HTSW6070H

7V / 6A Radiation Resistant Hardened Electronic Fuse, Load Switch

Features

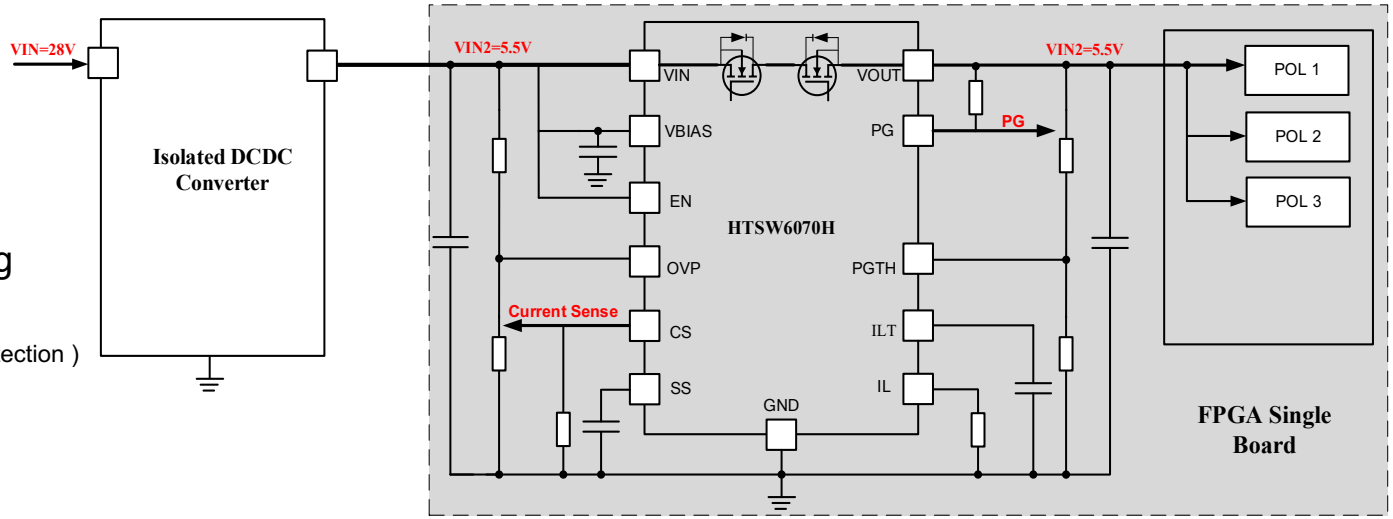
- Operating Voltage Range: VBIAS: 3.0V - 7.0V , PVIN: 0.95V - 7V
- 23mΩ RON on-resistance
- 0.6A to 6A Adjustable Current Limit (10% Accuracy at 6A)
- CS output current detection accuracy (6A accuracy ±10%)
- Dual-channel parallel current limit up to 12A
- Over-power protection function (exclusive feature)
- Input overvoltage and undervoltage protection function, ±2% overvoltage and undervoltage threshold accuracy
- Reverse current blocking, 10μs reverse voltage turn-off time
- Programmable dVo /dt control time
- Programmable overcurrent protection time ILT
- Power Good and Fault Output PG
- Wide Temperature Range: –55°C to +125°C
- CFP20 ceramic package (7.45x12.8mm ^{2})
- Total dose (TID): 100krad(Si), anti-single event latch-up (SEL): 75 MeV·cm ^{2} /mg

Application Scenario

- Radiation-resistant hardened electronic fuse, aerospace load current-limiting switch (SEL protection)
- Input surge suppression, no instantaneous surge to the pre-stage bus
- Load long-term short-circuit protection, control the upper limit of load heat consumption
- Start-up control when the load is large and the input capacitance is large, to avoid too long SS

Product advantages :

- Current limiting protection, voltage monitoring, over-power protection, to ensure that the load device and HTSW6070H itself are always in the safe working area
- Suppresses the surge current when starting up , and does not bring instantaneous surge to the pre-stage bus
- Input voltage OVP protection
- Control the upper limit of load heat consumption



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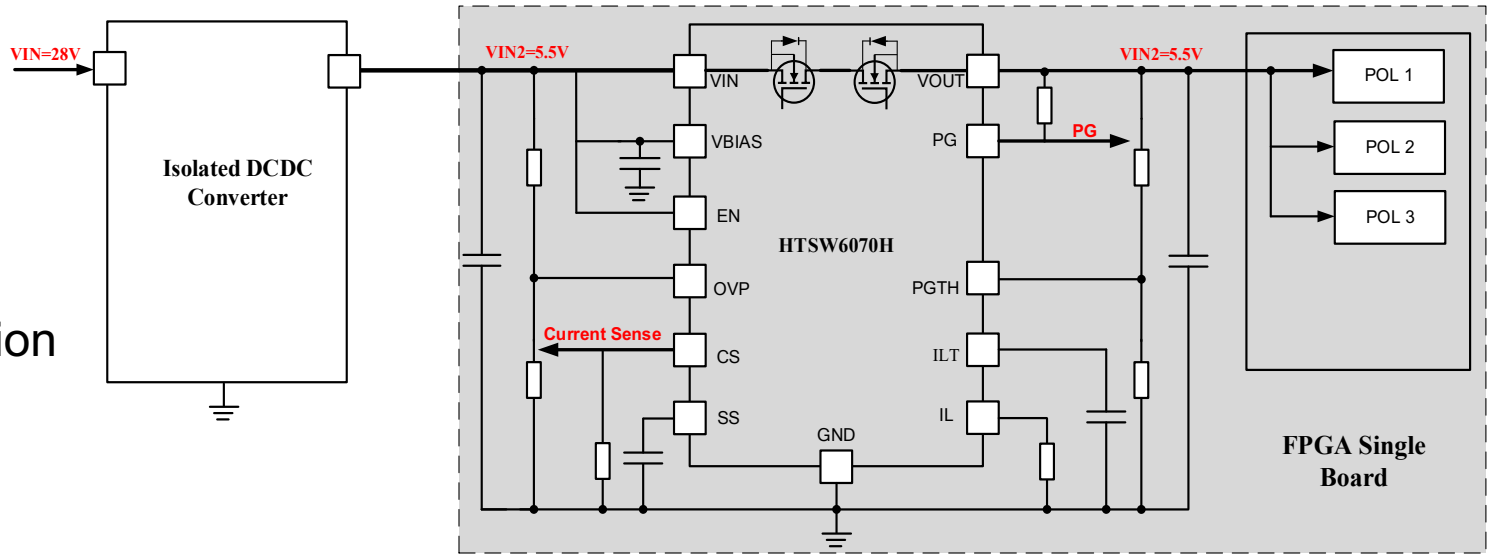
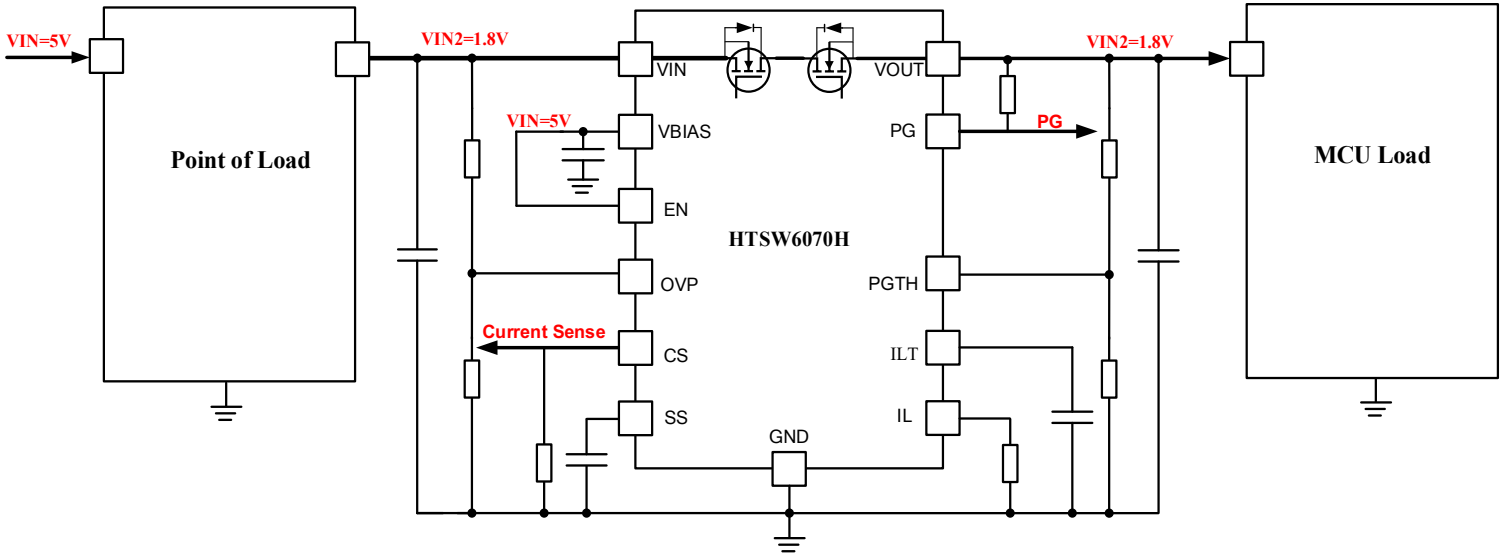
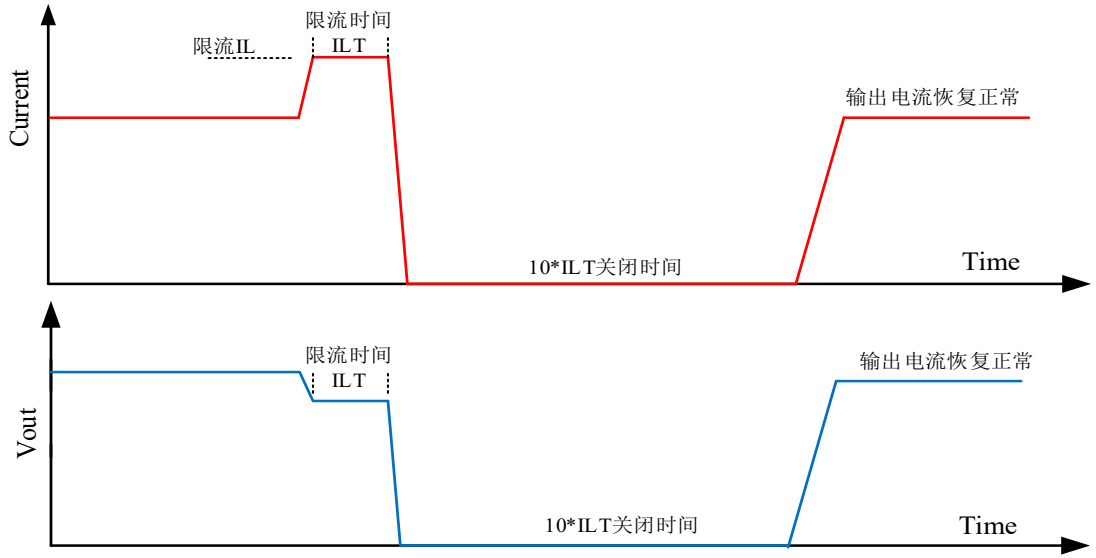
- Input Efuse
- Input Inrush Current Suppression
- over power protection
- OVP overvoltage protection
- Vout voltage monitoring

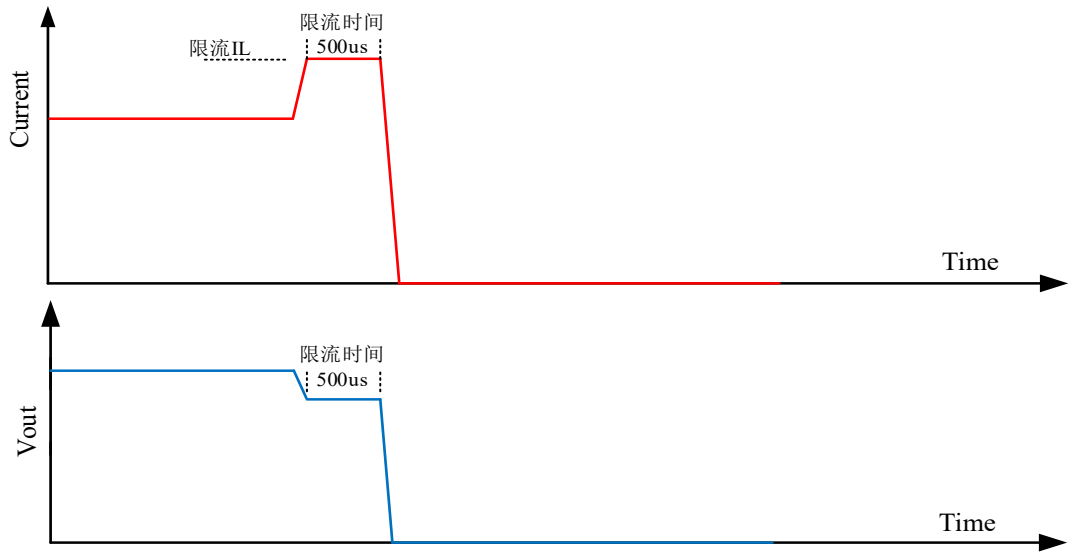


- Ensure that the load device and HTSW6070H itself are always in the safe working area

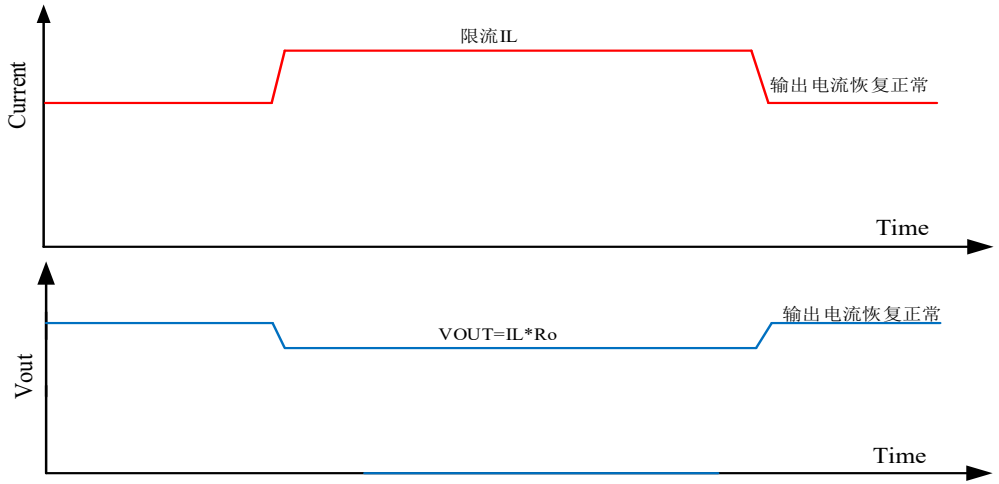




Hiccup mode (ILT connects capacitor to ground)



Latch off mode overcurrent protection (ILT connected to high level)



Schematic diagram of constant current mode overcurrent protection (ILT grounded)

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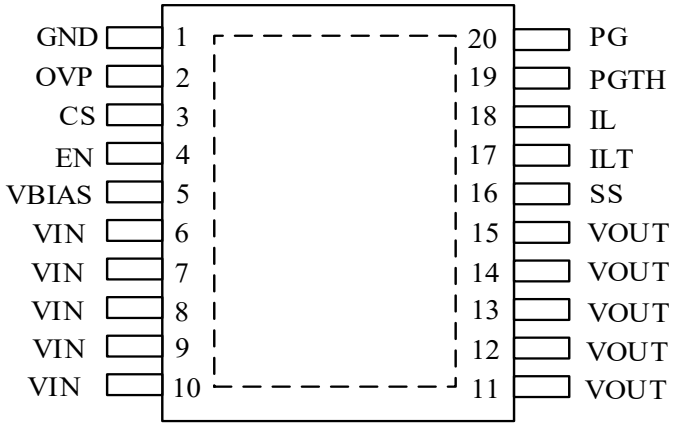
Using CFP20 package, the pin diagram is as follows:



pin number	pin name	signal type	Function
1	GND	-	ground / heat sink
2	OVP	I	Overvoltage protection control terminal, the overvoltage protection value can be adjusted through external resistor voltage divider, this function can be disabled by grounding this pin.
3	CS	o	Current sampling terminal. A resistor is connected between CS and GND , and the voltage at the CS terminal is directly proportional to the output current. If this function is not used, the CS pin can be left floating.
4	EN	I	Enable the control terminal, the high-level chip works, and the low-level chip disables output. This pin cannot be left floating.
5	VBIAS	I	Analog power input, it is recommended to place a 1uF capacitor at the input to stabilize the power supply voltage.
6,7,8,9,10	VIN	I	At the input end of the power supply, it is recommended to place a capacitor with a certain value at the input end to stabilize the input voltage.
11,12,13,14,15	VOUT	o	The output port of the chip is externally connected to the ground capacitor.
16	SS	o	The slow start control terminal, connected to the ground capacitor can adjust the output voltage settling time. The internal default soft start time is 2ms when the pin is left floating.
17	ILT	I/O	A capacitor connected to ground can adjust the overcurrent protection window time. Connect this pin to VBIAS , and it will enter the Latch off state after overcurrent ; when this pin is grounded, the chip will output a constant current at the overcurrent point after overcurrent.
18	IL	I/O	Programmable Current Limit Pin. Place a resistor to ground to set the overcurrent protection threshold. When this pin is grounded, the internal current limit of the chip is
19	PGTH	I	PG threshold, the output is connected to this pin after being divided by a resistor, and the output voltage is monitored.
20	PG	o	Power good indicator terminal. The inside of PG is an open-drain circuit, which is used to indicate the working status of the chip. Pull up PG to VBIAS through a resistor , if not using this function, it can be left floating.