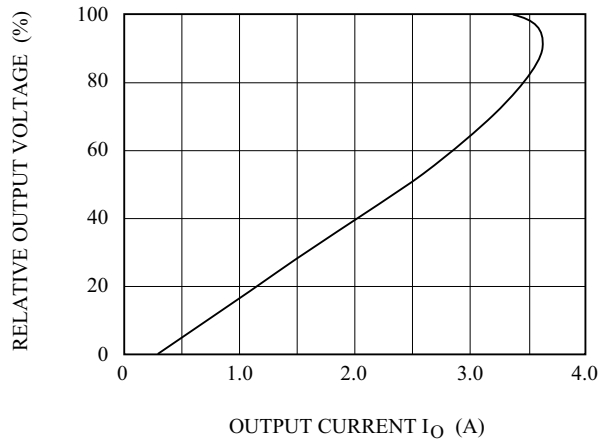


Fig. 5 $T_j - \Delta V_{ref}$

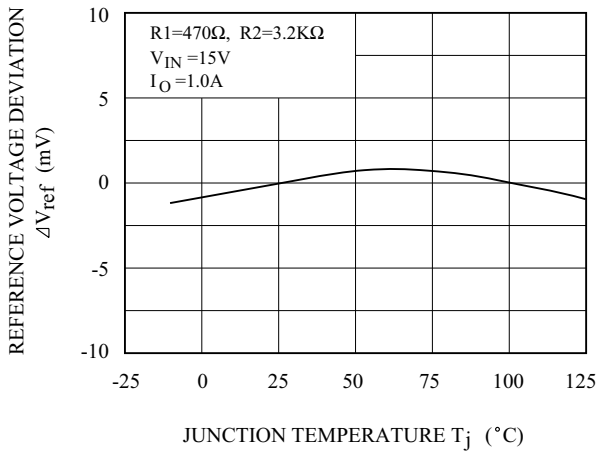


Fig. 6 $V_{IN} - V_O$

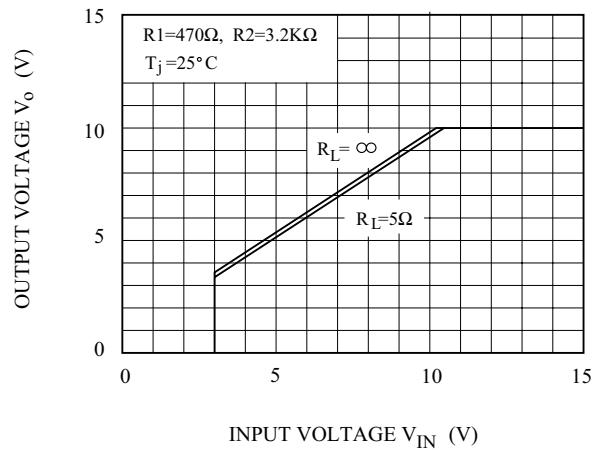


Fig. 7 $T_j - V_D$

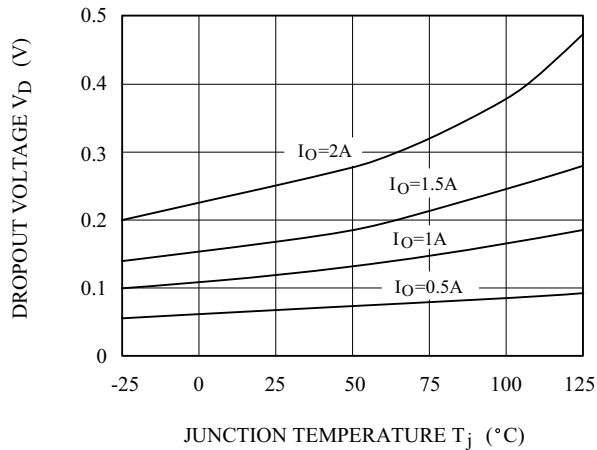
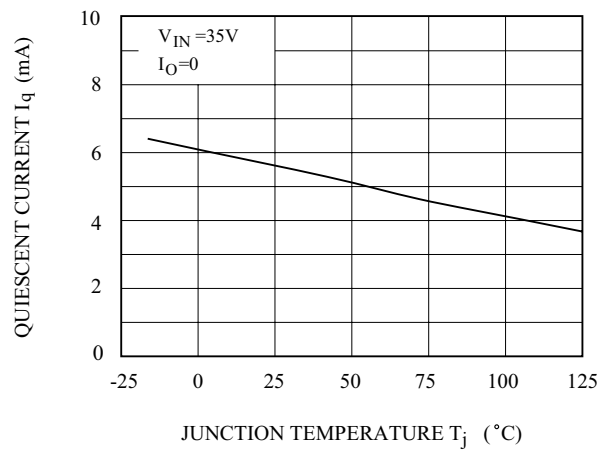


Fig. 8 $T_j - I_q$



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Fig. 9 f - RR

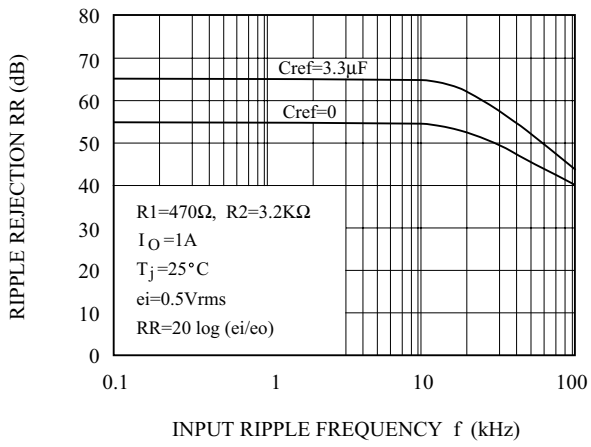


Fig. 10 IO - RR

