

|              |   |        |
|--------------|---|--------|
| <b>SANYO</b> | No.2301B  | LA5665 |
|              | <b>Multifunction Multiple Voltage Regulator</b> |        |

**Use**

- . Especially suited for use in micorcomputer-controlled tuners, receivers, preamp and the like

**Functions and Features**

- . Two independent voltage regulators contained in a single chip (15.5V/350mA, 5.6V/100mA)
- . Reset circuit which delivers the reset signal on the positive transition, negative transition of the 5.6V output
- . Muting circuit which detects the 15.5V output and reset output to deliver the muting signal  
(We have the LA5666 whose detection function for reset, muting is provided on the input voltage side.)

**Maximum Ratings at Ta=25°C**

|                             |              |                  |             |    |
|-----------------------------|--------------|------------------|-------------|----|
| Input Voltage               | $V_{IN1,2}$  |                  | 35          | V  |
| Output Current              | $I_{OUT1,2}$ | Internal IC only |             |    |
| Allowable Power Dissipation | $P_{dmax}$   |                  | 1.6         | W  |
| Operating Temperature       | $T_{opr}$    |                  | -30 to +80  | °C |
| Storage Temperature         | $T_{stg}$    |                  | -40 to +125 | °C |

**Operating Conditions at Ta=25°C**

|               |           |                  |           |   |
|---------------|-----------|------------------|-----------|---|
| Input Voltage | $V_{IN1}$ | $I_{OUT1}=200mA$ | 19 to 35  | V |
|               | $V_{IN2}$ | $I_{OUT2}=50mA$  | 8.7 to 35 | V |

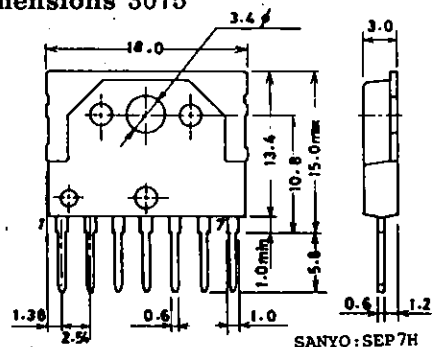
**Operating Characteristics at Ta=25°C,  $V_{IN1}=20V, V_{IN2}=10V$**

|                   |            |                      | min  | typ  | max  | unit |
|-------------------|------------|----------------------|------|------|------|------|
| Quiescent Current | $I_{IN1}$  |                      | 1.8  | 2.8  | 3.8  | mA   |
|                   | $I_{IN2}$  |                      | 3.8  | 5.8  | 7.8  | mA   |
| Output Voltage    | $V_{o1}$   | $I_{OUT1}=200mA$     | 14.5 | 15.5 | 16.5 | V    |
|                   | $V_{o2}$   | $I_{OUT2}=50mA$      | 5.1  | 5.6  | 6.2  | V    |
| Line Regulation   | $V_{ol1}$  | $V_{IN2}=19$ to 27V  |      | 6    | 20   | mV   |
|                   | $V_{ol2}$  | $V_{IN2}=9$ to 18V   |      | 2    | 20   | mV   |
| Load Regulation   | $V_{old1}$ | $I_o=0$ to 350mA     |      | 10   | 30   | mV   |
|                   | $V_{old2}$ | $I_o=0$ to 100mA     |      | 2    | 20   | mV   |
| Ripple Rejection  | $Rr1$      | $f=120Hz, I_o=200mA$ | 56   | 65   |      | dB   |
|                   | $Rr2$      | $f=120Hz, I_o=50mA$  | 60   | 75   |      | dB   |

Continued on next page.

**Package Dimensions 3075**

(unit: mm)

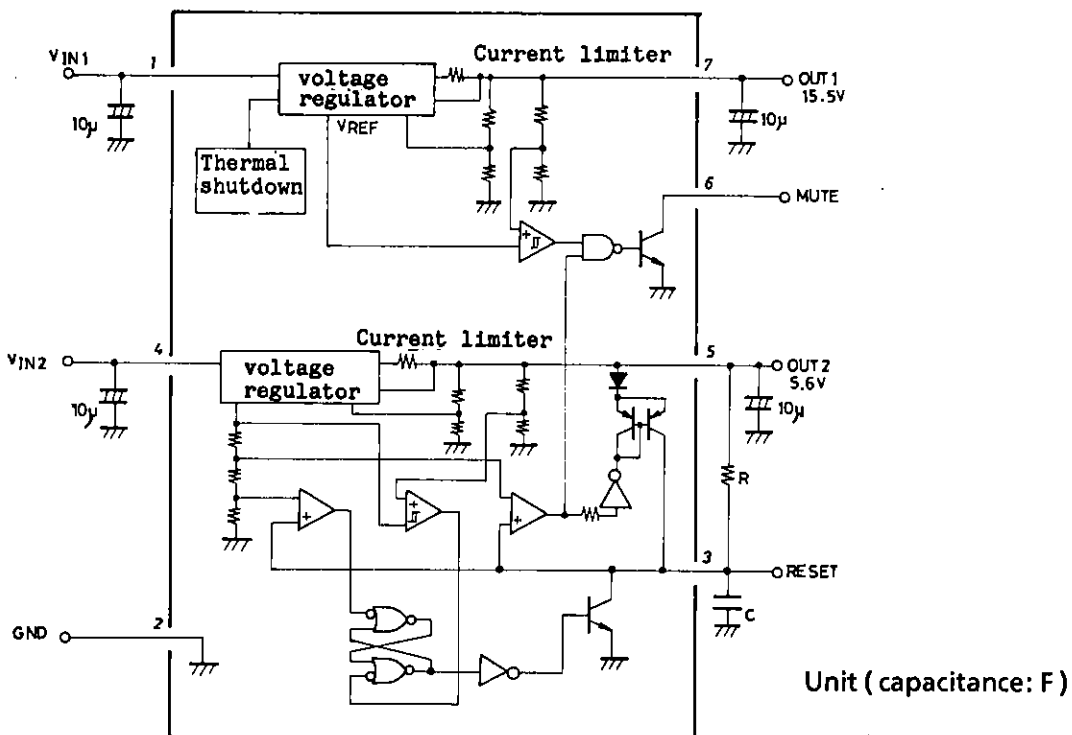


Continued from preceding page.

|                           |                    |                         | min  | typ  | max  | unit |
|---------------------------|--------------------|-------------------------|------|------|------|------|
| Input-Output Voltage Drop | Vdr1               | I <sub>o</sub> =200mA   |      | 1.6  | 2.5  | V    |
|                           | Vdr2               | I <sub>o</sub> =50mA    |      | 1.5  | 2.5  | V    |
| Reset Detect Voltage      | V <sub>R</sub>     | (Note 1)                | 4.9  | 5.1  | 5.5  | V    |
| Timer Compare Voltage     | V <sub>C1</sub>    |                         | 1.0  | 1.2  | 1.4  | V    |
|                           | V <sub>C2</sub>    |                         | 0.06 | 0.13 | 0.18 | V    |
| Timer Input Bias Current  | I <sub>TB</sub>    |                         |      |      | 250  | nA   |
| Muting Detect Voltage     | V <sub>M</sub>     | (Note 2)                | 13.5 | 14.5 | 15.5 | V    |
| Muting Output Voltage     | V <sub>OMUTE</sub> | I <sub>OMUTE</sub> =5mA |      | 0.1  | 0.15 | V    |

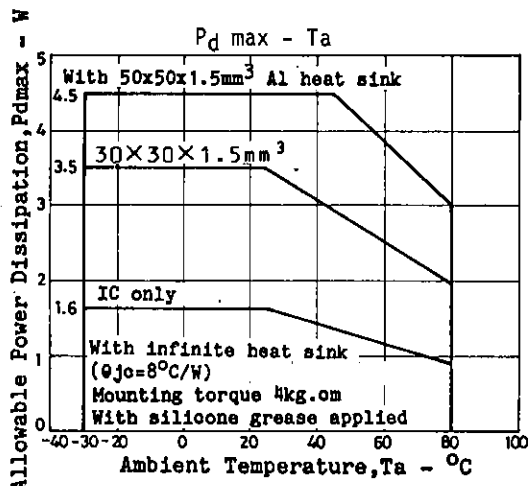
Note 1: V<sub>R</sub> is the voltage of V<sub>O2</sub> at the time reset is turned OFF.  
 Note 2: V<sub>M</sub> is the voltage of V<sub>O1</sub> at the time muting is turned OFF.

**Equivalent Circuit Block Diagram, Pin Assignment, and Peripheral Circuit**

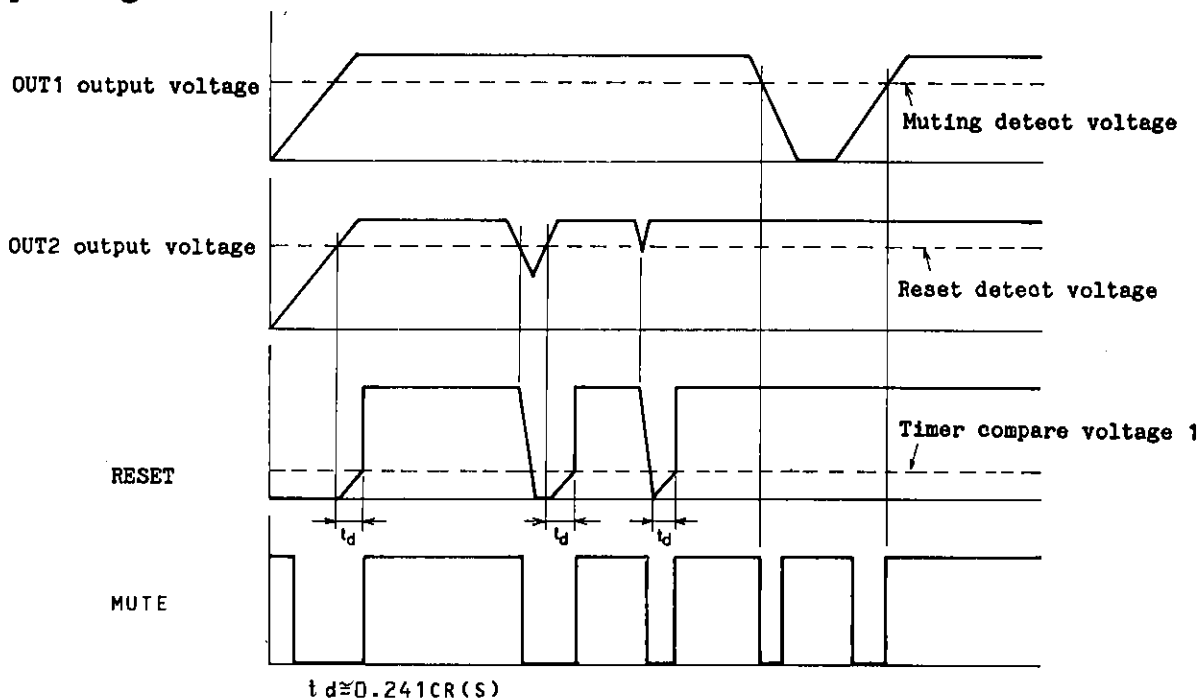


(Note) The reset delay time is set by R, C.

| Pin No. | Name             | Description                     |
|---------|------------------|---------------------------------|
| 1       | V <sub>IN1</sub> | Input pin for 15.5V output line |
| 2       | GND              | Ground                          |
| 3       | RESET            | Reset delay time and output pin |
| 4       | V <sub>IN2</sub> | Input pin for 5.6V output line  |
| 5       | OUT2             | 5.6V output pin                 |
| 6       | MUTE             | Muting signal output pin        |
| 7       | OUT1             | 15.5V output pin                |



Operating Waveforms



■ No products described or contained herein are intended for use in surgical implants, life-support systems, aerospace equipment, nuclear power control systems, vehicles, disaster/crime-prevention equipment and the like, the failure of which may directly or indirectly cause injury, death or property loss.

■ Anyone purchasing any products described or contained herein for an above-mentioned use shall:

- ① Accept full responsibility and indemnify and defend SANYO ELECTRIC CO., LTD., its affiliates, subsidiaries and distributors and all their officers and employees, jointly and severally, against any and all claims and litigation and all damages, cost and expenses associated with such use;
- ② Not impose any responsibility for any fault or negligence which may be cited in any such claim or litigation on SANYO ELECTRIC CO., LTD., its affiliates, subsidiaries and distributors or any of their officers and employees jointly or severally.

■ Information (including circuit diagrams and circuit parameters) herein is for example only; it is not guaranteed for volume production. SANYO believes information herein is accurate and reliable, but no guarantees are made or implied regarding its use or any infringements of intellectual property rights or other rights of third parties.