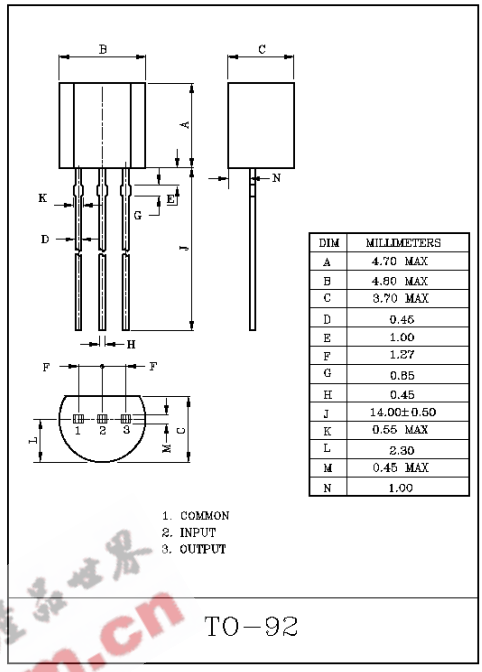
THREE TERMINAL NEGATIVE VOLTAGE REGULATORS
5V, 6V, 8V, 9V, 10V, 12V, 15V, 18V, 20V, 24V




| DIM | MILLIMETERS |
|---|---|
| A | 4.70 MAX |
| B | 4.60 MAX |
| C | 3.70 MAX |
| D | 0.45 |
| E | 1.00 |
| F | 1.27 |
| G | 0.85 |
| H | 0.45 |
| J | 14.00±0.50 |
| K | 0.55 MAX |
| L | 2.30 |
| M | 0.45 MAX |
| N | 1.00 |

FEATURES:

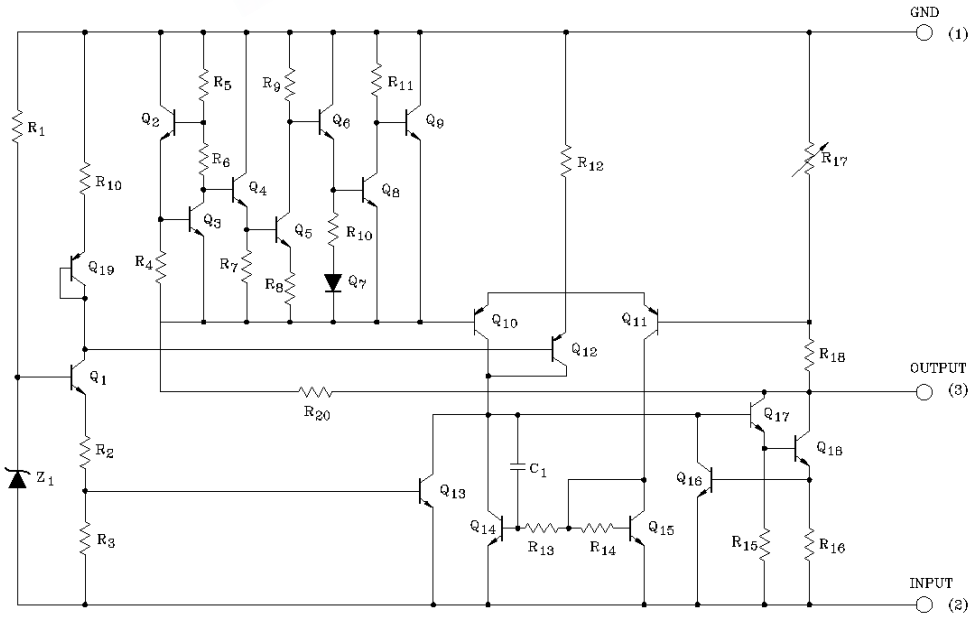
- Best Suited to a Power Supply for TTL and CMOS.
- Built-in Overcurrent Protective Circuit.
- Built-in Thermal Protective Circuit.
- Max. Output Current 150mA ($T_j$=25℃).
- Packaged in TO-92.

MAXIMUM RATINGS (Ta=25℃)

| CHARACTERISTIC | | SYMBOL | RATING | UNIT |
|---|---|---|---|---|
| Input Voltage | KIA79S05P~ KIA79S15P | $V_{IN}$ | -35 | V |
| | KIA79S18P~ KIA79S24P | | -40 | |
| Power Dissipation (Tc=25℃) | | $P_D$ | 600 | mW |
| Operating Junction Temperature | | $T_j$ | -30~150 | ℃ |
| Operating Temperature | | $T_{opr}$ | -30~75 | ℃ |
| Storage temperature | | $T_{stg}$ | -55~150 | ℃ |



EQUIVALENT CIRCUIT



ELECTRICAL CHARACTERISTICS

KIA79S05P

(Unless otherwise specified, $V_{IN}$=-10V, $I_{OUT}$=40mA, $C_{IN}$=0.33μF, $C_{OUT}$=0.1μF, 0℃≦$T_j$≦125℃)

| CHARACTERISTIC | SYMBOL | TEST CIRCUIT | TEST CONDITION | | MIN. | TYP. | MAX. | UNIT |
|---|---|---|---|---|---|---|---|---|
| Output Voltage | $V_{OUT}$ | 1 | $T_j$=25℃ | | -5.2 | -5.0 | -4.8 | V |
| Input Regulation | Reg line | 1 | $T_j$=25℃ | -20V≦$V_{IN}$≦-7.0V | - | 55 | 150 | mV |
| | | | | -20V≦$V_{IN}$≦-8.0V | - | 45 | 100 | |
| Load Regulation | Reg load | 1 | $T_j$=25℃ | 1.0mA≦$I_{OUT}$≦100mA | - | 11 | 60 | mV |
| | | | | 1.0mA≦$I_{OUT}$≦40mA | - | 5.0 | 30 | |
| Output Voltage | $V_{OUT}$ | 1 | -20V≦$V_{IN}$≦-7.0V<br>1.0mA≦$I_{OUT}$≦40mA | | -5.25 | - | -4.75 | V |
| | | | $V_{IN}$=-10V, 1.0mA≦$I_{OUT}$≦70mA | | -5.25 | - | -4.75 | |
| Quiescent Current | $I_B$ | 1 | $T_j$=25℃ | | - | 3.1 | 6.0 | mA |
| | | | $T_j$=125℃ | | - | - | 5.5 | |
| Quiescent Current Change | $\Delta I_{BI}$ | 1 | -20V≦$V_{IN}$≦-8.0V | | - | - | 1.5 | mA |
| | $\Delta I_{BO}$ | | 1.0mA≦$I_{OUT}$≦40mA | | - | - | 0.1 | |
| Output Noise Voltage | $V_{NO}$ | 3 | Ta=25℃, 10Hz≦f≦100kHz | | - | 40 | - | $\mu V_{rms}$ |
| Long Term Stability | $\Delta V_{OUT}/\Delta t$ | 1 | | | - | 12 | - | mV/1.0kHrs |
| Ripple Rejection Ratio | RR | 2 | -18V≦$V_{IN}$≦-8.0V,<br>$T_j$=25℃, f=120Hz | | 41 | 49 | - | dB |
| Dropout Voltage | $\lvert V_{IN}-V_{OUT}\rvert$ | 1 | $T_j$=25℃, $I_{OUT}$=40mA | | - | 1.7 | - | V |
| Average Temperature Coefficient of Output Voltage | $TC_{VO}$ | 1 | $I_{OUT}$=5mA | | - | -0.6 | - | mV/℃ |

ELECTRICAL CHARACTERISTICS

KIA79S06P

(Unless otherwise specified, $V_{IN}$=-11V, $I_{OUT}$=40mA, $C_{IN}$=0.33μF, $C_{OUT}$=0.1μF, 0℃≦$T_j$≦125℃)

| CHARACTERISTIC | SYMBOL | TEST CIRCUIT | TEST CONDITION | | MIN. | TYP. | MAX. | UNIT |
|---|---|---|---|---|---|---|---|---|
| Output Voltage | $V_{OUT}$ | 1 | $T_j$=25℃ | | -6.24 | -6.0 | -5.76 | V |
| Input Regulation | Reg line | 1 | $T_j$=25℃ | -21V≦$V_{IN}$≦-8.1V | - | 50 | 150 | mV |
| | | | | -21V≦$V_{IN}$≦-9.0V | - | 45 | 110 | |
| Load Regulation | Reg load | 1 | $T_j$=25℃ | 1.0mA≦$I_{OUT}$≦100mA | - | 12 | 70 | mV |
| | | | | 1.0mA≦$I_{OUT}$≦40mA | - | 5.5 | 35 | |
| Output Voltage | $V_{OUT}$ | 1 | -21V≦$V_{IN}$≦-8.1V<br>1.0mA≦$I_{OUT}$≦40mA | | -6.3 | - | -5.7 | V |
| | | | $V_{IN}$=-11V, 1.0mA≦$I_{OUT}$≦70mA | | -6.3 | - | -5.7 | |
| Quiescent Current | $I_B$ | 1 | $T_j$=25℃ | | - | 3.1 | 6.0 | mA |
| | | | $T_j$=125℃ | | - | - | 5.5 | |
| Quiescent Current Change | $\Delta I_{BI}$ | 1 | -20V≦$V_{IN}$≦-9.0V | | - | - | 1.5 | mA |
| | $\Delta I_{BO}$ | | 1.0mA≦$I_{OUT}$≦40mA | | - | - | 0.1 | |
| Output Noise Voltage | $V_{NO}$ | 3 | Ta=25℃, 10Hz≦f≦100kHz | | - | 40 | - | $\mu V_{rms}$ |
| Long Term Stability | $\Delta V_{OUT}/\Delta t$ | 1 | | | - | 14 | - | mV/1.0kHrs |
| Ripple Rejection Ratio | RR | 2 | -19V≦$V_{IN}$≦-9.0V,<br>$T_j$=25℃, f=120Hz | | 39 | 47 | - | dB |
| Dropout Voltage | $\lvert V_{IN}-V_{OUT}\rvert$ | 1 | $T_j$=25℃, $I_{OUT}$=40mA | | - | 1.7 | - | V |
| Average Temperature Coefficient of Output Voltage | $TC_{VO}$ | 1 | $I_{OUT}$=5mA | | - | -0.7 | - | mV/℃ |

ELECTRICAL CHARACTERISTICS

KIA79S08P

(Unless otherwise specified, $V_{IN}$=-14V, $I_{OUT}$=40mA, $C_{IN}$=0.33μF, $C_{OUT}$=0.1μF, 0℃≦$T_j$≦125℃)

| CHARACTERISTIC | SYMBOL | TEST CIRCUIT | TEST CONDITION | | MIN. | TYP. | MAX. | UNIT |
|---|---|---|---|---|---|---|---|---|
| Output Voltage | $V_{OUT}$ | 1 | $T_j$=25℃ | | -8.3 | -8.0 | -7.7 | V |
| Input Regulation | Reg line | 1 | $T_j$=25℃ | -23V≦$V_{IN}$≦-10.5V | - | 20 | 175 | mV |
| | | | | -23V≦$V_{IN}$≦-11V | - | 12 | 125 | |
| Load Regulation | Reg load | 1 | $T_j$=25℃ | 1.0mA≦$I_{OUT}$≦100mA | - | 15 | 80 | mV |
| | | | | 1.0mA≦$I_{OUT}$≦40mA | - | 7.0 | 40 | |
| Output Voltage | $V_{OUT}$ | 1 | -23V≦$V_{IN}$≦-10.5V<br>1.0mA≦$I_{OUT}$≦40mA | | -8.4 | - | -7.6 | V |
| | | | $V_{IN}$=-14V, 1.0mA≦$I_{OUT}$≦70mA | | -8.4 | - | -7.6 | |
| Quiescent Current | $I_B$ | 1 | $T_j$=25℃ | | - | 3.1 | 6.5 | mA |
| | | | $T_j$=125℃ | | - | - | 6.0 | |
| Quiescent Current Change | $\Delta I_{BI}$ | 1 | -23V≦$V_{IN}$≦-11V | | - | - | 1.5 | mA |
| | $\Delta I_{BO}$ | | 1.0mA≦$I_{OUT}$≦40mA | | - | - | 0.1 | |
| Output Noise Voltage | $V_{NO}$ | 3 | Ta=25℃, 10Hz≦f≦100kHz | | - | 60 | - | $\mu V_{rms}$ |
| Long Term Stability | $\Delta V_{OUT}/\Delta t$ | 1 | | | - | 20 | - | mV/1.0kHrs |
| Ripple Rejection Ratio | RR | 2 | -23V≦$V_{IN}$≦-12V,<br>$T_j$=25℃, f=120Hz | | 37 | 45 | - | dB |
| Dropout Voltage | $\lvert V_{IN}-V_{OUT}\rvert$ | 1 | $T_j$=25℃, $I_{OUT}$=40mA | | - | 1.7 | - | V |
| Average Temperature Coefficient of Output Voltage | $TC_{VO}$ | 1 | $I_{OUT}$=5mA | | - | -0.8 | - | mV/℃ |

ELECTRICAL CHARACTERISTICS

KIA79S09P

(Unless otherwise specified, $V_{IN}$=-15V, $I_{OUT}$=40mA, $C_{IN}$=0.33μF, $C_{OUT}$=0.1μF, 0℃≦$T_j$≦125℃)

| CHARACTERISTIC | SYMBOL | TEST CIRCUIT | TEST CONDITION | | MIN. | TYP. | MAX. | UNIT |
|---|---|---|---|---|---|---|---|---|
| Output Voltage | $V_{OUT}$ | 1 | $T_j$=25℃ | | -9.36 | -9.0 | -8.64 | V |
| Input Regulation | Reg line | 1 | $T_j$=25℃ | -24V≦$V_{IN}$≦-11.4V | - | 80 | 200 | mV |
| | | | | -24V≦$V_{IN}$≦-12V | - | 20 | 160 | |
| Load Regulation | Reg load | 1 | $T_j$=25℃ | 1.0mA≦$I_{OUT}$≦100mA | - | 17 | 90 | mV |
| | | | | 1.0mA≦$I_{OUT}$≦40mA | - | 8.0 | 45 | |
| Output Voltage | $V_{OUT}$ | 1 | -24V≦$V_{IN}$≦-11.4V<br>1.0mA≦$I_{OUT}$≦40mA | | -9.45 | - | -8.55 | V |
| | | | $V_{IN}$=-15V, 1.0mA≦$I_{OUT}$≦70mA | | -9.45 | - | -8.55 | |
| Quiescent Current | $I_B$ | 1 | $T_j$=25℃ | | - | 3.2 | 6.5 | mA |
| | | | $T_j$=125℃ | | - | - | 6.0 | |
| Quiescent Current Change | $\Delta I_{BI}$ | 1 | -24V≦$V_{IN}$≦-12V | | - | - | 1.5 | mA |
| | $\Delta I_{BO}$ | | 1.0mA≦$I_{OUT}$≦40mA | | - | - | 0.1 | |
| Output Noise Voltage | $V_{NO}$ | 3 | Ta=25℃, 10Hz≦f≦100kHz | | - | 65 | - | $\mu V_{rms}$ |
| Long Term Stability | $\Delta V_{OUT}/\Delta t$ | 1 | | | - | 21 | - | mV/1.0kHrs |
| Ripple Rejection Ratio | RR | 2 | -24V≦$V_{IN}$≦-12V,<br>$T_j$=25℃, f=120Hz | | 36 | 44 | - | dB |
| Dropout Voltage | $\lvert V_{IN}-V_{OUT}\rvert$ | 1 | $T_j$=25℃, $I_{OUT}$=40mA | | - | 1.7 | - | V |
| Average Temperature Coefficient of Output Voltage | $TC_{VO}$ | 1 | $I_{OUT}$=5mA | | - | -0.85 | - | mV/℃ |

ELECTRICAL CHARACTERISTICS

KIA79S10P

(Unless otherwise specified, $V_{IN}$=-16V, $I_{OUT}$=40mA, $C_{IN}$=0.33μF, $C_{OUT}$=0.1μF, 0℃≦$T_j$≦125℃)

| CHARACTERISTIC | SYMBOL | TEST CIRCUIT | TEST CONDITION | | MIN. | TYP. | MAX. | UNIT |
|---|---|---|---|---|---|---|---|---|
| Output Voltage | $V_{OUT}$ | 1 | $T_j$=25℃ | | -10.4 | -10.0 | -9.6 | V |
| Input Regulation | Reg line | 1 | $T_j$=25℃ | -25V≦$V_{IN}$≦-12.5V | - | 80 | 230 | mV |
| | | | | -25V≦$V_{IN}$≦-13V | - | 30 | 170 | |
| Load Regulation | Reg load | 1 | $T_j$=25℃ | 1.0mA≦$I_{OUT}$≦100mA | - | 18 | 90 | mV |
| | | | | 1.0mA≦$I_{OUT}$≦40mA | - | 8.5 | 45 | |
| Output Voltage | $V_{OUT}$ | 1 | -25V≦$V_{IN}$≦-12.5V<br>1.0mA≦$I_{OUT}$≦40mA | | -10.5 | - | -9.5 | V |
| | | | $V_{IN}$=-16V, 1.0mA≦$I_{OUT}$≦70mA | | -10.5 | - | -9.5 | |
| Quiescent Current | $I_B$ | 1 | $T_j$=25℃ | | - | 3.2 | 6.5 | mA |
| | | | $T_j$=125℃ | | - | - | 6.0 | |
| Quiescent Current Change | $\Delta I_{BI}$ | 1 | -25V≦$V_{IN}$≦-13V | | - | - | 1.5 | mA |
| | $\Delta I_{BO}$ | | 1.0mA≦$I_{OUT}$≦40mA | | - | - | 0.1 | |
| Output Noise Voltage | $V_{NO}$ | 3 | Ta=25℃, 10Hz≦f≦100kHz | | - | 70 | - | $\mu V_{rms}$ |
| Long Term Stability | $\Delta V_{OUT}/\Delta t$ | 1 | | | - | 22 | - | mV/1.0kHrs |
| Ripple Rejection Ratio | RR | 2 | -24V≦$V_{IN}$≦-13V,<br>$T_j$=25℃, f=120Hz | | 36 | 43 | - | dB |
| Dropout Voltage | $\lvert V_{IN}-V_{OUT}\rvert$ | 1 | $T_j$=25℃, $I_{OUT}$=40mA | | - | 1.7 | - | V |
| Average Temperature Coefficient of Output Voltage | $TC_{VO}$ | 1 | $I_{OUT}$=5mA | | - | -0.9 | - | mV/℃ |

ELECTRICAL CHARACTERISTICS

KIA79S12P

(Unless otherwise specified, $V_{IN}$=-19V, $I_{OUT}$=40mA, $C_{IN}$=0.33μF, $C_{OUT}$=0.1μF, 0℃ ≦ $T_j$ ≦ 125℃)

| CHARACTERISTIC | SYMBOL | TEST CIRCUIT | TEST CONDITION | | MIN. | TYP. | MAX. | UNIT |
|---|---|---|---|---|---|---|---|---|
| Output Voltage | $V_{OUT}$ | 1 | $T_j$=25℃ | | -12.5 | -12.0 | -11.5 | V |
| Input Regulation | Reg line | 1 | $T_j$=25℃ | -27V ≦ $V_{IN}$ ≦ -14.5V | - | 120 | 250 | mV |
| | | | | -27V ≦ $V_{IN}$ ≦ -16V | - | 100 | 200 | |
| Load Regulation | Reg load | 1 | $T_j$=25℃ | 1.0mA ≦ $I_{OUT}$ ≦ 100mA | - | 20 | 100 | mV |
| | | | | 1.0mA ≦ $I_{OUT}$ ≦ 40mA | - | 10 | 50 | |
| Output Voltage | $V_{OUT}$ | 1 | -27V ≦ $V_{IN}$ ≦ -14.5V<br>1.0mA ≦ $I_{OUT}$ ≦ 40mA | | -12.6 | - | -11.4 | V |
| | | | $V_{IN}$=-19V, 1.0mA ≦ $I_{OUT}$ ≦ 70mA | | -12.6 | - | -11.4 | |
| Quiescent Current | $I_B$ | 1 | $T_j$=25℃ | | - | 3.2 | 6.5 | mA |
| | | | $T_j$=125℃ | | - | - | 6.0 | |
| Quiescent Current Change | $\Delta I_{BI}$ | 1 | -27V ≦ $V_{IN}$ ≦ -16V | | - | - | 1.5 | mA |
| | $\Delta I_{BO}$ | | 1.0mA ≦ $I_{OUT}$ ≦ 40mA | | - | - | 0.1 | |
| Output Noise Voltage | $V_{NO}$ | 3 | Ta=25℃, 10Hz ≦ f ≦ 100kHz | | - | 80 | - | $\mu V_{rms}$ |
| Long Term Stability | $\Delta V_{OUT}/\Delta t$ | 1 | | | - | 24 | - | mV/1.0kHrs |
| Ripple Rejection Ratio | RR | 2 | -25V ≦ $V_{IN}$ ≦ -15V,<br>$T_j$=25℃, f=120Hz | | 37 | 42 | - | dB |
| Dropout Voltage | $\lvert V_{IN} - V_{OUT} \rvert$ | 1 | $T_j$=25℃, $I_{OUT}$=40mA | | - | 1.7 | - | V |
| Average Temperature Coefficient of Output Voltage | $TC_{VO}$ | 1 | $I_{OUT}$=5mA | | - | -1.0 | - | mV/℃ |

ELECTRICAL CHARACTERISTICS

KIA79S15P

(Unless otherwise specified, $V_{IN}$=-23V, $I_{OUT}$=40mA, $C_{IN}$=0.33μF, $C_{OUT}$=0.1μF, 0℃ ≤ $T_j$ ≤ 125℃)

| CHARACTERISTIC | SYMBOL | TEST CIRCUIT | TEST CONDITION | | MIN. | TYP. | MAX. | UNIT |
|---|---|---|---|---|---|---|---|---|
| Output Voltage | $V_{OUT}$ | 1 | $T_j$=25℃ | | -15.6 | -15.0 | -14.4 | V |
| Input Regulation | Reg line | 1 | $T_j$=25℃ | -30V ≤ $V_{IN}$ ≤ -17.5V | - | 130 | 300 | mV |
| | | | | -30V ≤ $V_{IN}$ ≤ -20V | - | 110 | 250 | |
| Load Regulation | Reg load | 1 | $T_j$=25℃ | 1.0mA ≤ $I_{OUT}$ ≤ 100mA | - | 25 | 150 | mV |
| | | | | 1.0mA ≤ $I_{OUT}$ ≤ 40mA | - | 12 | 75 | |
| Output Voltage | $V_{OUT}$ | 1 | -30V ≤ $V_{IN}$ ≤ -17.5V<br>1.0mA ≤ $I_{OUT}$ ≤ 40mA | | -15.75 | - | -14.25 | V |
| | | | $V_{IN}$=-23V, 1.0mA ≤ $I_{OUT}$ ≤ 70mA | | -15.75 | - | -14.25 | |
| Quiescent Current | $I_B$ | 1 | $T_j$=25℃ | | - | 3.3 | 6.5 | mA |
| | | | $T_j$=125℃ | | - | - | 6.0 | |
| Quiescent Current Change | $\Delta I_{BI}$ | 1 | -30V ≤ $V_{IN}$ ≤ -20V | | - | - | 1.5 | mA |
| | $\Delta I_{BO}$ | | 1.0mA ≤ $I_{OUT}$ ≤ 40mA | | - | - | 0.1 | |
| Output Noise Voltage | $V_{NO}$ | 3 | Ta=25℃, 10Hz ≤ f ≤ 100kHz | | - | 90 | - | $\mu V_{rms}$ |
| Long Term Stability | $\Delta V_{OUT}/\Delta t$ | 1 | | | - | 30 | - | mV/ 1.0kHrs |
| Ripple Rejection Ratio | RR | 2 | -28.5V ≤ $V_{IN}$ ≤ -18.5V,<br>$T_j$=25℃, f=120Hz | | 34 | 39 | - | dB |
| Dropout Voltage | $\lvert V_{IN} - V_{OUT} \rvert$ | 1 | $T_j$=25℃, $I_{OUT}$=40mA | | - | 1.7 | - | V |
| Average Temperature Coefficient of Output Voltage | $TC_{VO}$ | 1 | $I_{OUT}$=5mA | | - | -1.3 | - | mV/℃ |

ELECTRICAL CHARACTERISTICS

KIA79S18P

(Unless otherwise specified, $V_{IN}$=-27V, $I_{OUT}$=40mA, $C_{IN}$=0.33μF, $C_{OUT}$=0.1μF, 0℃≦$T_j$≦125℃)

| CHARACTERISTIC | SYMBOL | TEST CIRCUIT | TEST CONDITION | | MIN. | TYP. | MAX. | UNIT |
|---|---|---|---|---|---|---|---|---|
| Output Voltage | $V_{OUT}$ | 1 | $T_j$=25℃ | | -18.7 | -18.0 | -17.3 | V |
| Input Regulation | Reg line | 1 | $T_j$=25℃ | -33V≦$V_{IN}$≦-20.7V | - | 32 | 325 | mV |
| | | | | -33V≦$V_{IN}$≦-21V | - | 27 | 275 | |
| Load Regulation | Reg load | 1 | $T_j$=25℃ | 1.0mA≦$I_{OUT}$≦100mA | - | 30 | 170 | mV |
| | | | | 1.0mA≦$I_{OUT}$≦40mA | - | 15 | 75 | |
| Output Voltage | $V_{OUT}$ | 1 | -33V≦$V_{IN}$≦-20.9V<br>1.0mA≦$I_{OUT}$≦40mA | | -18.9 | - | -17.1 | V |
| | | | $V_{IN}$=-27V, 1.0mA≦$I_{OUT}$≦70mA | | -18.9 | - | -17.1 | |
| Quiescent Current | $I_B$ | 1 | $T_j$=25℃ | | - | 3.3 | 6.5 | mA |
| | | | $T_j$=125℃ | | - | - | 6.0 | |
| Quiescent Current Change | $\Delta I_{BI}$ | 1 | -33V≦$V_{IN}$≦-21V | | - | - | 1.5 | mA |
| | $\Delta I_{BO}$ | | 1.0mA≦$I_{OUT}$≦40mA | | - | - | 0.1 | |
| Output Noise Voltage | $V_{NO}$ | 3 | Ta=25℃, 10Hz≦f≦100kHz | | - | 150 | - | $\mu V_{rms}$ |
| Long Term Stability | $\Delta V_{OUT}/\Delta t$ | 1 | | | - | 45 | - | mV/<br>1.0kHrs |
| Ripple Rejection Ratio | RR | 2 | -33V≦$V_{IN}$≦-23V,<br>$T_j$=25℃, f=120Hz | | 33 | 48 | - | dB |
| Dropout Voltage | $\lvert V_{IN}-V_{OUT}\rvert$ | 1 | $T_j$=25℃, $I_{OUT}$=40mA | | - | 1.7 | - | V |
| Average Temperature Coefficient of Output Voltage | $TC_{VO}$ | 1 | $I_{OUT}$=5mA | | - | -1.5 | - | mV/℃ |

ELECTRICAL CHARACTERISTICS

KIA79S20P

(Unless otherwise specified, $V_{IN}$=-29V, $I_{OUT}$=40mA, $C_{IN}$=0.33μF, $C_{OUT}$=0.1μF, 0℃≦$T_j$≦125℃)

| CHARACTERISTIC | SYMBOL | TEST CIRCUIT | TEST CONDITION | | MIN. | TYP. | MAX. | UNIT |
|---|---|---|---|---|---|---|---|---|
| Output Voltage | $V_{OUT}$ | 1 | $T_j$=25℃ | | -20.8 | -20.0 | -19.2 | V |
| Input Regulation | Reg line | 1 | $T_j$=25℃ | -35V≦$V_{IN}$≦-23.5V | - | 33 | 330 | mV |
| | | | | -35V≦$V_{IN}$≦-24V | - | 28 | 285 | |
| Load Regulation | Reg load | 1 | $T_j$=25℃ | 1.0mA≦$I_{OUT}$≦100mA | - | 33 | 180 | mV |
| | | | | 1.0mA≦$I_{OUT}$≦40mA | - | 17 | 90 | |
| Output Voltage | $V_{OUT}$ | 1 | -35V≦$V_{IN}$≦-23.5V<br>1.0mA≦$I_{OUT}$≦40mA | | -21.0 | - | -19.0 | V |
| | | | $V_{IN}$=-29V, 1.0mA≦$I_{OUT}$≦70mA | | -21.0 | - | -19.0 | |
| Quiescent Current | $I_B$ | 1 | $T_j$=25℃ | | - | 3.3 | 6.5 | mA |
| | | | $T_j$=125℃ | | - | - | 6.0 | |
| Quiescent Current Change | $\Delta I_{BI}$ | 1 | -35V≦$V_{IN}$≦-24V | | - | - | 1.5 | mA |
| | $\Delta I_{BO}$ | | 1.0mA≦$I_{OUT}$≦40mA | | - | - | 0.1 | |
| Output Noise Voltage | $V_{NO}$ | 3 | Ta=25℃, 10Hz≦f≦100kHz | | - | 170 | - | $\mu V_{rms}$ |
| Long Term Stability | $\Delta V_{OUT}/\Delta t$ | 1 | | | - | 49 | - | mV/1.0kHrs |
| Ripple Rejection Ratio | RR | 2 | -35V≦$V_{IN}$≦-27V,<br>$T_j$=25℃, f=120Hz | | 31 | 37 | - | dB |
| Dropout Voltage | $\lvert V_{IN}-V_{OUT}\rvert$ | 1 | $T_j$=25℃, $I_{OUT}$=40mA | | - | 1.7 | - | V |
| Average Temperature Coefficient of Output Voltage | $TC_{VO}$ | 1 | $I_{OUT}$=5mA | | - | -1.7 | - | mV/℃ |

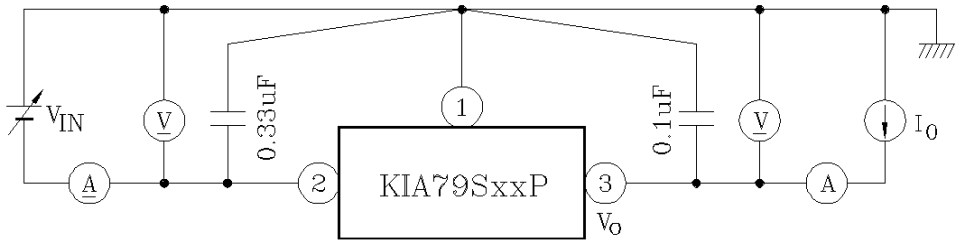
ELECTRICAL CHARACTERISTICS

KIA79S24P

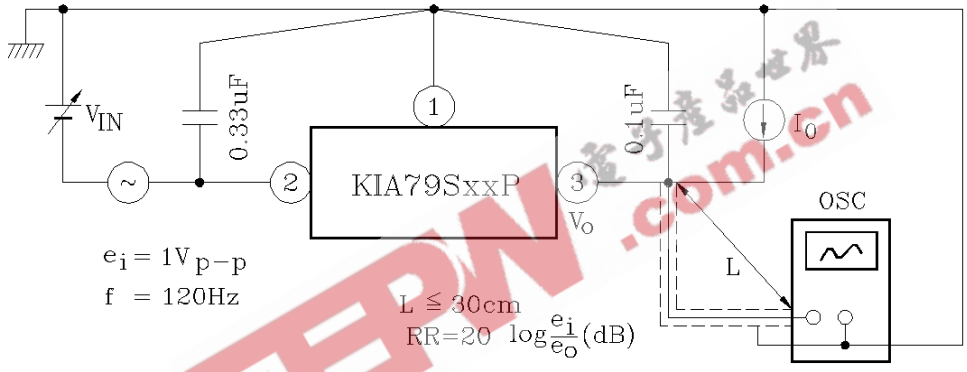
(Unless otherwise specified, $V_{IN}$=-33V, $I_{OUT}$=40mA, $C_{IN}$=0.33μF, $C_{OUT}$=0.1μF, 0℃≦$T_j$≦125℃)

| CHARACTERISTIC | SYMBOL | TEST CIRCUIT | TEST CONDITION | | MIN. | TYP. | MAX. | UNIT |
|---|---|---|---|---|---|---|---|---|
| Output Voltage | $V_{OUT}$ | 1 | $T_j$=25℃ | | -25.0 | -24.0 | -23.0 | V |
| Input Regulation | Reg line | 1 | $T_j$=25℃ | -38V≦$V_{IN}$≦-27V | - | 35 | 350 | mV |
| | | | | -38V≦$V_{IN}$≦-28V | - | 30 | 300 | |
| Load Regulation | Reg load | 1 | $T_j$=25℃ | 1.0mA≦$I_{OUT}$≦100mA | - | 40 | 200 | mV |
| | | | | 1.0mA≦$I_{OUT}$≦40mA | - | 20 | 100 | |
| Output Voltage | $V_{OUT}$ | 1 | -38V≦$V_{IN}$≦-27V<br>1.0mA≦$I_{OUT}$≦40mA | | -25.2 | - | -22.8 | V |
| | | | $V_{IN}$=-33V, 1.0mA≦$I_{OUT}$≦70mA | | -25.2 | - | -22.8 | |
| Quiescent Current | $I_B$ | 1 | $T_j$=25℃ | | - | 3.5 | 6.5 | mA |
| | | | $T_j$=125℃ | | - | - | 6.0 | |
| Quiescent Current Change | $\Delta I_{BI}$ | 1 | -38V≦$V_{IN}$≦-28V | | - | - | 1.5 | mA |
| | $\Delta I_{BO}$ | | 1.0mA≦$I_{OUT}$≦40mA | | - | - | 0.1 | |
| Output Noise Voltage | $V_{NO}$ | 3 | Ta=25℃, 10Hz≦f≦100kHz | | - | 200 | - | $\mu V_{rms}$ |
| Long Term Stability | $\Delta V_{OUT}/\Delta t$ | 1 | | | - | 56 | - | mV/1.0kHrs |
| Ripple Rejection Ratio | RR | 2 | -35V≦$V_{IN}$≦-29V,<br>$T_j$=25℃, f=120Hz | | 31 | 47 | - | dB |
| Dropout Voltage | $\lvert V_{IN}-V_{OUT}\rvert$ | 1 | $T_j$=25℃, $I_{OUT}$=40mA | | - | 1.7 | - | V |
| Average Temperature Coefficient of Output Voltage | $TC_{VO}$ | 1 | $I_{OUT}$=5mA | | - | -2.0 | - | mV/℃ |

TEST CIRCUIT 1




TEST CIRCUIT 2




TEST CIRCUIT 3