

# SK7805U THRU SK7815U

## 3-Terminal 1.5A Positive Voltage Regulators

### DESCRIPTION

The SK78XXU series of three-terminal positive regulators are available in TO-220 package and with several fixed output voltage, making them useful in a wide range of application. Each type employs internal current limiting, thermal shut-down and safe area protection, making it essentially indestructible. If adequate heat sinking is provided, they can deliver over 1.5A output current. Although designed as fixed voltage regulators, these devices can be used with external components to obtain adjustable voltage and currents.

\*Chip Size(before saw): 1.39 \*1.71 (mm)<sup>2</sup>

\*Wafer Size: 5 inch

\*PAD Size: 220 \*220 (μm)<sup>2</sup>

\*Top Metal: Al, Thickness: 4.9 μm

\*Surface Passivation: PESiO<sub>2</sub>+PESiN

\*Chip Thickness: before grind :525±25 (μm);  
after grind:300±10 (μm)

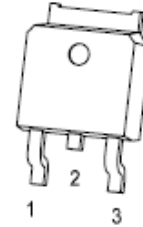
\*Scribe Line: 100 μm

### TO-252

1 GND

2. IN

3. OUT



### FEATURES

\*Output current up to 1.5A

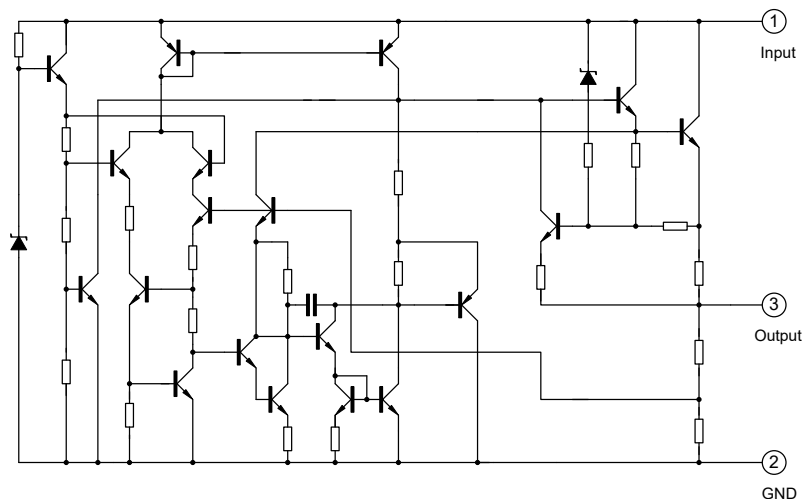
\*5V;6V;8V;9V;10V;12V;15V output voltage available

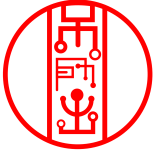
\*Thermal overload protection

\*Short circuit protection

\*Output transistor SOA protection

### BLOCK DIAGRAM





# SK7805U THRU SK7815U

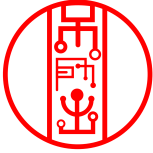
## ABSOLUTE MAXIMUM RATINGS $T_a = 25^\circ\text{C}$

| Characteristic                                          | Symbol    | Value           | Unit             |
|---------------------------------------------------------|-----------|-----------------|------------------|
| Input voltage<br>(for $V_o=5\text{V}$ to $15\text{V}$ ) | $V_i$     | 35              | V                |
| Operating Temperature                                   | $T_{opr}$ | $-40 \sim +125$ | $^\circ\text{C}$ |
| Storage Temperature                                     | $T_{stg}$ | $-65 \sim +150$ | $^\circ\text{C}$ |

## SK7805U ELECTRICAL CHARACTERISTICS

(Refer to test circuits,  $0 < T_j < 125^\circ\text{C}$ ,  $I_o=500\text{mA}$ ,  $V_i=10\text{V}$ ,  $C_i=0.33\mu\text{F}$ ,  $C_o=0.1\mu\text{F}$ , unless otherwise specified)

| Characteristic           | Symbol                | Test Conditions                                                                              | Min  | Typ  | Max  | Units                      |
|--------------------------|-----------------------|----------------------------------------------------------------------------------------------|------|------|------|----------------------------|
| Output voltage           | $V_o$                 | $T_j=25^\circ\text{C}$                                                                       | 4.8  | 5.0  | 5.2  | V                          |
|                          |                       | $5.0\text{mA} < I_o < 1.0\text{A}$ , $P_D < 15\text{W}$<br>$V_i=7.5\text{V}$ to $20\text{V}$ | 4.75 | 5.00 | 5.25 | V                          |
| Line regulation          | $\Delta V_o$          | $T_j=25^\circ\text{C}$ , $V_i=7.5\text{V}$ to $25\text{V}$                                   | -    | 4.0  | 100  | mV                         |
|                          |                       | $T_j=25^\circ\text{C}$ , $V_i=8\text{V}$ to $12\text{V}$                                     | -    | 1.6  | 50   | mV                         |
| Load regulation          | $\Delta V_o$          | $T_j=25^\circ\text{C}$ , $I_o=5.0\text{mA}$ to $1.5\text{A}$                                 | -    | 9    | 100  | mV                         |
|                          |                       | $T_j=25^\circ\text{C}$ , $I_o=250\text{mA}$ to $750\text{mA}$                                | -    | 4    | 50   | mV                         |
| Quiescent current        | $I_Q$                 | $T_j=25^\circ\text{C}$                                                                       | -    | 5.0  | 8    | mA                         |
| Quiescent current change | $\Delta I_Q$          | $I_o=5\text{mA}$ to $1.0\text{A}$                                                            | -    | -    | 0.5  | mA                         |
|                          |                       | $V_i=8\text{V}$ to $25\text{V}$                                                              | -    | -    | 0.8  | mA                         |
| Output voltage drift     | $\Delta V_o/\Delta T$ | $I_o=5\text{mA}$                                                                             | -    | 0.8  | -    | $\text{mV}/^\circ\text{C}$ |
| Output noise voltage     | $V_N$                 | $f=10\text{Hz}$ to $100\text{kHz}$ , $T_a=25^\circ\text{C}$                                  | -    | 42   | -    | $\mu\text{V}/V_o$          |
| Ripple rejection         | RR                    | $f=120\text{Hz}$ , $V_i=8\text{V}$ to $18\text{V}$                                           | 62   | 73   | -    | dB                         |
| Dropout voltage          | $V_o$                 | $I_o=1.0\text{A}$ , $T_j=25^\circ\text{C}$                                                   | -    | 2    | -    | V                          |
| Output resistance        | $R_o$                 | $f=1\text{kHz}$                                                                              | -    | 15   | -    | $\text{m}\Omega$           |
| Short circuit current    | $I_{sc}$              | $V_i=35\text{V}$ , $T_a=25^\circ\text{C}$                                                    | -    | 230  | -    | mA                         |
| peak current             | $I_{pk}$              | $T_j=25^\circ\text{C}$                                                                       | -    | 2.2  | -    | A                          |



# SK7805U THRU SK7815U

## SK7806U ELECTRICAL CHARACTERISTICS

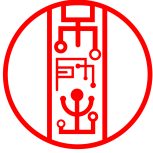
(Refer to test circuits,  $0 < T_j < 125^\circ\text{C}$ ,  $I_o = 500\text{mA}$ ,  $V_i = 11\text{V}$ ,  $C_i = 0.33\mu\text{F}$ ,  $C_o = 0.1\mu\text{F}$ , unless otherwise specified)

| Characteristic           | Symbol                  | Test Conditions                                                                                | Min  | Typ  | Max  | Units                |
|--------------------------|-------------------------|------------------------------------------------------------------------------------------------|------|------|------|----------------------|
| Output voltage           | $V_o$                   | $T_j = 25^\circ\text{C}$                                                                       | 5.75 | 6.00 | 6.25 | V                    |
|                          |                         | $5.0\text{mA} < I_o < 1.0\text{A}$ , $P_D < 15\text{W}$<br>$V_i = 8.5\text{V}$ to $21\text{V}$ | 5.7  | 6.0  | 6.3  | V                    |
| Line regulation          | $\Delta V_o$            | $T_j = 25^\circ\text{C}$ , $V_i = 8.5\text{V}$ to $25\text{V}$                                 | -    | 5    | 120  | mV                   |
|                          |                         | $T_j = 25^\circ\text{C}$ , $V_i = 9\text{V}$ to $13\text{V}$                                   | -    | 1.8  | 60   | mV                   |
| Load regulation          | $\Delta V_o$            | $T_j = 25^\circ\text{C}$ , $I_o = 5.0\text{mA}$ to $1.5\text{A}$                               | -    | 9    | 130  | mV                   |
|                          |                         | $T_j = 25^\circ\text{C}$ , $I_o = 250\text{mA}$ to $750\text{mA}$                              | -    | 4    | 60   | mV                   |
| Quiescent current        | $I_q$                   | $T_j = 25^\circ\text{C}$                                                                       | -    | 5.0  | 8    | mA                   |
| Quiescent current change | $\Delta I_q$            | $I_o = 5\text{mA}$ to $1.0\text{A}$                                                            | -    | -    | 0.5  | mA                   |
|                          |                         | $V_i = 9\text{V}$ to $25\text{V}$                                                              | -    | -    | 0.8  | mA                   |
| Output voltage drift     | $\Delta V_o / \Delta T$ | $I_o = 5\text{mA}$                                                                             | -    | 0.9  | -    | mV/ $^\circ\text{C}$ |
| Output noise voltage     | $V_N$                   | $f = 10\text{Hz}$ to $100\text{kHz}$ , $T_a = 25^\circ\text{C}$                                | -    | 45   | -    | $\mu\text{V}/V_o$    |
| Ripple rejection         | RR                      | $f = 120\text{Hz}$ , $V_i = 9\text{V}$ to $19\text{V}$                                         | 59   | 70   | -    | dB                   |
| Dropout voltage          | $V_o$                   | $I_o = 1.0\text{A}$ , $T_j = 25^\circ\text{C}$                                                 | -    | 2    | -    | V                    |
| Output resistance        | $R_o$                   | $f = 1\text{kHz}$                                                                              | -    | 19   | -    | $\text{m}\Omega$     |
| Short circuit current    | $I_{sc}$                | $V_i = 35\text{V}$ , $T_a = 25^\circ\text{C}$                                                  | -    | 230  | -    | mA                   |
| peak current             | $I_{pk}$                | $T_j = 25^\circ\text{C}$                                                                       | -    | 2.2  | -    | A                    |

## SK7808U ELECTRICAL CHARACTERISTICS

(Refer to test circuits,  $0 < T_j < 125^\circ\text{C}$ ,  $I_o = 500\text{mA}$ ,  $V_i = 14\text{V}$ ,  $C_i = 0.33\mu\text{F}$ ,  $C_o = 0.1\mu\text{F}$ , unless otherwise specified)

| Characteristic           | Symbol                  | Test Conditions                                                                               | Min | Typ | Max | Units                |
|--------------------------|-------------------------|-----------------------------------------------------------------------------------------------|-----|-----|-----|----------------------|
| Output voltage           | $V_o$                   | $T_j = 25^\circ\text{C}$                                                                      | 7.7 | 8.0 | 8.3 | V                    |
|                          |                         | $5.0\text{mA} < I_o < 1.0\text{A}$ , $P_D < 15\text{W}$<br>$V_i = 11\text{V}$ to $23\text{V}$ | 7.6 | 8.0 | 8.4 | V                    |
| Line regulation          | $\Delta V_o$            | $T_j = 25^\circ\text{C}$ , $V_i = 10.5\text{V}$ to $25\text{V}$                               | -   | 5.0 | 160 | mV                   |
|                          |                         | $T_j = 25^\circ\text{C}$ , $V_i = 11\text{V}$ to $17\text{V}$                                 | -   | 2.0 | 80  | mV                   |
| Load regulation          | $\Delta V_o$            | $T_j = 25^\circ\text{C}$ , $I_o = 5.0\text{mA}$ to $1.5\text{A}$                              | -   | 10  | 160 | mV                   |
|                          |                         | $T_j = 25^\circ\text{C}$ , $I_o = 250\text{mA}$ to $750\text{mA}$                             | -   | 5.0 | 80  | mV                   |
| Quiescent current        | $I_q$                   | $T_j = 25^\circ\text{C}$                                                                      | -   | 5.0 | 8   | mA                   |
| Quiescent current change | $\Delta I_q$            | $I_o = 5\text{mA}$ to $1.0\text{A}$                                                           | -   | -   | 0.5 | mA                   |
|                          |                         | $V_i = 11\text{V}$ to $25\text{V}$                                                            | -   | -   | 0.8 | mA                   |
| Output voltage drift     | $\Delta V_o / \Delta T$ | $I_o = 5\text{mA}$                                                                            | -   | 1.2 | -   | mV/ $^\circ\text{C}$ |
| Output noise voltage     | $V_N$                   | $f = 10\text{Hz}$ to $100\text{kHz}$ , $T_a = 25^\circ\text{C}$                               | -   | 52  | -   | $\mu\text{V}/V_o$    |
| Ripple rejection         | RR                      | $f = 120\text{Hz}$ , $V_i = 11.5\text{V}$ to $21.5\text{V}$                                   | 56  | 67  | -   | dB                   |
| Dropout voltage          | $V_o$                   | $I_o = 1.0\text{A}$ , $T_j = 25^\circ\text{C}$                                                | -   | 2   | -   | V                    |
| Output resistance        | $R_o$                   | $f = 1\text{kHz}$                                                                             | -   | 17  | -   | $\text{m}\Omega$     |
| Short circuit current    | $I_{sc}$                | $V_i = 35\text{V}$ , $T_a = 25^\circ\text{C}$                                                 | -   | 230 | -   | mA                   |
| peak current             | $I_{pk}$                | $T_j = 25^\circ\text{C}$                                                                      | -   | 2.2 | -   | A                    |



# SK7805U THRU SK7815U

## SK7809U ELECTRICAL CHARACTERISTICS

(Refer to test circuits,  $0 < T_j < 125^\circ\text{C}$ ,  $I_o = 500\text{mA}$ ,  $V_i = 15\text{V}$ ,  $C_i = 0.33\mu\text{F}$ ,  $C_o = 0.1\mu\text{F}$ , unless otherwise specified)

| Characteristic           | Symbol                  | Test Conditions                                                                                 | Min  | Typ  | Max  | Units                |
|--------------------------|-------------------------|-------------------------------------------------------------------------------------------------|------|------|------|----------------------|
| Output voltage           | $V_o$                   | $T_j = 25^\circ\text{C}$                                                                        | 8.65 | 9.00 | 9.35 | V                    |
|                          |                         | $5.0\text{mA} < I_o < 1.0\text{A}$ , $P_D < 15\text{W}$<br>$V_i = 11.5\text{V}$ to $24\text{V}$ | 8.6  | 9.0  | 9.4  | V                    |
| Line regulation          | $\Delta V_o$            | $T_j = 25^\circ\text{C}$ , $V_i = 11.5\text{V}$ to $25\text{V}$                                 | -    | 6    | 180  | mV                   |
|                          |                         | $T_j = 25^\circ\text{C}$ , $V_i = 12\text{V}$ to $25\text{V}$                                   | -    | 2    | 90   | mV                   |
| Load regulation          | $\Delta V_o$            | $T_j = 25^\circ\text{C}$ , $I_o = 5.0\text{mA}$ to $1.5\text{A}$                                | -    | 12   | 180  | mV                   |
|                          |                         | $T_j = 25^\circ\text{C}$ , $I_o = 250\text{mA}$ to $750\text{mA}$                               | -    | 5    | 90   | mV                   |
| Quiescent current        | $I_q$                   | $T_j = 25^\circ\text{C}$                                                                        | -    | 5.0  | 8    | mA                   |
| Quiescent current change | $\Delta I_q$            | $I_o = 5\text{mA}$ to $1.0\text{A}$                                                             | -    | -    | 0.5  | mA                   |
|                          |                         | $V_i = 12\text{V}$ to $26\text{V}$                                                              | -    | -    | 0.8  | mA                   |
| Output voltage drift     | $\Delta V_o / \Delta T$ | $I_o = 5\text{mA}$                                                                              | -    | 1.3  | -    | mV/ $^\circ\text{C}$ |
| Output noise voltage     | $V_N$                   | $f = 10\text{Hz}$ to $100\text{kHz}$ , $T_a = 25^\circ\text{C}$                                 | -    | 58   | -    | $\mu\text{V}/V_o$    |
| Ripple rejection         | RR                      | $f = 120\text{Hz}$ , $V_i = 13\text{V}$ to $23\text{V}$                                         | 55   | 66   | -    | dB                   |
| Dropout voltage          | $V_o$                   | $I_o = 1.0\text{A}$ , $T_j = 25^\circ\text{C}$                                                  | -    | 2    | -    | V                    |
| Output resistance        | $R_o$                   | $f = 1\text{kHz}$                                                                               | -    | 15   | -    | $\text{m}\Omega$     |
| Short circuit current    | $I_{sc}$                | $V_i = 35\text{V}$ , $T_a = 25^\circ\text{C}$                                                   | -    | 230  | -    | mA                   |
| peak current             | $I_{pk}$                | $T_j = 25^\circ\text{C}$                                                                        | -    | 2.2  | -    | A                    |

## SK7810U ELECTRICAL CHARACTERISTICS

(Refer to test circuits,  $0 < T_j < 125^\circ\text{C}$ ,  $I_o = 500\text{mA}$ ,  $V_i = 16\text{V}$ ,  $C_i = 0.33\mu\text{F}$ ,  $C_o = 0.1\mu\text{F}$ , unless otherwise specified)

| Characteristic           | Symbol                  | Test Conditions                                                                                 | Min | Typ | Max  | Units                |
|--------------------------|-------------------------|-------------------------------------------------------------------------------------------------|-----|-----|------|----------------------|
| Output voltage           | $V_o$                   | $T_j = 25^\circ\text{C}$                                                                        | 9.6 | 10  | 10.4 | V                    |
|                          |                         | $5.0\text{mA} < I_o < 1.0\text{A}$ , $P_D < 15\text{W}$<br>$V_i = 12.5\text{V}$ to $25\text{V}$ | 9.5 | 10  | 10.5 | V                    |
| Line regulation          | $\Delta V_o$            | $T_j = 25^\circ\text{C}$ , $V_i = 12.5\text{V}$ to $25\text{V}$                                 | -   | 8   | 200  | mV                   |
|                          |                         | $T_j = 25^\circ\text{C}$ , $V_i = 13\text{V}$ to $20\text{V}$                                   | -   | 3   | 100  | mV                   |
| Load regulation          | $\Delta V_o$            | $T_j = 25^\circ\text{C}$ , $I_o = 5.0\text{mA}$ to $1.5\text{A}$                                | -   | 12  | 200  | mV                   |
|                          |                         | $T_j = 25^\circ\text{C}$ , $I_o = 250\text{mA}$ to $750\text{mA}$                               | -   | 5   | 100  | mV                   |
| Quiescent current        | $I_q$                   | $T_j = 25^\circ\text{C}$                                                                        | -   | 5.0 | 8    | mA                   |
| Quiescent current change | $\Delta I_q$            | $I_o = 5\text{mA}$ to $1.0\text{A}$                                                             | -   | -   | 0.5  | mA                   |
|                          |                         | $V_i = 13\text{V}$ to $29\text{V}$                                                              | -   | -   | 0.8  | mA                   |
| Output voltage drift     | $\Delta V_o / \Delta T$ | $I_o = 5\text{mA}$                                                                              | -   | 1.4 | -    | mV/ $^\circ\text{C}$ |
| Output noise voltage     | $V_N$                   | $f = 10\text{Hz}$ to $100\text{kHz}$ , $T_a = 25^\circ\text{C}$                                 | -   | 58  | -    | $\mu\text{V}/V_o$    |
| Ripple rejection         | RR                      | $f = 120\text{Hz}$ , $V_i = 14\text{V}$ to $24\text{V}$                                         | 54  | 65  | -    | dB                   |
| Dropout voltage          | $V_o$                   | $I_o = 1.0\text{A}$ , $T_j = 25^\circ\text{C}$                                                  | -   | 2   | -    | V                    |
| Output resistance        | $R_o$                   | $f = 1\text{kHz}$                                                                               | -   | 17  | -    | $\text{m}\Omega$     |
| Short circuit current    | $I_{sc}$                | $V_i = 35\text{V}$ , $T_a = 25^\circ\text{C}$                                                   | -   | 230 | -    | mA                   |
| peak current             | $I_{pk}$                | $T_j = 25^\circ\text{C}$                                                                        | -   | 2.2 | -    | A                    |



# SK7805U THRU SK7815U

## SK7812U ELECTRICAL CHARACTERISTICS

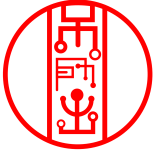
(Refer to test circuits,  $0 < T_j < 125^{\circ}\text{C}$ ,  $I_o = 500\text{mA}$ ,  $V_i = 19\text{V}$ ,  $C_i = 0.33\mu\text{F}$ ,  $C_o = 0.1\mu\text{F}$ , unless otherwise specified)

| Characteristic           | Symbol                  | Test Conditions                                                                                 | Min  | Typ  | Max  | Units                  |
|--------------------------|-------------------------|-------------------------------------------------------------------------------------------------|------|------|------|------------------------|
| Output voltage           | $V_o$                   | $T_j = 25^{\circ}\text{C}$                                                                      | 11.5 | 12.0 | 12.5 | V                      |
|                          |                         | $5.0\text{mA} < I_o < 1.0\text{A}$ , $P_D < 15\text{W}$<br>$V_i = 14.5\text{V}$ to $27\text{V}$ | 11.4 | 12   | 12.6 | V                      |
| Line regulation          | $\Delta V_o$            | $T_j = 25^{\circ}\text{C}$ , $V_i = 14.5\text{V}$ to $30\text{V}$                               | -    | 10   | 240  | mV                     |
|                          |                         | $T_j = 25^{\circ}\text{C}$ , $V_i = 16\text{V}$ to $22\text{V}$                                 | -    | 3    | 120  | mV                     |
| Load regulation          | $\Delta V_o$            | $T_j = 25^{\circ}\text{C}$ , $I_o = 5.0\text{mA}$ to $1.5\text{A}$                              | -    | 12   | 240  | mV                     |
|                          |                         | $T_j = 25^{\circ}\text{C}$ , $I_o = 250\text{mA}$ to $750\text{mA}$                             | -    | 5.0  | 120  | mV                     |
| Quiescent current        | $I_q$                   | $T_j = 25^{\circ}\text{C}$                                                                      | -    | 5.1  | 8    | mA                     |
| Quiescent current change | $\Delta I_q$            | $I_o = 5\text{mA}$ to $1.0\text{A}$                                                             | -    | -    | 0.5  | mA                     |
|                          |                         | $V_i = 15\text{V}$ to $30\text{V}$                                                              | -    | -    | 0.8  | mA                     |
| Output voltage drift     | $\Delta V_o / \Delta T$ | $I_o = 5\text{mA}$                                                                              | -    | 1.7  | -    | mV/ $^{\circ}\text{C}$ |
| Output noise voltage     | $V_N$                   | $f = 10\text{Hz}$ to $100\text{kHz}$ , $T_a = 25^{\circ}\text{C}$                               | -    | 76   | -    | $\mu\text{V}/V_o$      |
| Ripple rejection         | RR                      | $f = 120\text{Hz}$ , $V_i = 15\text{V}$ to $25\text{V}$                                         | 53   | 64   | -    | dB                     |
| Dropout voltage          | $V_o$                   | $I_o = 1.0\text{A}$ , $T_j = 25^{\circ}\text{C}$                                                | -    | 2    | -    | V                      |
| Output resistance        | $R_o$                   | $f = 1\text{kHz}$                                                                               | -    | 18   | -    | $\text{m}\Omega$       |
| Short circuit current    | $I_{sc}$                | $V_i = 35\text{V}$ , $T_a = 25^{\circ}\text{C}$                                                 | -    | 230  | -    | mA                     |
| peak current             | $I_{pk}$                | $T_j = 25^{\circ}\text{C}$                                                                      | -    | 2.2  | -    | A                      |

## SK7815U ELECTRICAL CHARACTERISTICS

(Refer to test circuits,  $0 < T_j < 125^{\circ}\text{C}$ ,  $I_o = 500\text{mA}$ ,  $V_i = 23\text{V}$ ,  $C_i = 0.33\mu\text{F}$ ,  $C_o = 0.1\mu\text{F}$ , unless otherwise specified)

| Characteristic           | Symbol                  | Test Conditions                                                                                 | Min   | Typ  | Max   | Units                  |
|--------------------------|-------------------------|-------------------------------------------------------------------------------------------------|-------|------|-------|------------------------|
| Output voltage           | $V_o$                   | $T_j = 25^{\circ}\text{C}$                                                                      | 14.4  | 15.0 | 15.6  | V                      |
|                          |                         | $5.0\text{mA} < I_o < 1.0\text{A}$ , $P_D < 15\text{W}$<br>$V_i = 17.5\text{V}$ to $30\text{V}$ | 14.25 | 15   | 15.75 | V                      |
| Line regulation          | $\Delta V_o$            | $T_j = 25^{\circ}\text{C}$ , $V_i = 17.5\text{V}$ to $30\text{V}$                               | -     | 11   | 300   | mV                     |
|                          |                         | $T_j = 25^{\circ}\text{C}$ , $V_i = 20\text{V}$ to $26\text{V}$                                 | -     | 3    | 150   | mV                     |
| Load regulation          | $\Delta V_o$            | $T_j = 25^{\circ}\text{C}$ , $I_o = 5.0\text{mA}$ to $1.5\text{A}$                              | -     | 12   | 300   | mV                     |
|                          |                         | $T_j = 25^{\circ}\text{C}$ , $I_o = 250\text{mA}$ to $750\text{mA}$                             | -     | 5    | 150   | mV                     |
| Quiescent current        | $I_q$                   | $T_j = 25^{\circ}\text{C}$                                                                      | -     | 5.2  | 8     | mA                     |
| Quiescent current change | $\Delta I_q$            | $I_o = 5\text{mA}$ to $1.0\text{A}$                                                             | -     | -    | 0.5   | mA                     |
|                          |                         | $V_i = 18\text{V}$ to $30.5\text{V}$                                                            | -     | -    | 0.8   | mA                     |
| Output voltage drift     | $\Delta V_o / \Delta T$ | $I_o = 5\text{mA}$                                                                              | -     | 2.0  | -     | mV/ $^{\circ}\text{C}$ |
| Output noise voltage     | $V_N$                   | $f = 10\text{Hz}$ to $100\text{kHz}$ , $T_a = 25^{\circ}\text{C}$                               | -     | 90   | -     | $\mu\text{V}/V_o$      |
| Ripple rejection         | RR                      | $f = 120\text{Hz}$ , $V_i = 18.5\text{V}$ to $28.5\text{V}$                                     | 51    | 62   | -     | dB                     |
| Dropout voltage          | $V_o$                   | $I_o = 1.0\text{A}$ , $T_j = 25^{\circ}\text{C}$                                                | -     | 2    | -     | V                      |
| Output resistance        | $R_o$                   | $f = 1\text{kHz}$                                                                               | -     | 19   | -     | $\text{m}\Omega$       |
| Short circuit current    | $I_{sc}$                | $V_i = 35\text{V}$ , $T_a = 25^{\circ}\text{C}$                                                 | -     | 230  | -     | mA                     |
| peak current             | $I_{pk}$                | $T_j = 25^{\circ}\text{C}$                                                                      | -     | 2.2  | -     | A                      |



# SK7805U THRU SK7815U

## APPLICATION CIRCUITS

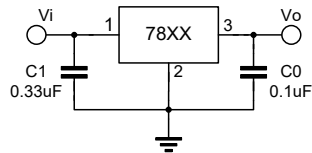


Fig.4 Fixed output regulator

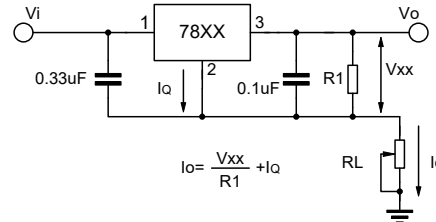


Fig.5 Constant current regulator

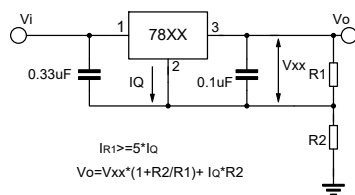


Fig.6 Circuit for increasing Regulator output voltage

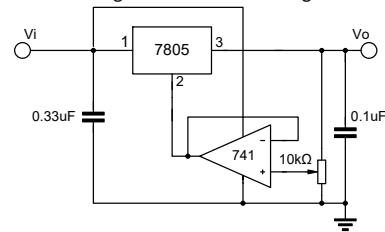


Fig.7 Adjustable output

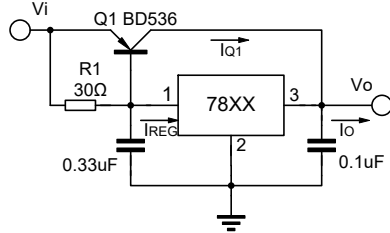


Fig.8 High current with voltage regulator

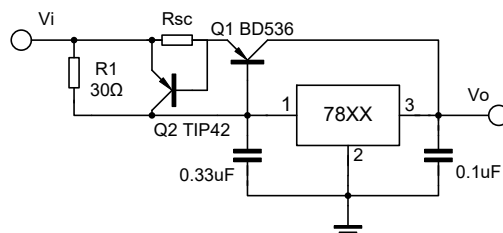


Fig.9 High output current short circuit protection

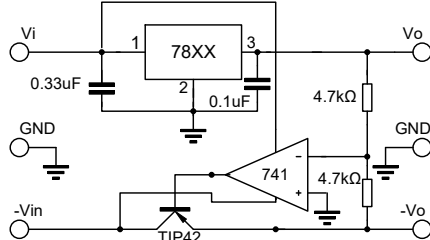


Fig.10 Tracking voltage regulator

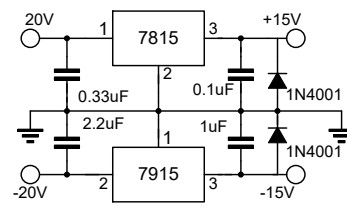


Fig.11 Split power supply(±15V,1A)

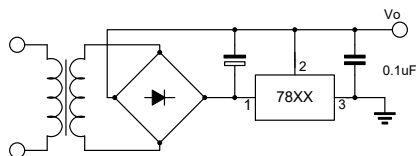


Fig.12 Negative output voltage circuit

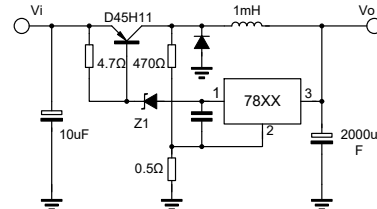
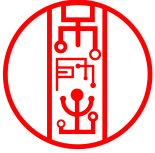


Fig.13 switching regulator



# SK7805U THRU SK7815U

## TEST CIRCUITS

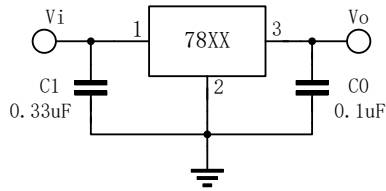


FIG.1 DC PARAMETERS

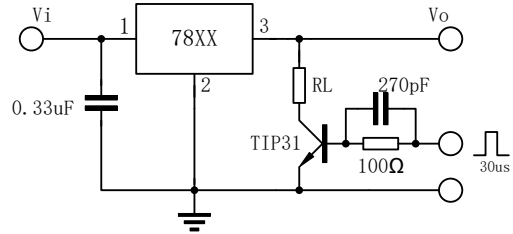


FIG.2 LOAD REGULATION

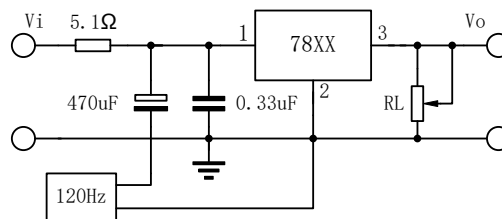
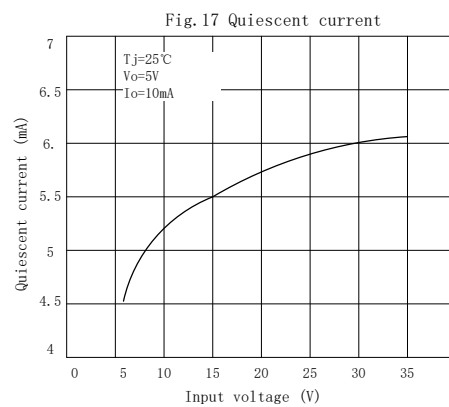
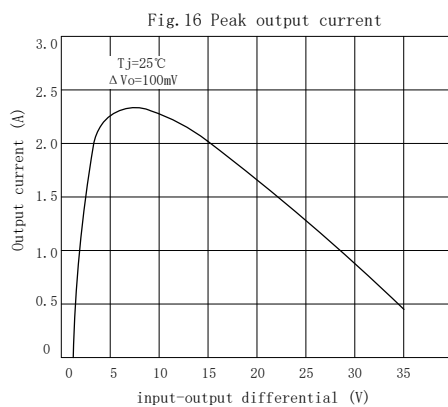
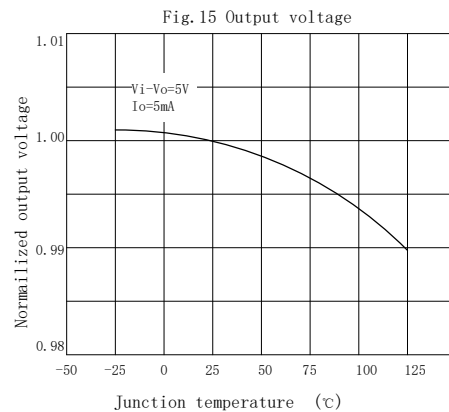
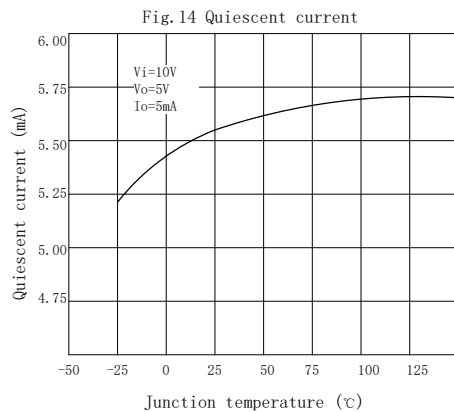
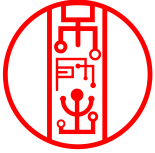


FIG.3 RIPPLE REJECTION

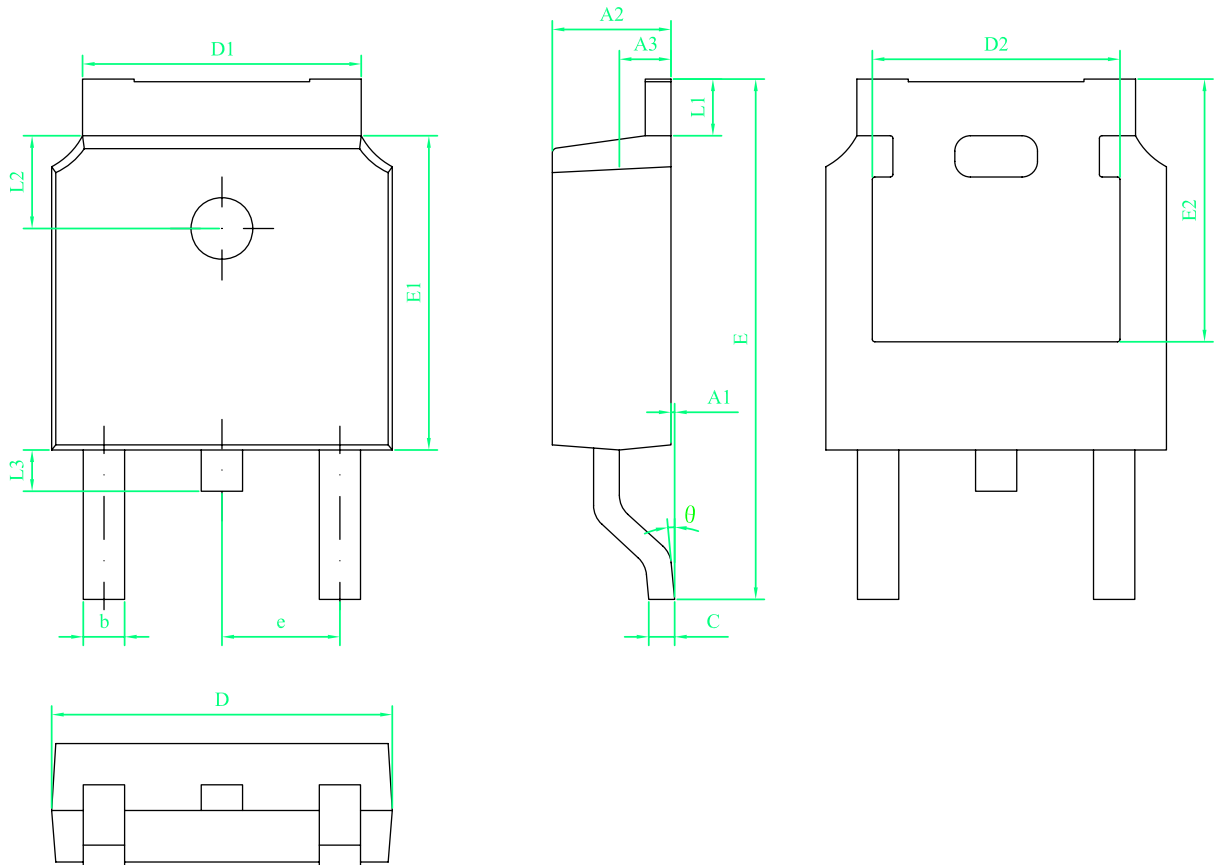
## TYPICAL PERFORMANCE CHARACTERISTICS





# SK7805U THRU SK7815U

## TO-252 PACKAGE OUTLINE DIMENSIONS



| 符号       | 尺寸        |       |
|----------|-----------|-------|
|          | Min       | Max   |
| A1       | 0.00      | 0.13  |
| A2       | 2.18      | 2.39  |
| A3       | 0.90      | 1.10  |
| b        | 0.65      | 0.85  |
| c        | 0.46      | 0.61  |
| D        | 6.35      | 6.73  |
| D1       | 4.95      | 5.46  |
| D2       | 4.32      |       |
| E        | 9.40      | 10.41 |
| E1       | 5.97      | 6.22  |
| E2       | 5.21      |       |
| e        | 2.286 BSC |       |
| L1       | 0.89      | 1.27  |
| L2       | 1.70      | 1.90  |
| L3       | 0.60      | 1.00  |
| $\theta$ | 0.00      | 8.00  |