

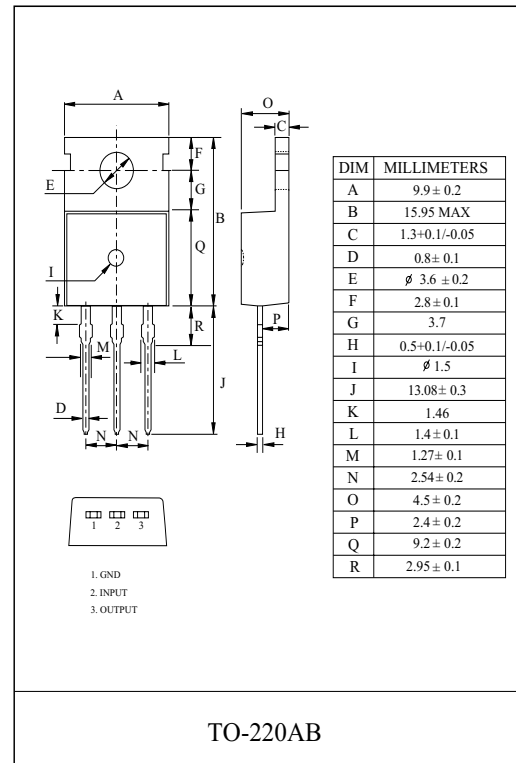
THREE TERMINAL NEGATIVE VOLTAGE REGULATORS -5V, -6V, -7V, -8V, -12V, -15V, -18V, -20V, -24V.

FEATURES

- Suitable for C-MOS, TTL, and the other digital IC power supply.
- Internal thermal overload protecting.
- Output Current up to 1.5A.
- Internal short circuit current limiting.
- Package is TO-220AB

LINE-UP

| ITEM | OUTPUT VOLTAGE (Typ.) | UNIT |
|----------|-----------------------|------|
| KIA7905P | -5 | V |
| KIA7906P | -6 | |
| KIA7907P | -7 | |
| KIA7908P | -8 | |
| KIA7909P | -9 | |
| KIA7910P | -10 | |
| KIA7912P | -12 | |
| KIA7915P | -15 | |
| KIA7918P | -18 | |
| KIA7920P | -20 | |
| KIA7924P | -24 | |

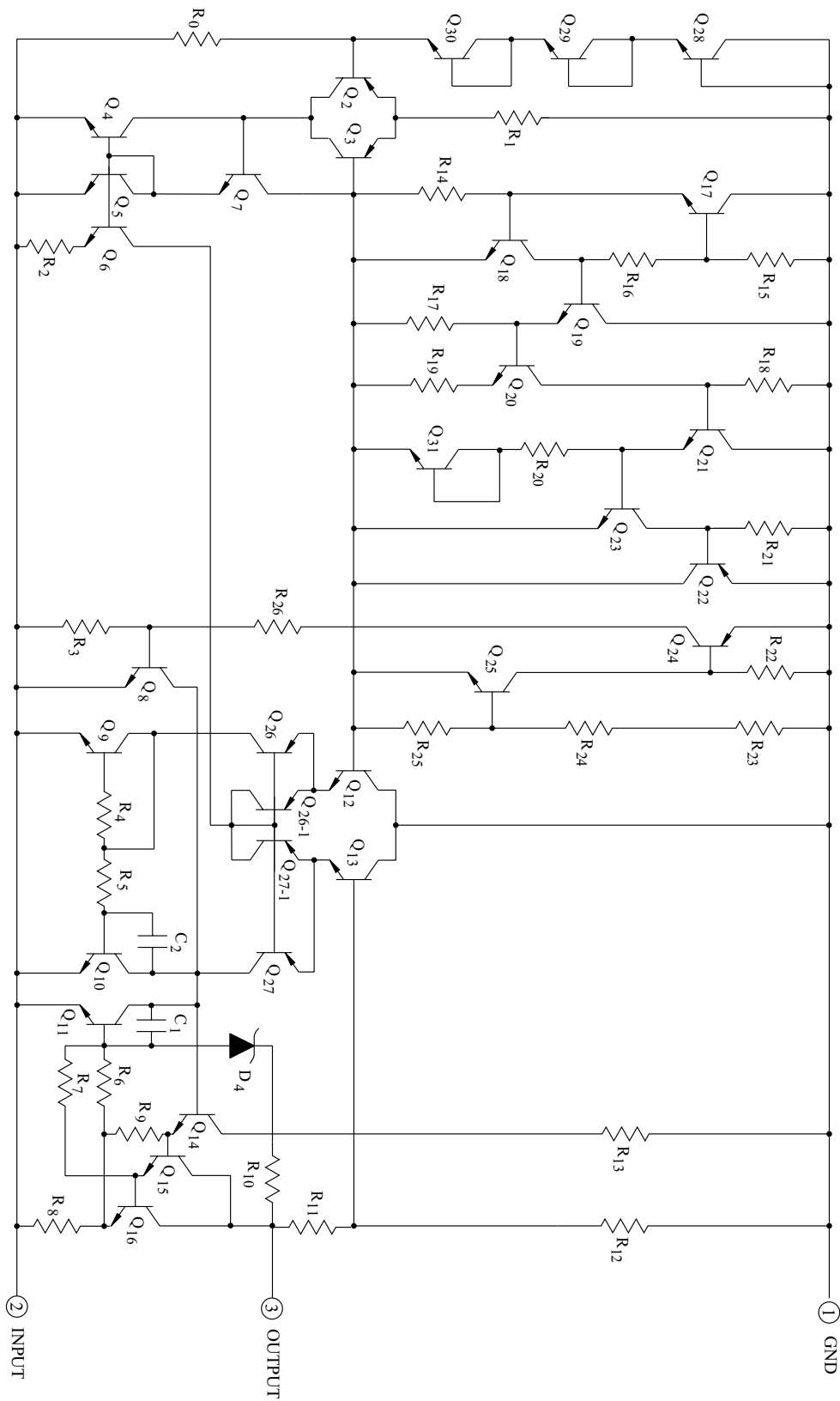


MAXIMUM RATINGS (Ta=25 °C)

| CHARACTERISTIC | SYMBOL | RATING | UNIT | |
|--------------------------------|---|-----------------|------|---|
| Input Voltage | V _{IN} | -35 | V | |
| | | -40 | | |
| | Power Dissipation-1 (No Heatsink) | P _{D1} | 1.9 | W |
| | Power Dissipation-2 (Infinite Heatsink) | P _{D2} | 30 | W |
| Operating Junction Temperature | T _j | -40 150 | | |
| Storage Temperature | T _{stg} | -55 150 | | |
| Maximum Junction Temperature | T _{j(max)} | 150 | | |

KIA7905P~KIA7924P

EQUIVALENT CIRCUIT



KIA7905P~KIA7924P

ELECTRICAL CHARACTERISTICS

KIA7905P

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

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

KIA7905P~KIA7924P

ELECTRICAL CHARACTERISTICS

KIA7906P

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

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

KIA7905P~KIA7924P

ELECTRICAL CHARACTERISTICS

KIA7907P

(Unless otherwise specified, $V_{IN}=-12V$, $I_{OUT}=500mA$, $0 < T_j < 125$, $C_{IN}=2.2 \mu F$, $C_{OUT}=1 \mu F$)

| CHARACTERISTIC | | SYMBOL | TEST CIRCUIT | TEST CONDITION | MIN. | TYP. | MAX. | UNIT | |
|---|--|-----------|--------------|---|-----------------------|------|-------|---------------|----|
| Output Voltage | | V_{OUT} | Fig.1 | $T_j=25$ | -7.28 | -7.0 | -6.72 | V | |
| Input Regulation | | Reg line | Fig.1 | $T_j=25$ | -15V V_{IN} -10V | - | 10 | 70 | mV |
| | | | | | -25V V_{IN} -9V | - | 45 | 140 | |
| Load Regulation | | Reg load | Fig.1 | $T_j=25$ | 5mA I_{OUT} 1.5A | - | 20 | 140 | mV |
| | | | | | 250mA I_{OUT} 750mA | - | 7 | 70 | |
| Output Voltage | | V_{OUT} | Fig.1 | -22V V_{IN} -9V 5mA I_{OUT} 1.0A | -7.35 | - | -6.65 | V | |
| Quiescent Current | | I_B | Fig.1 | $T_j=25$ | - | 4.3 | 8.0 | mA | |
| Quiescent Current Change | | Line | Fig.1 | $T_j=25$ | -25V V_{IN} -9V | - | - | 1.0 | mA |
| | | Load | | | 5mA I_{OUT} 1.0A | - | - | 0.5 | |
| Output Noise Voltage | | V_{NO} | Fig.2 | $T_a=25$, 10Hz f 100kHz | - | 49 | - | μV_{rms} | |
| Ripple Rejection Ratio | | RR | Fig.3 | $f=120Hz$, $I_{OUT}=20mA$, | 60 | 67 | - | dB | |
| Short Circuit Current Limit | | I_{SC} | Fig.1 | $T_j=25$ | - | 1.9 | - | A | |
| Average Temperature Coefficient of Output Voltage | | T_{CVO} | Fig.1 | $I_{OUT}=5mA$ | - | 0.9 | - | mV/ | |
| Dropout Voltage | | V_D | Fig.1 | $T_j=25$, $I_{OUT}=1A$ | - | 2.0 | - | V | |

KIA7905P~KIA7924P

ELECTRICAL CHARACTERISTICS

KIA7908P

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

| CHARACTERISTIC | | SYMBOL | TEST CIRCUIT | TEST CONDITION | MIN. | TYP. | MAX. | UNIT | |
|---|--|-----------|--------------|--|-----------------------|------|------|---------------|----|
| Output Voltage | | V_{OUT} | Fig.1 | $T_j=25$ | -8.3 | -8.0 | -7.7 | V | |
| Input Regulation | | Reg line | Fig.1 | $T_j=25$ | -17V V_{IN} -11V | - | 5 | 80 | mV |
| | | | | | -25V V_{IN} -10.5V | - | 10 | 100 | |
| Load Regulation | | Reg load | Fig.1 | $T_j=25$ | 5mA I_{OUT} 1.5A | - | 12 | 160 | mV |
| | | | | | 250mA I_{OUT} 750mA | - | 4 | 80 | |
| Output Voltage | | V_{OUT} | Fig.1 | -23V V_{IN} -11.5V 5mA I_{OUT} 1.0A | -8.4 | -8.0 | -7.6 | V | |
| Quiescent Current | | I_B | Fig.1 | $T_j=25$ | - | 3 | 6 | mA | |
| Quiescent Current Change | | Line | Fig.1 | $T_j=25$ | -25V V_{IN} -11.5V | - | 0.1 | 1.0 | mA |
| | | Load | | | 5mA I_{OUT} 1.0A | - | 0.05 | 0.5 | |
| Output Noise Voltage | | V_{NO} | Fig.2 | $T_a=25$, 10Hz f 100kHz | - | 175 | - | μV_{rms} | |
| Ripple Rejection Ratio | | RR | Fig.3 | $f=120Hz$, $I_{OUT}=20mA$, | 54 | 60 | - | dB | |
| Short Circuit Current Limit | | I_{SC} | Fig.1 | $T_j=25$ | - | 1.9 | - | A | |
| Average Temperature Coefficient of Output Voltage | | T_{CVO} | Fig.1 | $I_{OUT}=5mA$ | - | -0.6 | - | mV/ | |
| Dropout Voltage | | V_D | Fig.1 | $T_j=25$, $I_{OUT}=1A$ | - | 2.0 | - | V | |

KIA7905P~KIA7924P

ELECTRICAL CHARACTERISTICS

KIA7909P

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

| CHARACTERISTIC | | SYMBOL | TEST CIRCUIT | TEST CONDITION | MIN. | TYP. | MAX. | UNIT | |
|---|--|-----------|--------------|--|-----------------------|------|------|---------------|-----|
| Output Voltage | | V_{OUT} | Fig.1 | $T_j=25$ | -9.3 | -9.0 | -8.7 | V | |
| Input Regulation | | Reg line | Fig.1 | $T_j=25$ | -19V V_{IN} -13V | - | 5 | 90 | mV |
| | | | | | -26V V_{IN} -11.5V | - | 10 | 100 | |
| Load Regulation | | Reg load | Fig.1 | $T_j=25$ | 5mA I_{OUT} 1.5A | - | 10 | 150 | mV |
| | | | | | 250mA I_{OUT} 750mA | - | 5 | 120 | |
| Output Voltage | | V_{OUT} | Fig.1 | -24V V_{IN} -11.5V 5mA I_{OUT} 1.0A | -9.4 | -9.0 | -8.6 | V | |
| Quiescent Current | | I_B | Fig.1 | $T_j=25$ | - | 3 | 6 | mA | |
| Quiescent Current Change | | Line | Fig.1 | -26.5V V_{IN} -13V | - | 0.1 | 1.0 | mA | |
| | | Load | | | 5mA I_{OUT} 1.0A | - | 0.05 | | 0.5 |
| Output Noise Voltage | | V_{NO} | Fig.2 | $T_a=25$, 10Hz f 100kHz | - | 180 | - | μV_{rms} | |
| Ripple Rejection Ratio | | RR | Fig.3 | $f=120Hz$, $I_{OUT}=20mA$, | 54 | 60 | - | dB | |
| Short Circuit Current Limit | | I_{SC} | Fig.1 | $T_j=25$ | - | 1.9 | - | A | |
| Average Temperature Coefficient of Output Voltage | | T_{CVO} | Fig.1 | $I_{OUT}=5mA$ | - | -0.7 | - | mV/ | |
| Dropout Voltage | | V_D | Fig.1 | $T_j=25$, $I_{OUT}=1A$ | - | 2.0 | - | V | |

KIA7905P~KIA7924P

ELECTRICAL CHARACTERISTICS

KIA7910P

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

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

KIA7905P~KIA7924P

ELECTRICAL CHARACTERISTICS

KIA7912P

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

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

KIA7905P~KIA7924P

ELECTRICAL CHARACTERISTICS

KIA7915P

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

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

KIA7905P~KIA7924P

ELECTRICAL CHARACTERISTICS

KIA7918P

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

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

KIA7905P~KIA7924P

ELECTRICAL CHARACTERISTICS

KIA7920P

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

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

KIA7905P~KIA7924P

ELECTRICAL CHARACTERISTICS

KIA7924P

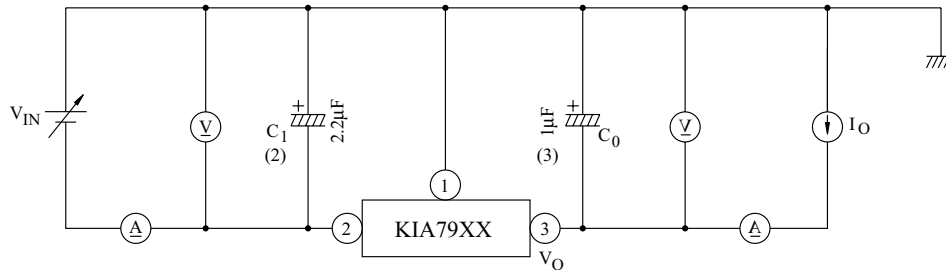
(Unless otherwise specified, $V_{IN}=-33V$, $I_{OUT}=500mA$, $0 < T_j < 125$, $C_{IN}=0.33 \mu F$, $C_{OUT}=0.1 \mu F$)

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

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TEST CIRCUIT

Fig.1 Standard Test Circuit



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.

Fig.2 V_{NO} Test Circuit

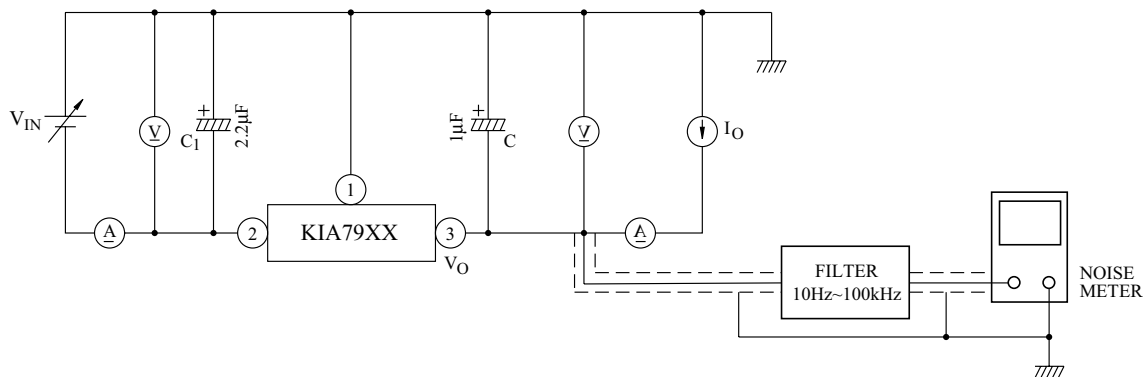
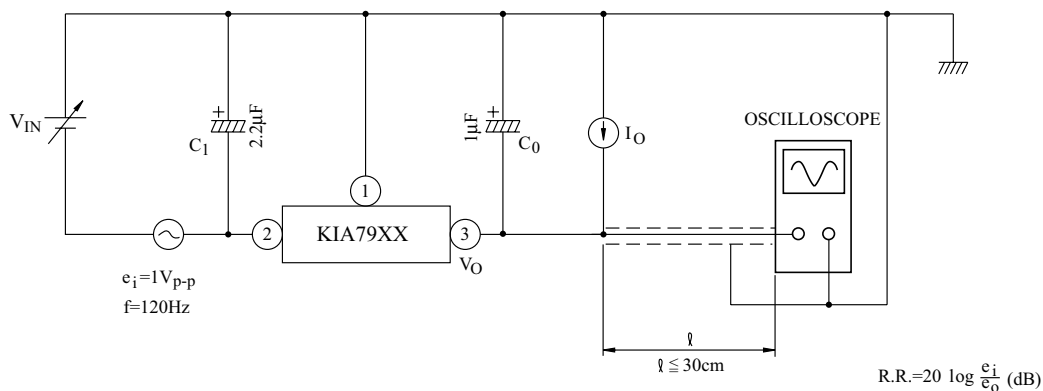


Fig.3 Ripple Rejection Test Circuit



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Fig. 4

$I_B - T_j$

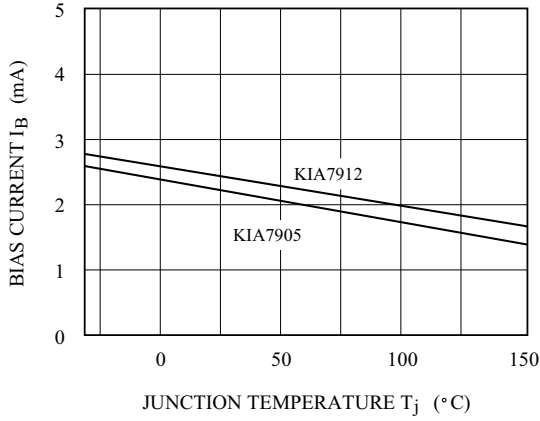


Fig. 5

$V_{OUT} - T_j$

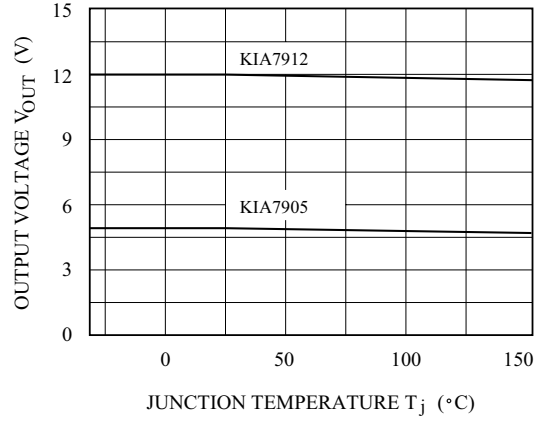


Fig. 6

$RR - I_{OUT}$

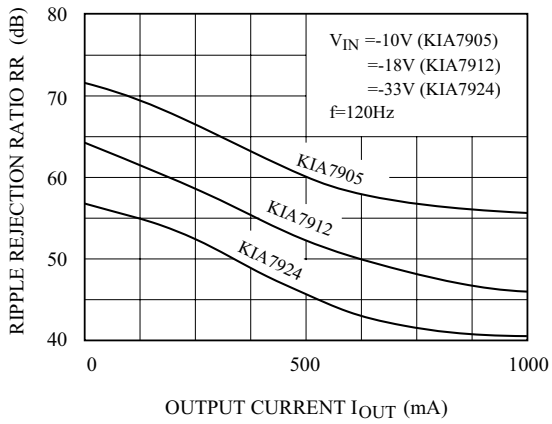


Fig. 7

$I_{SC} - V_{IN}$

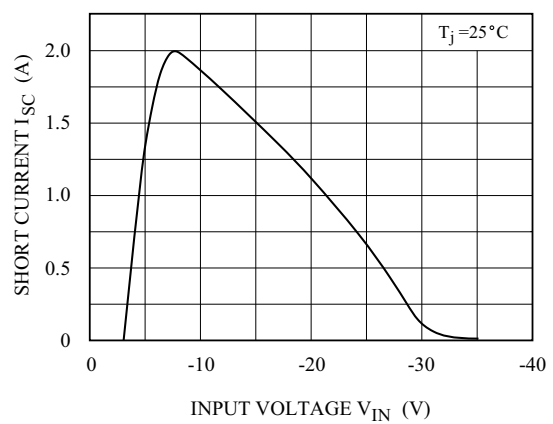


Fig. 8

$V_D - T_j$

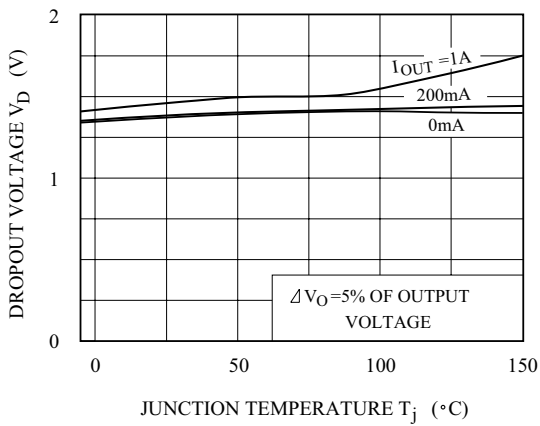


Fig. 9

$P_D - T_a$

