

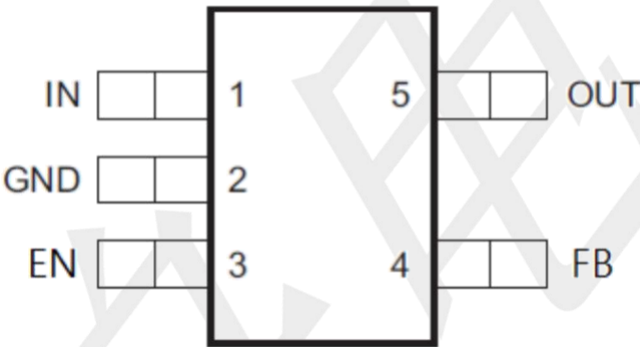
Features

- VIN Range up to 120V
- Output Voltage Tolerances of $\pm 1.5\%$
- Output Current of 50mA
- Low Quiescent Current 23uA
- Quiescent Current at Shutdown 8uA
- Internal Thermal Overload Protection
- Internal Short - Circuit Current Limit

Applications

- Industrial Automation
- Telecom Infrastructure
- Power over Ethernet(PoE)
- LED Lighting
- Microprocessors, Microcontrollers Powered by Industrial Busses With High Voltage Transients

PIN CONFIGURATION



SOT23-5(TOP VIEW)

Pin Number	Pin Name	Pin Function
1	VIN	Input of Supply Voltage.
2	GND	Ground Pin.
3	EN	Enable Control Input.
4	FB	Feedback
5	VOUT	Output of the Regulator

Absolute Maximum Ratings over operating free-air temperature range (unless otherwise noted)

SYMBOL	PARAMETER	RATINGS	UNIT
VIN	Continuous input voltage range	0.3 to +120	V
VEN	Enable Input Voltage	0.3 to VIN	V
FB	Feedback	0.3 to 5.5	V
TL	Lead Temperature (Soldering, 10 sec.)	300	°C
TJ	Junction Temperature	+150	°C
TS	Storage Temperature	-65 ~ +150	°C

Operating Ratings

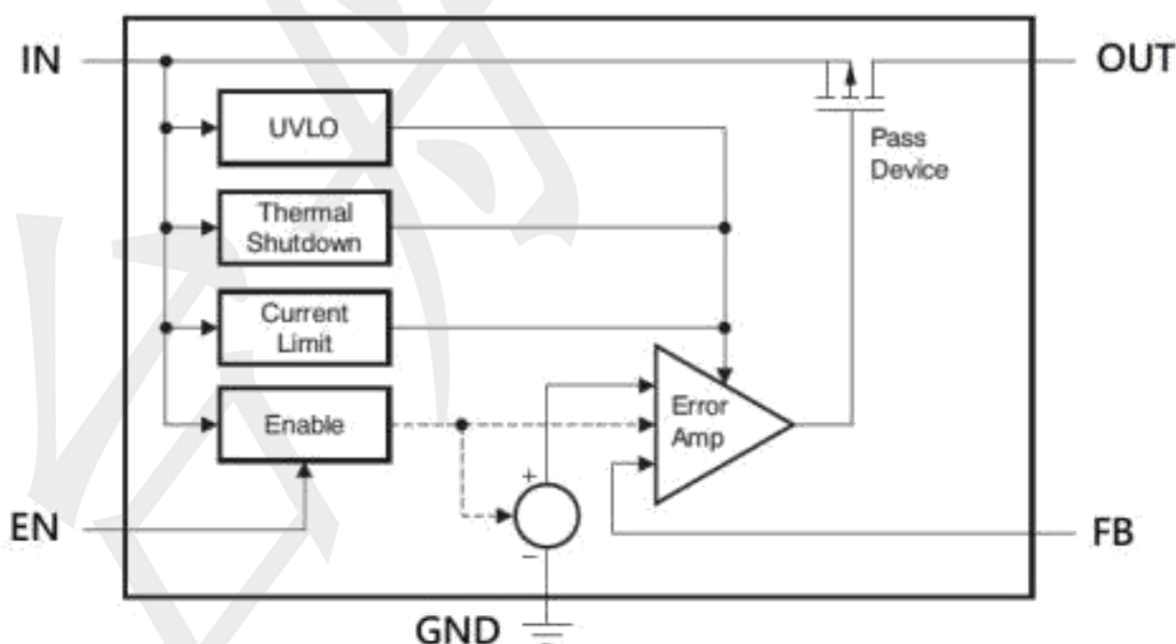
PARAMETER	SYMBOL	RATINGS	UNIT
Maximum Operating Input Voltage	VIN	+7.0V to +100V	V
Operating Junction Temperature	TJ	-40 ~ +125	°C

Notice: Stresses above those listed under “Absolute Maximum Ratings” may cause permanent damage to the device.

This is a stress rating only and functional operation of the device at those or any other conditions above those indicated in the operational sections of this specification is not intended. Exposure to maximum rating conditions for extended periods may affect device reliability.

Notice: The device is not guaranteed to function outside its operating ratings.

BLOCK DIAGRAM

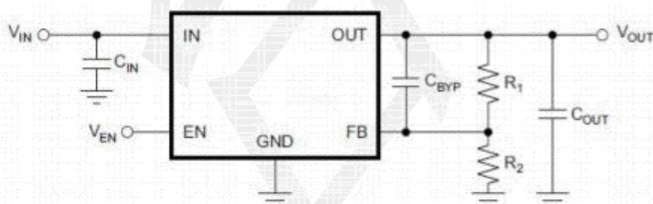


Electrical Characteristics

$V_{IN}=V_{OUT} + 3V$ or $V_{IN}=7V$ (whichever is greater), $I_{OUT}=100\mu A$, $C_{IN}=1\mu F$, $C_{OUT}=4.7\mu F$, $T_J=25^\circ C$, unless otherwise specified

Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
Input Voltage	V_{IN}		7	--	100	V
Internal Reference	V_{REF}		0.788	0.8	0.812	V
Line Regulation	ΔV_{LINE}	$V_{IN}=7V$ to 100V,	--	3	20	mV
Load Regulation	ΔV_{LOAD}	$100\mu A < I_{OUT} < 50mA$	--	20	50	mV
Dropout Voltage	V_{DROP}	$I_{OUT}=20mA$	--	1000	--	mV
		$I_{OUT}=50mA$	--	2800	--	mV
Quiescent Current	I_Q	$I_{OUT} = 0mA$	--	23	40	μA
Shutdown Current	I_{SD}	$V_{EN} = 0V$	--	8	15	μA
Current Limit	I_{CL}	$V_{OUT} = 90\% V_{OUT(NOM)}$	55	120	200	mA
Enable High Low Level	V_{ENHI}		1.0	--	V_{IN}	V
	V_{ENLO}		0	--	0.4	V
Enable Pin Current	I_{EN}	$7V < V_{IN} < 100V$, $V_{IN}=V_{EN}$	--	0.02	1	μA
Feedback Pin Current	I_{FB}		--	0.01	0.11	μA
Thermal Shutdown	T_{SD}	Shutdown, emperature increasing	--	160	--	$^\circ C$
		Reset, temperature decreasing	--	140	--	$^\circ C$

Typical Application Circuit



Ceramic Capacitor Stable

Vout (V)	Cin (uF)	Cout(uF)	*Cbypass(nF)	R1 (Kohm)	R2 (Kohm)
12	10	10	10	698	49.9
5	10	10	10	262	49.9
3.3	10	10	10	156	49.9
1.8	10	10	10	62.5	49.9

Typical Characteristics

$V_{IN}=12V$, $V_{OUT}=5V$ $I_{OUT}=1mA$, $C_{IN}=0.47\mu F$, $C_{OUT}=2.2\mu F$, $T_J=25^\circ C$, unless otherwise specified

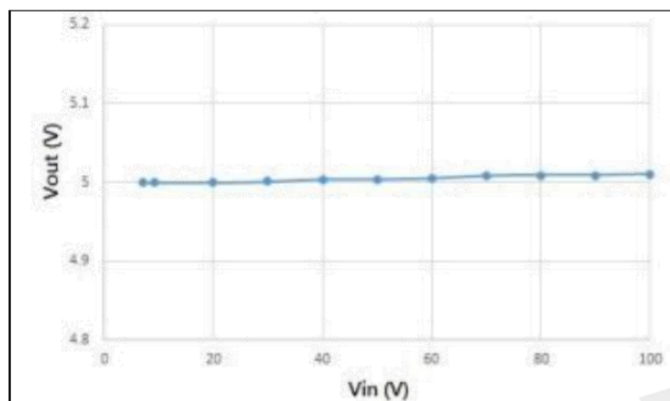


Fig1 V_{out} vs V_{in}

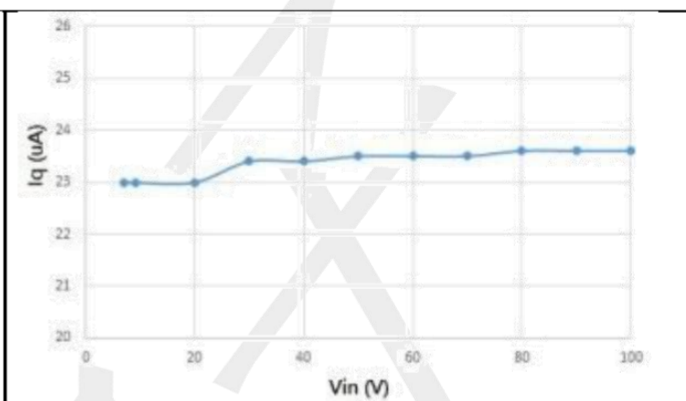


Fig2 I_q vs V_{in}

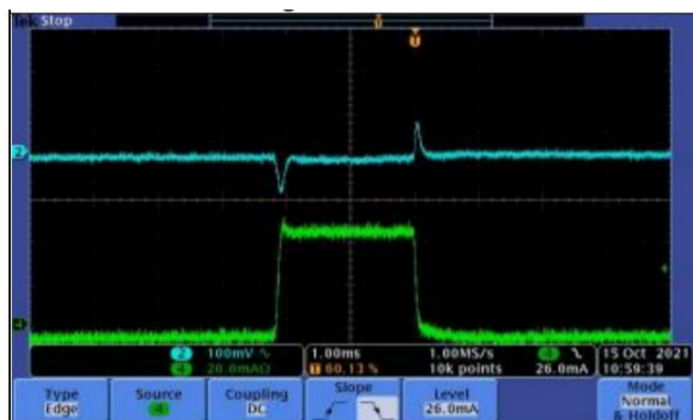


Fig3 Load transient 0 to 50mA

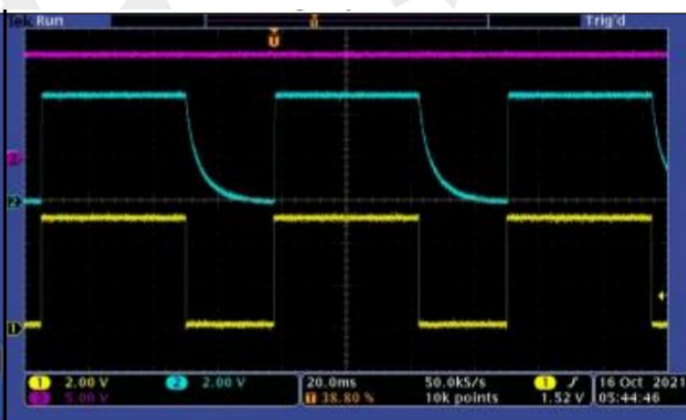


Fig4 Enable ON/OFF

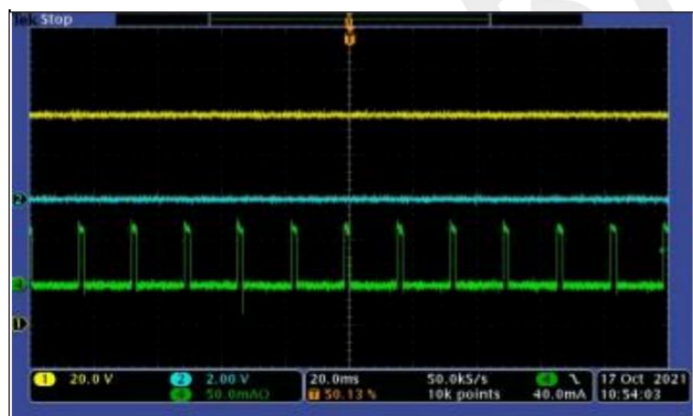


Fig5 $V_{IN}=100V$, V_{OUT} short to GND

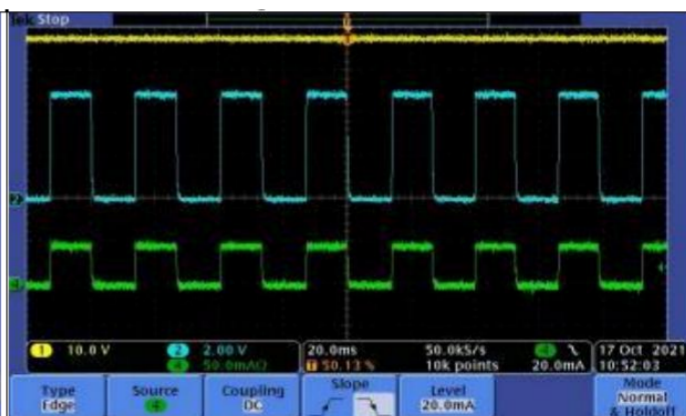
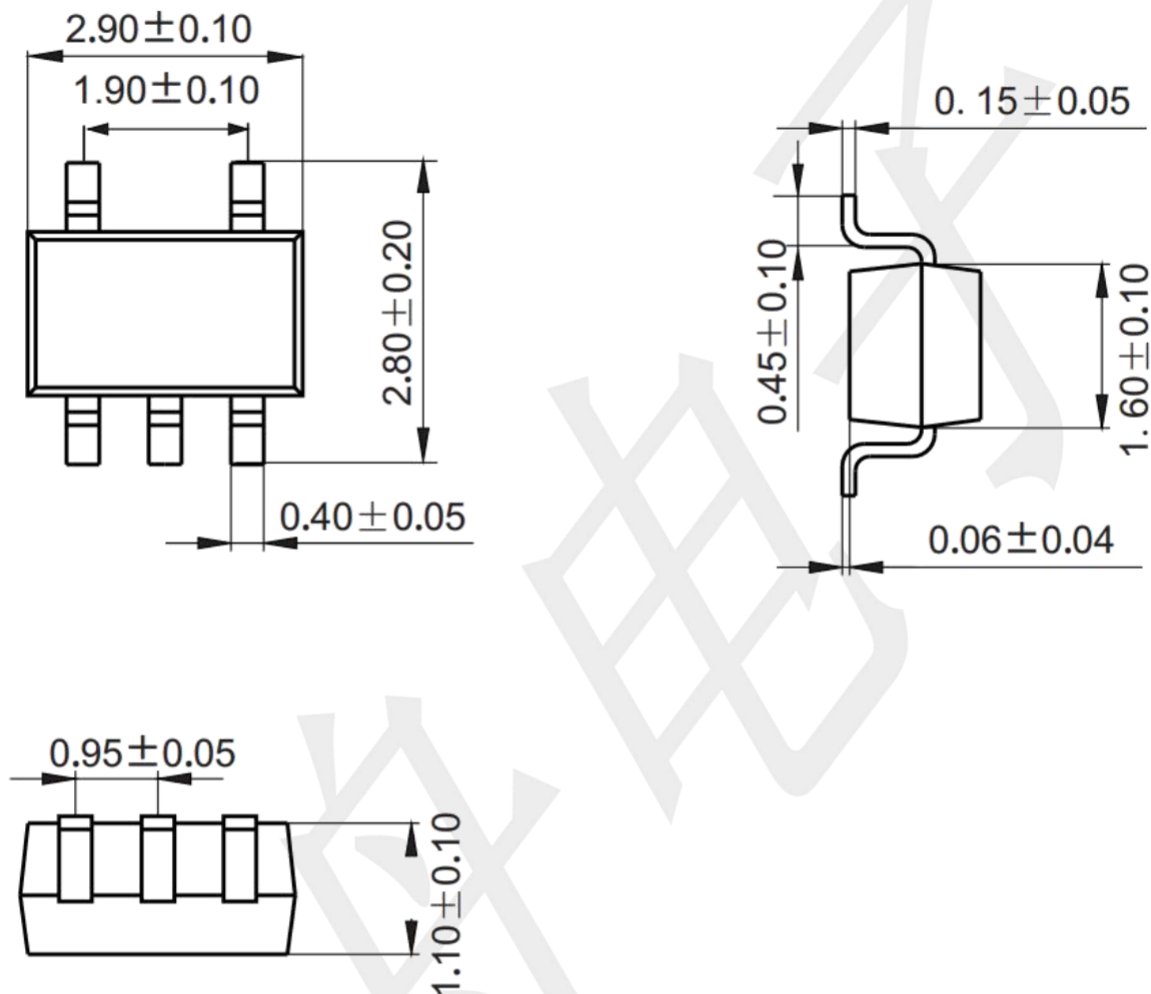


Fig6 $V_{IN}=36V$, $V_{OUT}=5V$, $R_{LOAD}=100\Omega$, thermal protect

Package information (unit: mm)

SOT23-5



Mounting Pad Layout (unit: mm)

