

2-output LDO series regulator BA33C18FP/HFP

● Description

BA33C18FP/HFP is a 2-output LDO series regulator IC. Output current is 1A at maximum and output voltage accuracy is +/-2%. This IC incorporates over-current protection and thermal protection circuits.

● Features

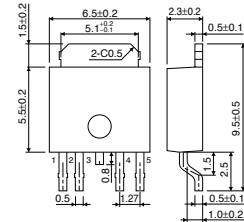
- 1) 3.3V/1A, 1.8V/1A
- 2) Output voltage accuracy: +/-2%
- 3) PNP output and LDO voltage type
- 4) Built-in output current limit circuit protects the IC from destruction by short
- 5) Built-in temperature protection circuit protects the IC from thermal destruction by overload state
- 6) TO252-5 package, HRP-5 package

● Applications

DVD-ROM, DVD-RW, HDD

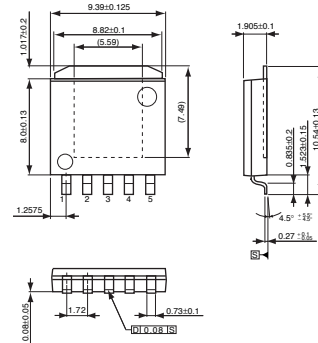
● Dimension (Unit : mm)

BA33C18FP



TO252-5

BA33C18HFP



HRP-5

● Absolute Maximum Ratings (Ta=25°C)

| Parameter | Symbol | Limits | Unit |
|-----------------------------|------------------|--------------------|------|
| Applied voltage | V _{CC} | 18 | V |
| Power dissipation | P _d | 2300 ^{*1} | mW |
| Operating temperature range | T _{opr} | -40 ~ +105 | °C |
| Storage temperature range | T _{stg} | -55 ~ +150 | °C |

*1 Derating : 18.4mW/°C for operation above Ta ≥ 25°C
PCB (70mmx70mm, t=1.6mm) glass epoxy mounting. (Thermal via on the board.)
(Board surface copper foil area: 10.5mmX10.5mm)
(2 layer board (Back copper foil area: 15mmX15mm))

● Recommended Operating Conditions (Ta=25°C)

| Parameter | Symbol | Min. | Typ. | Max. | Unit |
|----------------------|-----------------|------|------|------|------|
| Input supply voltage | V _{CC} | 4.1 | - | 16.0 | V |
| 3.3V output current | I _{o1} | - | - | 1 | A |
| 1.8V output voltage | I _{o2} | - | - | 1 | A |

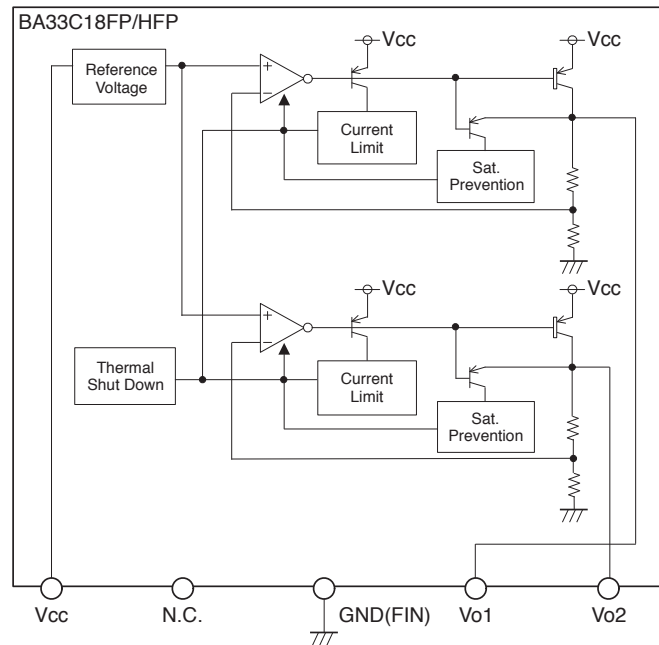
● Electrical characteristics (Unless otherwise noted; Ta=25°C, Vcc=5V)

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Conditions |
|---|--------------|-------|-------|-------|--------|-------------------------------|
| Bias current | Ib | – | 0.8 | 1.5 | mA | Io1=0mA, Io2=0mA |
| <3.3V output> | | | | | | |
| Output voltage 1 | Vo1 | 3.234 | 3.3 | 3.366 | V | Io1=500mA |
| Min. I/O voltage difference 1 | $\Delta Vd1$ | – | 0.25□ | 0.50 | V | Io1=500mA, Vcc=3.135V |
| Output current capacity 1 | Io1 | 1.0 | – | – | A | |
| Ripple rejection 1 | R.R. 1 | 50 | 58 | – | dB | f=120Hz, ein=1Vrms, Io1=200mA |
| Input stability 1 | Reg.I1 | – | 5 | 30 | mV | Vcc=4.1 → 16V, Io1=500mA |
| Load stability 1 | Reg.L1 | – | 30 | 75 | mV | Io1=0mA → 1A |
| Output voltage temperature coefficient 1 *2 | Tcvo1 | – | ±0.01 | – | % / °C | Io1=5mA, Tj=0~125°C |
| Output short current 1 | Ios1 | – | 300 | – | mA | Vcc=16V |
| <1.8V output> | | | | | | |
| Output voltage 2 | Vo2 | 1.764 | 1.8 | 1.836 | V | Io2=500mA |
| Output current capacity 2 | Io2 | 1.0 | – | – | A | |
| Ripple rejection 2 | R.R. 2 | 50 | 58 | – | dB | f=120Hz, ein=1Vrms, Io2=200mA |
| Input stability 2 | Reg.I2 | – | 5 | 30 | mV | Vcc=4.1 → 16V, Io2=500mA |
| Load stability 2 | Reg.L2 | – | 30 | 75 | mV | Io2=0mA → 1A |
| Output voltage temperature coefficient 2 *2 | Tcvo2 | – | ±0.01 | – | % / °C | Io1=5mA, Tj=0~125°C |
| Output short current 2 | Ios2 | – | 270 | – | mA | Vcc=16V |

*This product is not designed for protection against radioactive rays.

*2 Design guaranteed (All total inspection is not performed.)

● Block Diagram



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