

Features

- ◆ Up to 1A Max Output Current
- ◆ 2.7V to 5.5V Input Voltage Range
- ◆ Fixed 1.5MHz Switching Frequency
- ◆ Light Load Operation
- ◆ 100% Duty Operation
- ◆ Internal Compensation
- ◆ Available in SOT23-5
- ◆ RoHS Compliant and Halogen Free

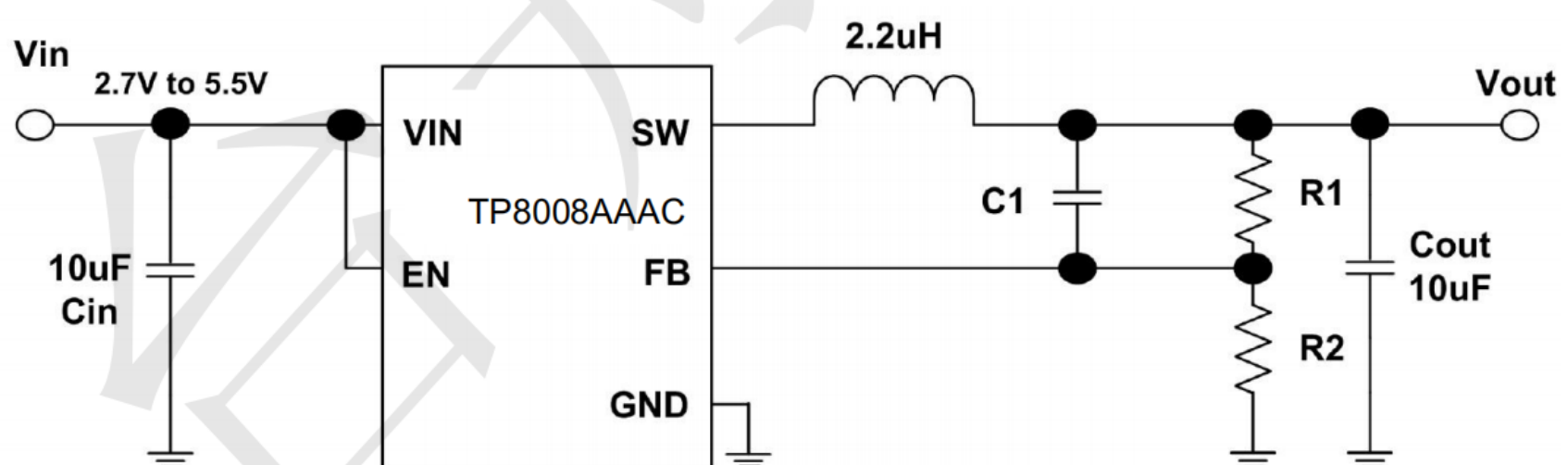
Applications

- ◆ USB ports/Hubs
- ◆ Hot Swaps
- ◆ Cell phones
- ◆ Tablet PC
- ◆ Set Top Boxes

General Description

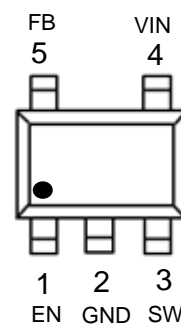
TP8008A is a high-efficiency DC to DC step down switching regulator, capable of delivering up to 1A output current. The TP8008A operates in a wide range input voltage from 2.7V to 5.5V making the IC ideal for low voltage power conversions. Running at a fixed frequency of 1.5MHz allows the use of small inductance value and low DCR inductors, thereby achieving higher efficiency.

TYPICAL APPLICATION



PIN CONFIGURATION

TP8008AAAC



SOT23-5

| Pin Num | Pin Name | Description |
|---------|----------|--|
| 1 | EN | Turns on/turns off control input |
| 2 | GND | Power ground pin |
| 3 | SW | Inductor pin. Connect this pin to the switching node of inductor |
| 4 | VIN | Power input pin |
| 5 | FB | Output feedback pin |

Marking:



A1=Device code
xy=Date Code

Absolute Maximum Rating (T =25°C unless otherwise noted)

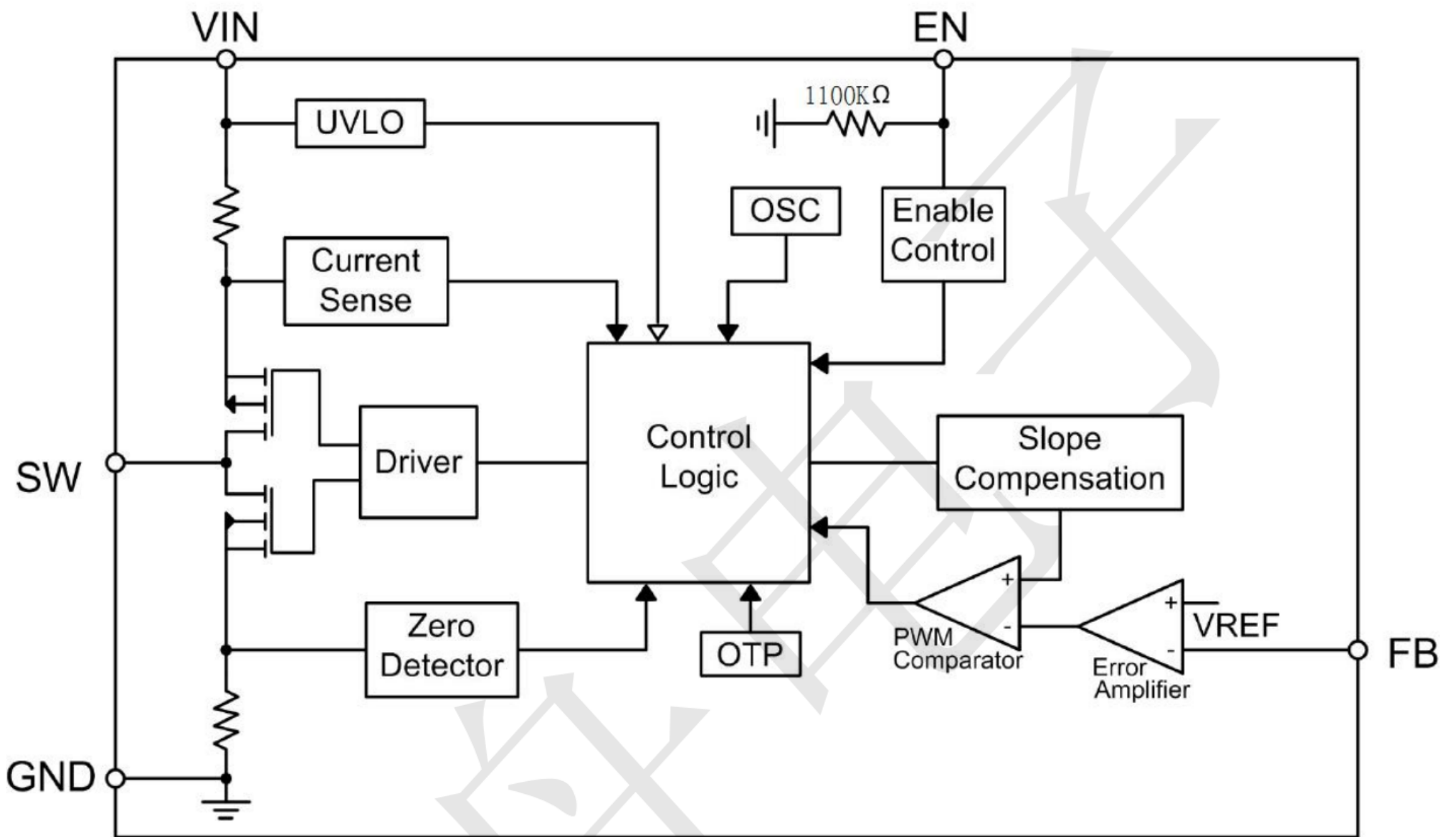
| Parameter | Value |
|--|------------|
| Max Input Voltage | 6V |
| Max Voltage All Pins | 6V |
| Max Operating Junction Temperature(Tj) | 125°C |
| Ambient Temperature(Ta) | -40°C~85°C |
| Maximum Power Dissipation SOT23-5 | 400mW |
| Storage Temperature(Ts) | -40°C~50°C |
| Lead Temperature & Time | 260°C, 10S |

Electrical Characteristics

($V_{IN}=5V$, $T_A = 25^{\circ}C$ unless otherwise specified)

| Parameters | Condition | Min | Typ | Max | Units |
|---------------------------------------|---------------------------------|-------|------|-------|-------------|
| Input Voltage | | 2.7 | | 5.5 | V |
| UVLO Threshold | | | 2.5 | | V |
| UVLO Hysteresis | | | 0.15 | | V |
| Quiescent Current | $V_{FB} = 0.7V$ | | 40 | | μA |
| Shutdown Supply Current | $V_{EN} = 0V$ | | | 1 | μA |
| Reference Voltage | $V_{IN} = 2.7$ to $5.5V$ | 0.591 | 0.6 | 0.609 | V |
| Reference Current | | | 0.01 | | μA |
| Maximum Duty | | 100 | | | % |
| Switching Frequency | | | 1.5 | | MHz |
| Short Switching Frequency | | | 380 | | KHz |
| Internal Soft-Start Time | | | 1 | | ms |
| High Side MOSFET On-Resistance | | | 150 | | m Ω |
| Low Side MOSFET On-Resistance | | | 130 | | m Ω |
| High Side MOSFET Current Limit | | | 2.4 | | A |
| High Side MOSFET Leakage Current | $V_{IN} = 5V$, $V_{FB} = 0.7V$ | | | 10 | μA |
| EN Pin Pull-Low Resistance | | | 950 | | K Ω |
| EN Pin Input Low Voltage | | | | 0.4 | V |
| EN Pin Input High Voltage | | 1.5 | | | V |
| Power Good Rising | | | 93 | | % |
| Power Good Falling | | | 88 | | % |
| Output Discharge Switch On Resistance | $V_{EN} = 0V$ | | 60 | | Ω |
| Thermal Shutdown Temperature | | | 160 | | $^{\circ}C$ |

BLOCK DIAGRAM



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