Ordering number:ENN2301B

Monolithic Linear IC

# LA5665

## Multifunction Multiple Voltage Regulator

## Overview

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

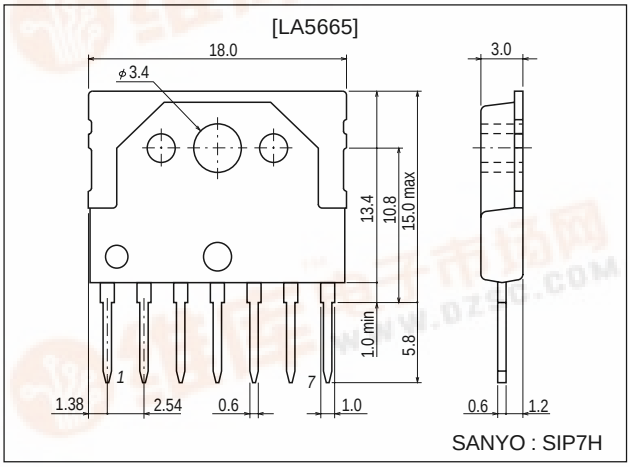
## Features

• 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).

## Package Dimensions

unit:mm

3075-SIP7H




## Specifications

### Maximum Ratings at Ta = 25˚C

| Parameter | Symbol | Conditions | Ratings | Unit |
|---|---|---|---|---|
| Input voltage | $V_{IN}$1, 2 | | 35 | V |
| Output current | $I_{OUT}$1, 2 | Internal | | |
| Allowable power dissipation | Pd max | IC only | 1.6 | W |
| Operating temperature | Topr | | –30 to +80 | ˚C |
| Storage temperature | Tstg | | –40 to +125 | ˚C |

### Operating Conditions at Ta = 25˚C

| Parameter | Symbol | Conditions | Ratings | Unit |
|---|---|---|---|---|
| Input voltage | $V_{IN}$1 | $I_{OUT}$1=200mA | 19 to 35 | V |
| | $V_{IN}$2 | $I_{OUT}$2=50mA | 8.7 to 35 | V |

### Operating Characteristics at Ta = 25˚C, $V_{IN}$1=20V, $V_{IN}$2=10V

| Parameter | Symbol | Conditions | Ratings | | | Unit |
|---|---|---|---|---|---|---|
| | | | min | typ | max | |
| Quiescent current | $I_{IN}$1 | | 1.8 | 2.8 | 3.8 | mA |
| | $I_{IN}$2 | | 3.8 | 5.8 | 7.8 | mA |
| Output voltage | $V_O$1 | $I_{OUT}$1=200mA | 14.5 | 15.5 | 16.5 | V |
| | $V_O$2 | $I_{OUT}$2=50mA | 5.1 | 5.6 | 6.2 | V |

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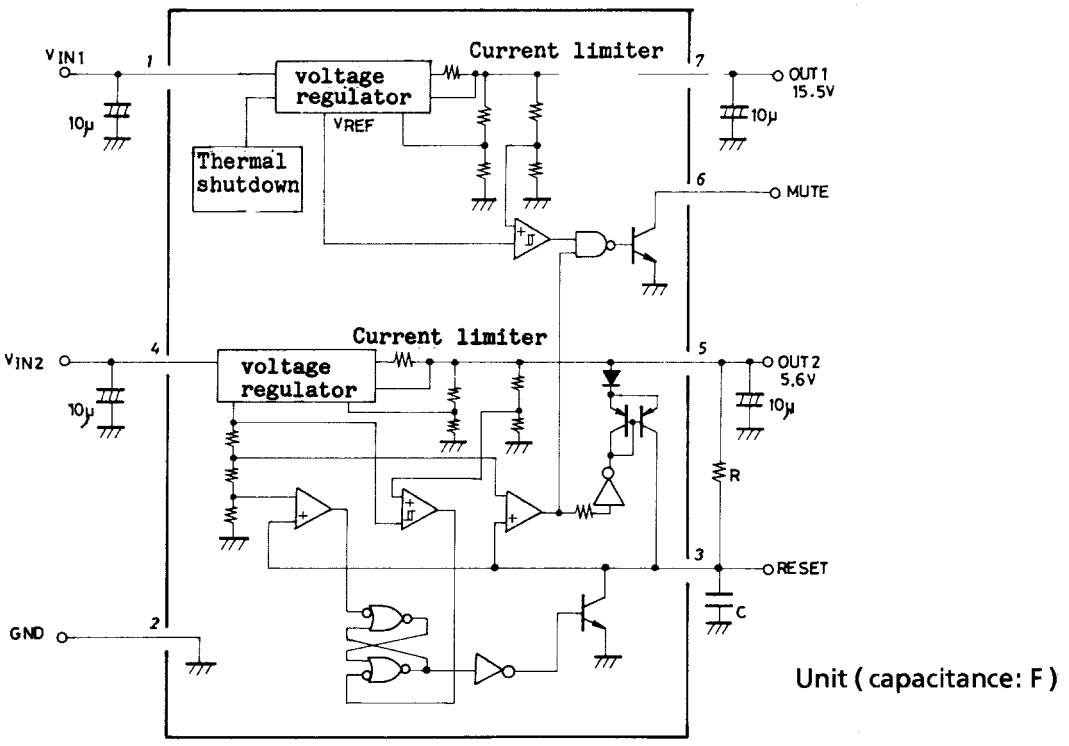
| Parameter | Symbol | Conditions | Ratings | | | Unit |
|---|---|---|---|---|---|---|
| | | | min | typ | max | |
| Line regulation | $V_{ol}1$ | $V_{IN}2$=19 to 27V | | 6 | 20 | mV |
| | $V_{ol}2$ | $V_{IN}2$=9 to 18V | | 2 | 20 | mV |
| Load regulation | $V_{old}1$ | $I_O$=0 to 350mA | | 10 | 30 | mV |
| | $V_{old}2$ | $I_O$=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 |
| Input-output voltage drop | Vdr1 | $I_O$=200mA | | 1.6 | 2.5 | V |
| | Vdr2 | $I_O$=50mA | | 1.5 | 2.5 | V |
| Reset detect voltage | $V_R$ | (Note 1) | 4.9 | 5.1 | 5.5 | V |
| Timer compare voltage | $V_C1$ | | 1.0 | 1.2 | 1.4 | V |
| | $V_C2$ | | 0.06 | 0.13 | 0.18 | V |
| Timer input bias current | $I_{TB}$ | | | | 250 | nA |
| Muting detect voltage | $V_M$ | (Note 2) | 13.5 | 14.5 | 15.5 | V |
| Muting output voltage | $V_{OMUTE}$ | $I_{OMUTE}$=5mA | | 0.1 | 0.15 | V |

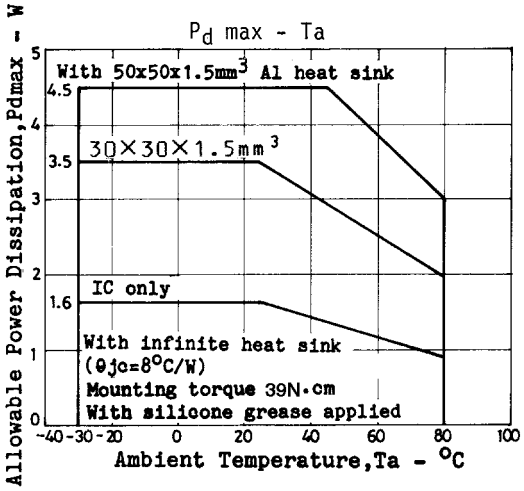
Note 1 : $V_R$ is the voltage of $V_O2$ at the time reset is turned OFF.
Note 2 : $V_M$ is the voltage of $V_O1$ at the time muting is turned OFF.

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




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

| Pin No. | Name | Description |
|---|---|---|
| 1 | $V_{IN}1$ | Input pin for 15.5V output line |
| 2 | GND | Ground |
| 3 | RESET | Reset delay time and output pin |
| 4 | $V_{IN}2$ | 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