

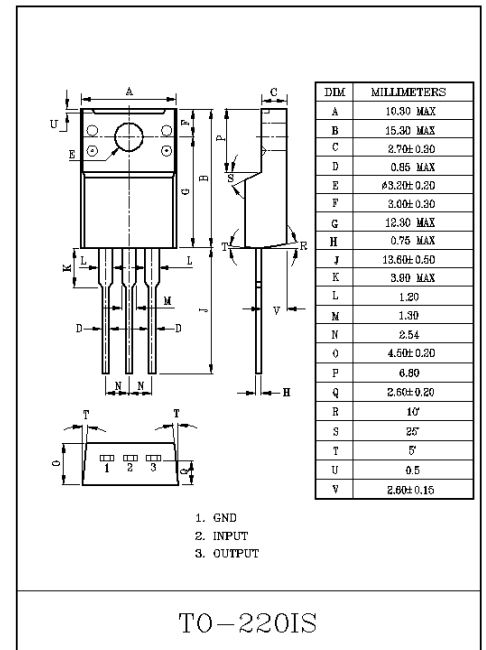
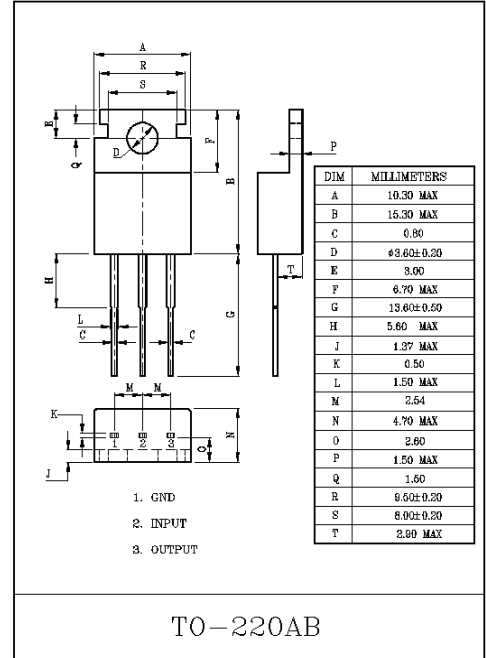
1A THREE TERMINAL NEGATIVE VOLTAGE REGULATORS -5V, -6V, -8V, -9V, -10V, -12V, -15V, -18V, -20V, -24V

FEATURES:

- Suitable for C-MOS, TTL, and the other digital IC power supply.
- Internal thermal overload protecting.
- Internal short circuit current limiting.
- Output current in excess of 1.0A.

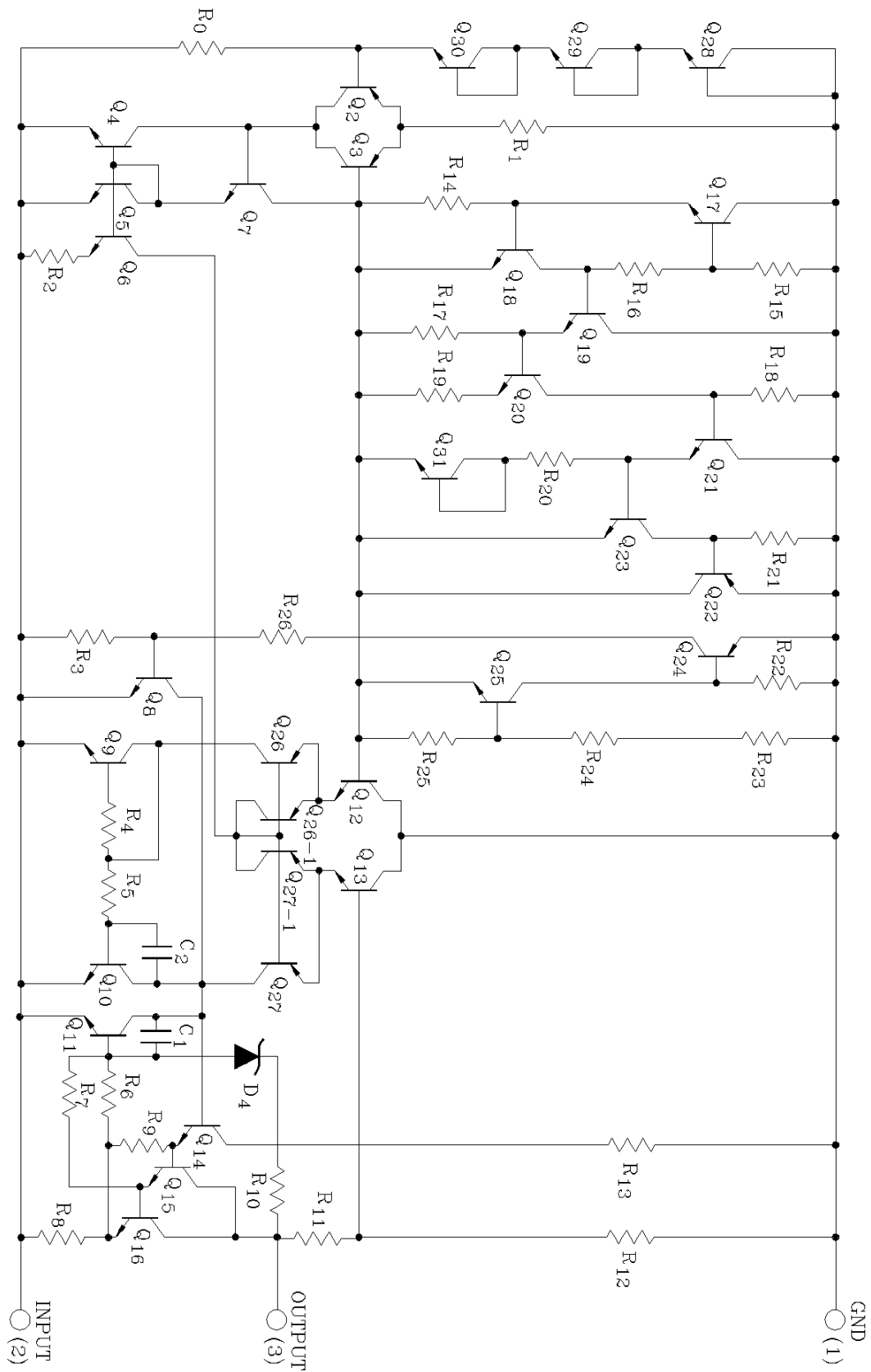
MAXIMUM RATINGS (Ta=25°C)

| CHARACTERISTIC | | SYMBOL | RATING | UNIT |
|--------------------------------|-----------------------------|------------------|---------|------|
| Input Voltage | KIA7905P/PI~ KIA7915P/PI | V _{IN} | -35 | V |
| | KIA7918P/PI~ KIA7924P/PI | | -40 | |
| Power Dissipation (Tc=25°C) | | P _D | 20.8 | W |
| Operating Junction Temperature | | T _j | -30~150 | °C |
| Operating Temperature | | T _{opr} | -30~75 | °C |
| Storage Temperature | | T _{stg} | -55~150 | °C |



KIA7905P/PI ~ KIA7924P/PI

EQUIVALENT CIRCUIT



KIA7905P/PI ~ KIA7924P/PI

ELECTRICAL CHARACTERISTICS

KIA7905P/PI

(Unless otherwise specified, $V_{IN} = -10V$, $I_{OUT} = 500mA$, $0^{\circ}C \leq T_j \leq 125^{\circ}C$, $C_{IN} = 2.2\mu F$, $C_{OUT} = 1\mu F$)

| CHARACTERISTIC | SYMBOL | TEST CIRCUIT | TEST CONDITION | MIN. | TYP. | MAX. | UNIT | |
|---|-----------------|--------------|---|---------------------------------|------|-------|-----------------|----|
| Output Voltage | V_{OUT} | 1 | $T_j = 25^{\circ}C$ | -5.2 | -5.0 | -4.8 | V | |
| Input Regulation | Reg line | 1 | $T_j = 25^{\circ}C$ | $-12V \leq V_{IN} \leq -8V$ | - | 5 | 50 | mV |
| | | | | $-25V \leq V_{IN} \leq -7V$ | - | 10 | 100 | |
| Load Regulation | Reg load | 1 | $T_j = 25^{\circ}C$ | $5mA \leq I_{OUT} \leq 1.5A$ | - | 10 | 100 | mV |
| | | | | $250mA \leq I_{OUT} \leq 750mA$ | - | 3 | 50 | |
| Output Voltage | V_{OUT} | 1 | $-20V \leq V_{IN} \leq -7V$ $5mA \leq I_{OUT} \leq 1.0A$ | -5.25 | -5.0 | -4.75 | V | |
| Quiescent Current | I_B | 1 | $T_j = 25^{\circ}C$ | - | 3 | 6 | mA | |
| Quiescent Current Change | ΔI_{BI} | 1 | $-25V \leq V_{IN} \leq -8V$ $5mA \leq I_{OUT} \leq 1.0A$ | - | 0.1 | 1.3 | mA | |
| | ΔI_{BO} | | | - | 0.05 | 0.5 | | |
| Output Noise Voltage | V_{NO} | 2 | $T_a = 25^{\circ}C$, $10Hz \leq f \leq 100kHz$ | - | 100 | - | μV_{rms} | |
| Ripple Rejection Ratio | RR | 3 | $f = 120Hz$, $I_{OUT} = 20mA$, | 54 | 60 | - | dB | |
| Short Circuit Current Limit | I_{SC} | 1 | $T_j = 25^{\circ}C$ | - | 1.9 | - | A | |
| Average Temperature Coefficient of Output Voltage | T_{CVO} | 1 | $I_{OUT} = 5.0mA$ | - | -0.4 | - | mV/ $^{\circ}C$ | |
| Dropout Voltage | V_D | 1 | $T_j = 25^{\circ}C$, $I_{OUT} = 1A$ | - | 2.0 | - | V | |

KIA7905P/PI ~ KIA7924P/PI

ELECTRICAL CHARACTERISTICS

KIA7906P/PI

(Unless otherwise specified, $V_{IN} = -11V$, $I_{OUT} = 500mA$, $0^{\circ}C \leq T_j \leq 125^{\circ}C$, $C_{IN} = 2.2\mu F$, $C_{OUT} = 1\mu F$)

| CHARACTERISTIC | SYMBOL | TEST CIRCUIT | TEST CONDITION | MIN. | TYP. | MAX. | UNIT | |
|---|-----------|--------------|---|---------------------------------|------|-------|-----------------|------------------------------|
| Output Voltage | V_{OUT} | 1 | $T_j = 25^{\circ}C$ | -6.25 | -6.0 | -5.75 | V | |
| Input Regulation | Reg line | 1 | $T_j = 25^{\circ}C$ | $-13V \leq V_{IN} \leq -9V$ | - | 5 | 60 | mV |
| | | | | $-25V \geq V_{IN} \geq -8V$ | - | 10 | 120 | |
| Load Regulation | Reg load | 1 | $T_j = 25^{\circ}C$ | $5mA \leq I_{OUT} \leq 1.5A$ | - | 10 | 120 | mV |
| | | | | $250mA \leq I_{OUT} \leq 750mA$ | - | 3 | 60 | |
| Output Voltage | V_{OUT} | 1 | $-21V \leq V_{IN} \leq -9V$ $5mA \leq I_{OUT} \leq 1.0A$ | -6.3 | -6.0 | -5.7 | V | |
| Quiescent Current | I_B | 1 | $T_j = 25^{\circ}C$ | - | 3 | 6 | mA | |
| Quiescent Current Change | Line | 1 | $-25V \leq V_{IN} \leq -9V$ | - | - | 1.3 | mA | |
| | Load | | | | | | | $5mA \leq I_{OUT} \leq 1.0A$ |
| Output Noise Voltage | V_{NO} | 2 | $T_a = 25^{\circ}C$, $10Hz \leq f \leq 100kHz$ | - | 130 | - | μV_{rms} | |
| Ripple Rejection Ratio | RR | 3 | $f = 120Hz$, $I_{OUT} = 20mA$, | 54 | 60 | - | dB | |
| Short Circuit Current Limit | I_{SC} | 1 | $T_j = 25^{\circ}C$ | - | 1.9 | - | A | |
| Average Temperature Coefficient of Output Voltage | T_{CVO} | 1 | $I_{OUT} = 5mA$ | - | -0.5 | - | mV/ $^{\circ}C$ | |
| Dropout Voltage | V_D | 1 | $T_j = 25^{\circ}C$, $I_{OUT} = 1A$ | - | 2.0 | - | V | |

KIA7905P/PI ~ KIA7924P/PI

ELECTRICAL CHARACTERISTICS

KIA7908P/PI

(Unless otherwise specified, $V_{IN} = -14V$, $I_{OUT} = 500mA$, $0^{\circ}C \leq T_j \leq 125^{\circ}C$, $C_{IN} = 2.2\mu F$, $C_{OUT} = 1\mu F$)

| CHARACTERISTIC | SYMBOL | TEST CIRCUIT | TEST CONDITION | MIN. | TYP. | MAX. | UNIT | |
|---|-----------|--------------|--|---------------------------------|------|------|-----------------|-----------------|
| Output Voltage | V_{OUT} | 1 | $T_j = 25^{\circ}C$ | -8.3 | -8.0 | -7.7 | V | |
| Input Regulation | Reg line | 1 | $T_j = 25^{\circ}C$ | $-17V \leq V_{IN} \leq -11V$ | - | 5 | 80 | mV |
| | | | | $-25V \leq V_{IN} \leq -10.5V$ | - | 10 | 100 | |
| Load Regulation | Reg load | 1 | $T_j = 25^{\circ}C$ | $5mA \leq I_{OUT} \leq 1.5A$ | - | 12 | 160 | mV |
| | | | | $250mA \leq I_{OUT} \leq 750mA$ | - | 4 | 80 | |
| Output Voltage | V_{OUT} | 1 | $-23V \leq V_{IN} \leq -11.5V$ $5mA \leq I_{OUT} \leq 1.0A$ | -8.4 | -8.0 | -7.6 | V | |
| Quiescent Current | I_B | 1 | $T_j = 25^{\circ}C$ | - | 3 | 6 | mA | |
| Quiescent Current Change | Line | 1 | $-25V \leq V_{IN} \leq -11.5V$ $5mA \leq I_{OUT} \leq 1.0A$ | - | 0.1 | 1.0 | mA | |
| | Load | | | | | | | ΔI_{BO} |
| Output Noise Voltage | V_{NO} | 2 | $T_a = 25^{\circ}C$, $10Hz \leq f \leq 100kHz$ | - | 175 | - | μV_{rms} | |
| Ripple Rejection Ratio | RR | 3 | $f = 120Hz$, $I_{OUT} = 20mA$, | 54 | 60 | - | dB | |
| Short Circuit Current Limit | I_{SC} | 1 | $T_j = 25^{\circ}C$ | - | 1.9 | - | A | |
| Average Temperature Coefficient of Output Voltage | T_{CVO} | 1 | $I_{OUT} = 5mA$ | - | -0.6 | - | mV/ $^{\circ}C$ | |
| Dropout Voltage | V_D | 1 | $T_j = 25^{\circ}C$, $I_{OUT} = 1A$ | - | 2.0 | - | V | |

KIA7905P/PI ~ KIA7924P/PI

ELECTRICAL CHARACTERISTICS

KIA7909P/PI

(Unless otherwise specified, $V_{IN} = -15V$, $I_{OUT} = 500mA$, $0^{\circ}C \leq T_j \leq 125^{\circ}C$, $C_{IN} = 2.2\mu F$, $C_{OUT} = 1\mu F$)

| CHARACTERISTIC | SYMBOL | TEST CIRCUIT | TEST CONDITION | MIN. | TYP. | MAX. | UNIT | |
|---|-----------|--------------|--|---------------------------------|------|------|-----------------|------------------------------|
| Output Voltage | V_{OUT} | 1 | $T_j = 25^{\circ}C$ | -9.3 | -9.0 | -8.7 | V | |
| Input Regulation | Reg line | 1 | $T_j = 25^{\circ}C$ | $-19V \leq V_{IN} \leq -13V$ | - | 5 | 90 | mV |
| | | | | $-26V \leq V_{IN} \leq -11.5V$ | - | 10 | 100 | |
| Load Regulation | Reg load | 1 | $T_j = 25^{\circ}C$ | $5mA \leq I_{OUT} \leq 1.5A$ | - | 10 | 150 | mV |
| | | | | $250mA \leq I_{OUT} \leq 750mA$ | - | 5 | 120 | |
| Output Voltage | V_{OUT} | 1 | $-24V \leq V_{IN} \leq -11.5V$ $5mA \leq I_{OUT} \leq 1.0A$ | -9.4 | -9.0 | -8.6 | V | |
| Quiescent Current | I_B | 1 | $T_j = 25^{\circ}C$ | - | 3 | 6 | mA | |
| Quiescent Current Change | Line | 1 | $-26.5V \leq V_{IN} \leq -13V$ | - | 0.1 | 1.0 | mA | |
| | Load | | | | | | | $5mA \leq I_{OUT} \leq 1.0A$ |
| Output Noise Voltage | V_{NO} | 2 | $T_a = 25^{\circ}C$, $10Hz \leq f \leq 100kHz$ | - | 180 | - | μV_{rms} | |
| Ripple Rejection Ratio | RR | 3 | $f = 120Hz$, $I_{OUT} = 20mA$, | 54 | 60 | - | dB | |
| Short Circuit Current Limit | I_{SC} | 1 | $T_j = 25^{\circ}C$ | - | 1.9 | - | A | |
| Average Temperature Coefficient of Output Voltage | T_{CVO} | 1 | $I_{OUT} = 5mA$ | - | -0.7 | - | mV/ $^{\circ}C$ | |
| Dropout Voltage | V_D | 1 | $T_j = 25^{\circ}C$, $I_{OUT} = 1A$ | - | 2.0 | - | V | |

KIA7905P/PI ~ KIA7924P/PI

ELECTRICAL CHARACTERISTICS

KIA7910IP/PI

(Unless otherwise specified, $V_{IN} = -16V$, $I_{OUT} = 500mA$, $0^{\circ}C \leq T_j \leq 125^{\circ}C$, $C_{IN} = 2.2\mu F$, $C_{OUT} = 1\mu F$)

| CHARACTERISTIC | SYMBOL | TEST CIRCUIT | TEST CONDITION | MIN. | TYP. | MAX. | UNIT | |
|---|-----------|--------------|--|---------------------------------|------|------|-----------------|-----|
| Output Voltage | V_{OUT} | 1 | $T_j = 25^{\circ}C$ | -10.4 | -10 | -9.6 | V | |
| Input Regulation | Reg line | 1 | $T_j = 25^{\circ}C$ | $-20V \leq V_{IN} \leq -14V$ | - | 5 | 100 | mV |
| | | | | $-27V \leq V_{IN} \leq -12.5V$ | - | 10 | 110 | |
| Load Regulation | Reg load | 1 | $T_j = 25^{\circ}C$ | $5mA \leq I_{OUT} \leq 1.5A$ | - | 10 | 180 | mV |
| | | | | $250mA \leq I_{OUT} \leq 750mA$ | - | 6 | 120 | |
| Output Voltage | V_{OUT} | 1 | $-25V \leq V_{IN} \leq -12.5V$ $5mA \leq I_{OUT} \leq 1.0A$ | -10.5 | -10 | -9.5 | V | |
| Quiescent Current | I_B | 1 | $T_j = 25^{\circ}C$ | - | 3 | 6 | mA | |
| Quiescent Current Change | Line | 1 | $-27.5V \leq V_{IN} \leq -14V$ | - | 0.1 | 1.0 | mA | |
| | Load | | | $5mA \leq I_{OUT} \leq 1.0A$ | - | 0.05 | | 0.5 |
| Output Noise Voltage | V_{NO} | 2 | $T_a = 25^{\circ}C$, $10Hz \leq f \leq 100kHz$ | - | 190 | - | μV_{rms} | |
| Ripple Rejection Ratio | RR | 3 | $f = 120Hz$, $I_{OUT} = 20mA$ | 54 | 60 | - | dB | |
| Short Circuit Current Limit | I_{SC} | 1 | $T_j = 25^{\circ}C$ | - | 1.9 | - | A | |
| Average Temperature Coefficient of Output Voltage | T_{CVO} | 1 | $I_{OUT} = 5mA$ | - | -0.7 | - | mV/ $^{\circ}C$ | |
| Dropout Voltage | V_D | 1 | $T_j = 25^{\circ}C$, $I_{OUT} = 1A$ | - | 2.0 | - | V | |

KIA7905P/PI ~ KIA7924P/PI

ELECTRICAL CHARACTERISTICS

KIA7912P/PI

(Unless otherwise specified, $V_{IN}=-18V$, $I_{OUT}=500mA$, $0^{\circ}C \leq T_j \leq 125^{\circ}C$, $C_{IN}=2.2\mu F$, $C_{OUT}=1\mu F$)

| CHARACTERISTIC | SYMBOL | TEST CIRCUIT | TEST CONDITION | MIN. | TYP. | MAX. | UNIT | |
|---|-----------|--------------|--|---------------------------------|------|-------|-----------------|-----|
| Output Voltage | V_{OUT} | 1 | $T_j=25^{\circ}C$ | -12.5 | -12 | -11.5 | V | |
| Input Regulation | Reg line | 1 | $T_j=25^{\circ}C$ | $-22V \leq V_{IN} \leq -16V$ | - | 6 | 120 | mV |
| | | | | $-30V \leq V_{IN} \leq -14.5V$ | - | 12 | 240 | |
| Load Regulation | Reg load | 1 | $T_j=25^{\circ}C$ | $5mA \leq I_{OUT} \leq 1.5A$ | - | 12 | 240 | mV |
| | | | | $250mA \leq I_{OUT} \leq 750mA$ | - | 4 | 120 | |
| Output Voltage | V_{OUT} | 1 | $-27V \leq V_{IN} \leq -15.5V$ $5mA \leq I_{OUT} \leq 1.0A$ | -12.6 | -12 | -11.4 | V | |
| Quiescent Current | I_B | 1 | $T_j=25^{\circ}C$ | - | 3 | 6 | mA | |
| Quiescent Current Change | Line | 1 | $-30V \leq V_{IN} \leq -15V$ | - | 0.1 | 1.0 | mA | |
| | Load | | | $5mA \leq I_{OUT} \leq 1.0A$ | - | 0.05 | | 0.5 |
| Output Noise Voltage | V_{NO} | 2 | $T_a=25^{\circ}C$, $10Hz \leq f \leq 100kHz$ | - | 200 | - | μV_{rms} | |
| Ripple Rejection Ratio | RR | 3 | $f=120Hz$, $I_{OUT}=20mA$, | 54 | 60 | - | dB | |
| Short Circuit Current Limit | I_{SC} | 1 | $T_j=25^{\circ}C$ | - | 1.9 | - | A | |
| Average Temperature Coefficient of Output Voltage | T_{CVO} | 1 | $I_{OUT}=5mA$ | - | -0.8 | - | mV/ $^{\circ}C$ | |
| Dropout Voltage | V_D | 1 | $T_j=25^{\circ}C$, $I_{OUT}=1A$ | - | 2.0 | - | V | |

KIA7905P/PI ~ KIA7924P/PI

ELECTRICAL CHARACTERISTICS

KIA7915P/PI

(Unless otherwise specified, $V_{IN} = -23V$, $I_{OUT} = 500mA$, $0^{\circ}C \leq T_j \leq 125^{\circ}C$, $C_{IN} = 2.2\mu F$, $C_{OUT} = 1\mu F$)

| CHARACTERISTIC | SYMBOL | TEST CIRCUIT | TEST CONDITION | MIN. | TYP. | MAX. | UNIT | |
|---|-----------|--------------|--|---------------------------------|------|--------|-----------------|-----|
| Output Voltage | V_{OUT} | 1 | $T_j = 25^{\circ}C$ | -15.6 | -15 | -14.4 | V | |
| Input Regulation | Reg line | 1 | $T_j = 25^{\circ}C$ | $-26V \leq V_{IN} \leq -20V$ | - | 6 | 150 | mV |
| | | | | $-30V \leq V_{IN} \leq -17.5V$ | - | 12 | 300 | |
| Load Regulation | Reg load | 1 | $T_j = 25^{\circ}C$ | $5mA \leq I_{OUT} \leq 1.5A$ | - | 12 | 300 | mV |
| | | | | $250mA \leq I_{OUT} \leq 750mA$ | - | 4 | 150 | |
| Output Voltage | V_{OUT} | 1 | $-30V \leq V_{IN} \leq -18V$ $5mA \leq I_{OUT} \leq 1.0A$ | -15.75 | -15 | -14.25 | V | |
| Quiescent Current | I_B | 1 | $T_j = 25^{\circ}C$ | - | 3 | 6 | mA | |
| Quiescent Current Change | Line | 1 | $-30V \leq V_{IN} \leq -17.5V$ | - | 0.1 | 1.0 | mA | |
| | Load | | | $5mA \leq I_{OUT} \leq 1.0A$ | - | 0.05 | | 0.5 |
| Output Noise Voltage | V_{NO} | 2 | $T_a = 25^{\circ}C$, $10Hz \leq f \leq 100kHz$ | - | 250 | - | μV_{rms} | |
| Ripple Rejection Ratio | RR | 3 | $f = 120Hz$, $I_{OUT} = 20mA$, | 54 | 60 | - | dB | |
| Short Circuit Current Limit | I_{SC} | 1 | $T_j = 25^{\circ}C$ | - | 1.9 | - | A | |
| Average Temperature Coefficient of Output Voltage | T_{CVO} | 1 | $I_{OUT} = 5mA$ | - | -0.9 | - | mV/ $^{\circ}C$ | |
| Dropout Voltage | V_D | 1 | $T_j = 25^{\circ}C$, $I_{OUT} = 1A$ | - | 2.0 | - | V | |

KIA7905P/PI ~ KIA7924P/PI

ELECTRICAL CHARACTERISTICS

KIA7918P/PI

(Unless otherwise specified, $V_{IN}=-27V$, $I_{OUT}=500mA$, $0^{\circ}C \leq T_j \leq 125^{\circ}C$, $C_{IN}=2.2\mu F$, $C_{OUT}=1\mu F$)

| CHARACTERISTIC | SYMBOL | TEST CIRCUIT | TEST CONDITION | MIN. | TYP. | MAX. | UNIT | |
|---|-----------|--------------|--|---------------------------------|------|--------|-----------------|-----|
| Output Voltage | V_{OUT} | 1 | $T_j=25^{\circ}C$ | -18.7 | -18 | -17.3 | V | |
| Input Regulation | Reg line | 1 | $T_j=25^{\circ}C$ | $-30V \leq V_{IN} \leq -24V$ | - | 8 | 180 | mV |
| | | | | $-33V \leq V_{IN} \leq -21V$ | - | 15 | 360 | |
| Load Regulation | Reg load | 1 | $T_j=25^{\circ}C$ | $5mA \leq I_{OUT} \leq 1.5A$ | - | 15 | 360 | mV |
| | | | | $250mA \leq I_{OUT} \leq 750mA$ | - | 5 | 180 | |
| Output Voltage | V_{OUT} | 1 | $-33V \leq V_{IN} \leq -22.5V$ $5mA \leq I_{OUT} \leq 1.0A$ | -18.85 | -18 | -17.15 | V | |
| Quiescent Current | I_B | 1 | $T_j=25^{\circ}C$ | - | 3 | 6 | mA | |
| Quiescent Current Change | Line | 1 | $-33V \leq V_{IN} \leq -22V$ $5mA \leq I_{OUT} \leq 1.0A$ | - | - | 1.0 | mA | |
| | Load | | | | | | | 0.5 |
| Output Noise Voltage | V_{NO} | 2 | $T_a=25^{\circ}C$, $10Hz \leq f \leq 100kHz$ | - | 300 | - | μV_{rms} | |
| Ripple Rejection Ratio | RR | 3 | $f=120Hz$, $I_{OUT}=20mA$, | 54 | 60 | - | dB | |
| Short Circuit Current Limit | I_{SC} | 1 | $T_j=25^{\circ}C$ | - | 1.9 | - | A | |
| Average Temperature Coefficient of Output Voltage | T_{CVO} | 1 | $I_{OUT}=5mA$ | - | -1.0 | - | mV/ $^{\circ}C$ | |
| Dropout Voltage | V_D | 1 | $T_j=25^{\circ}C$, $I_{OUT}=1A$ | - | 2.0 | - | V | |

KIA7905P/PI ~ KIA7924P/PI

ELECTRICAL CHARACTERISTICS

KIA7920P/PI

(Unless otherwise specified, $V_{IN} = -30V$, $I_{OUT} = 500mA$, $0^{\circ}C \leq T_j \leq 125^{\circ}C$, $C_{IN} = 2.2\mu F$, $C_{OUT} = 1\mu F$)

| CHARACTERISTIC | SYMBOL | TEST CIRCUIT | TEST CONDITION | MIN. | TYP. | MAX. | UNIT | |
|---|-----------|-----------------|--|--|------|-------|-----------------|----|
| Output Voltage | V_{OUT} | 1 | $T_j = 25^{\circ}C$ | -20.8 | -20 | -19.2 | V | |
| Input Regulation | Reg line | 1 | $T_j = 25^{\circ}C$ | $-32V \leq V_{IN} \leq -26V$ | - | 10 | 180 | mV |
| | | | | $-35V \leq V_{IN} \leq -24V$ | - | 18 | 360 | |
| Load Regulation | Reg load | 1 | $T_j = 25^{\circ}C$ | $5mA \leq I_{OUT} \leq 1.5A$ | - | 18 | 360 | mV |
| | | | | $250mA \leq I_{OUT} \leq 750mA$ | - | 10 | 180 | |
| Output Voltage | V_{OUT} | 1 | $-35V \leq V_{IN} \leq -24V$ $5mA \leq I_{OUT} \leq 1.0A$ | -21.0 | -20 | -19.0 | V | |
| Quiescent Current | I_B | 1 | $T_j = 25^{\circ}C$ | - | 3 | 6 | mA | |
| Quiescent Current Change | Line | ΔI_{BI} | 1 | $-36.5V \leq V_{IN} \leq -25V$ $5mA \leq I_{OUT} \leq 1.0A$ | - | - | 1.0 | mA |
| | Load | ΔI_{BO} | | | - | - | 0.5 | |
| Output Noise Voltage | V_{NO} | 2 | $T_a = 25^{\circ}C$, $10Hz \leq f \leq 100kHz$ | - | 350 | - | μV_{rms} | |
| Ripple Rejection Ratio | RR | 3 | $f = 120Hz$, $I_{OUT} = 20mA$, | 54 | 60 | - | dB | |
| Short Circuit Current Limit | I_{SC} | 1 | $T_j = 25^{\circ}C$ | - | 1.9 | - | A | |
| Average Temperature Coefficient of Output Voltage | T_{CVO} | 1 | $I_{OUT} = 5mA$ | - | -1.0 | - | mV/ $^{\circ}C$ | |
| Dropout Voltage | V_D | 1 | $T_j = 25^{\circ}C$, $I_{OUT} = 1A$ | - | 2.0 | - | V | |

KIA7905P/PI ~ KIA7924P/PI

ELECTRICAL CHARACTERISTICS

KIA7924P/PI

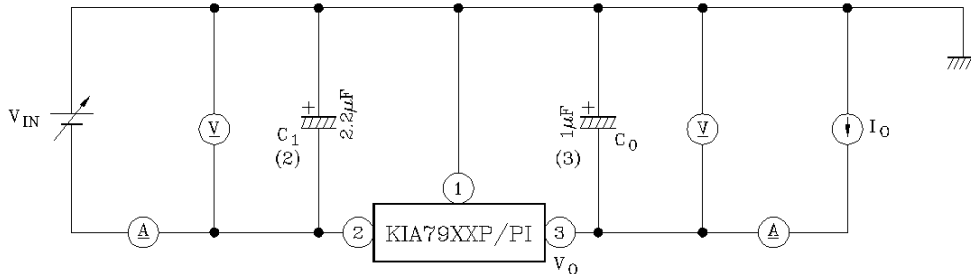
(Unless otherwise specified, $V_{IN} = -33V$, $I_{OUT} = 500mA$, $0^{\circ}C \leq T_j \leq 125^{\circ}C$, $C_{IN} = 0.33\mu F$, $C_{OUT} = 0.1\mu F$)

| CHARACTERISTIC | SYMBOL | TEST CIRCUIT | TEST CONDITION | MIN. | TYP. | MAX. | UNIT | |
|---|-----------|--------------|--|---------------------------------|------|-------|-----------------|-----|
| Output Voltage | V_{OUT} | 1 | $T_j = 25^{\circ}C$ | -25 | -24 | -23 | V | |
| Input Regulation | Reg line | 1 | $T_j = 25^{\circ}C$ | $-36V \leq V_{IN} \leq -30V$ | - | 8 | 240 | mV |
| | | | | $-38V \leq V_{IN} \leq -27V$ | - | 15 | 480 | |
| Load Regulation | Reg load | 1 | $T_j = 25^{\circ}C$ | $5mA \leq I_{OUT} \leq 1.5A$ | - | 15 | 480 | mV |
| | | | | $250mA \leq I_{OUT} \leq 750mA$ | - | 5 | 240 | |
| Output Voltage | V_{OUT} | 1 | $-38V \leq V_{IN} \leq -27V$ $5mA \leq I_{OUT} \leq 1.0A$ | -25.2 | -24 | -22.5 | V | |
| Quiescent Current | I_B | 1 | $T_j = 25^{\circ}C$ | - | 3 | 6 | mA | |
| Quiescent Current Change | Line | 1 | $-38V \leq V_{IN} \leq -27V$ $5mA \leq I_{OUT} \leq 1.0A$ | - | - | 1.0 | mA | |
| | Load | | | | | | | 0.5 |
| Output Noise Voltage | V_{NO} | 2 | $T_a = 25^{\circ}C$, $10Hz \leq f \leq 100kHz$ | - | 400 | - | μV_{rms} | |
| Ripple Rejection Ratio | RR | 3 | $f = 120Hz$, $I_{OUT} = 20mA$, | 54 | 60 | - | dB | |
| Short Circuit Current Limit | I_{SC} | 1 | $T_j = 25^{\circ}C$ | - | 1.9 | - | A | |
| Average Temperature Coefficient of Output Voltage | T_{CVO} | 1 | $I_{OUT} = 5mA$ | - | -1.0 | - | mV/ $^{\circ}C$ | |
| Dropout Voltage | V_D | 1 | $T_a = 25^{\circ}C$, $I_{OUT} = 1A$ | - | 2.0 | - | V | |

KIA7905P/PI ~ KIA7924P/PI

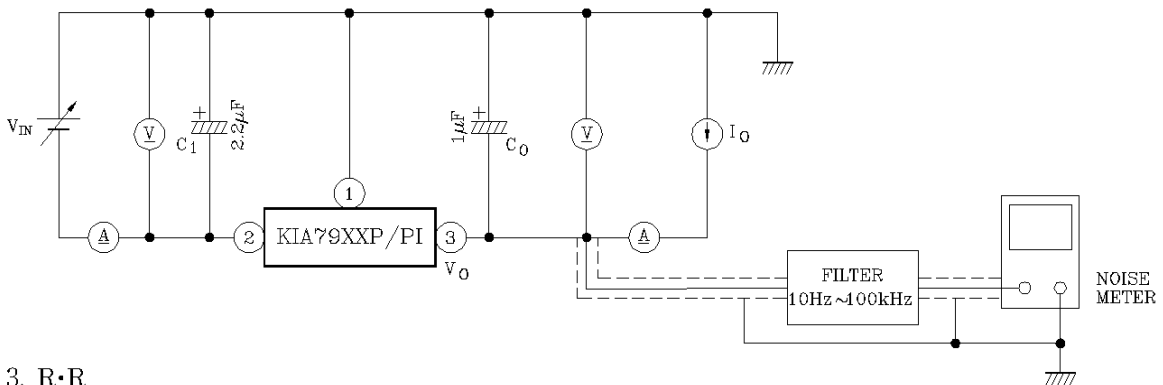
TEST CIRCUIT

1. V_{OUT} , Reg•Line, Reg•Load, I_B , ΔI_B , V_D , T_{CVO}



- Notes :
- (1) To specify an output voltage, substitute voltage value for "XX"
 - (2) Required for stability. For value given, capacitor must be solid tantalum. If aluminium electrolytics are used, at least ten times value shown should be selected. C_1 is required if regulator is located an appreciable distance from power supply filter.
 - (3) To improve transient response. If large capacitors are used, a high current diode from input to output (1N4001 or similar) should be introduced to protect the device from momentary input short circuit.

2. V_{NO}



3. $R \cdot R$

