product description

HT4928S is a highly integrated power bank

Management chip, built-in charging management module, LED indicator module

block, boost discharge management module, and use a small SOP8

Encapsulation, only a few components are needed on the periphery to form a function

Powerful mobile power solution.

main feature

- Highly integrated, very few peripheral components;
- Built-in fixed 0.8A linear charging mode;
- Trickle/constant current/constant voltage three-stage charging, constant voltage

  4.20V (typical value), support charging 0V battery;
- The built-in charging can automatically reduce the charging current according to the temperature rise,

  130 degrees began to drop, the lowest can be reduced to 0;
- The charging input has anti-backflow function, no need for anti-backflow

  diode;
- The boost uses a synchronous rectifier circuit, and the efficiency is as high as 91%.

  Low Thermal, Fixed 5.1V Output, No External Resistor Setup Required

  set;
- The output current is 0.8A (typical value when the battery is 3.6V), with

  With constant power output function, with complete overcurrent, short

  road protection;
- Load insertion automatically starts boost, load removal

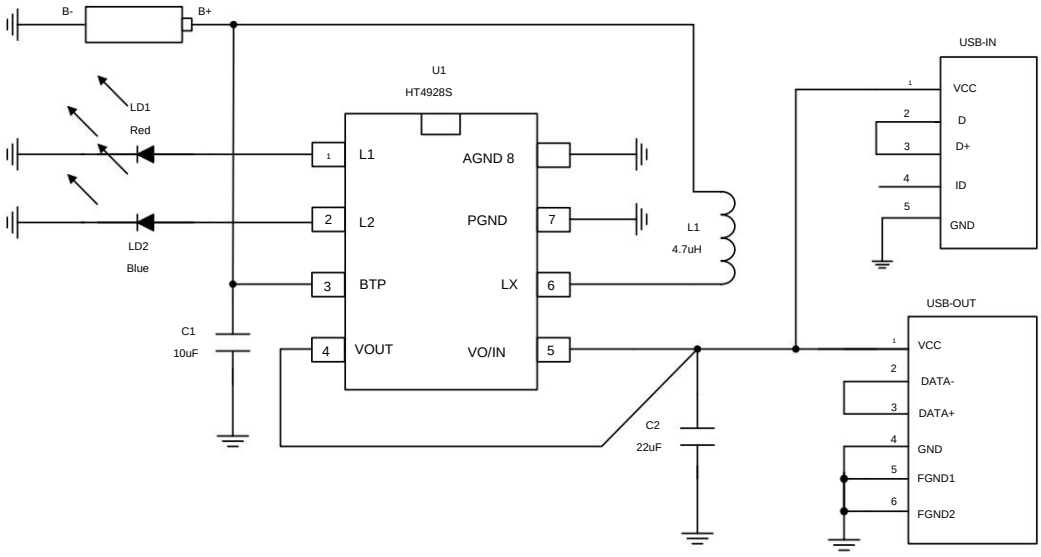
  automatic sleep;
- Battery low voltage reminder function;
- Single/double lamp charge and discharge indication;
- Can share input/output ports, intelligently identify charging/discharging

  Electricity;
- 4KV ESDÿ
- Fixed switching frequency 1MHZ;
- Battery overcharge and overdischarge protection;
- SOP8 small package

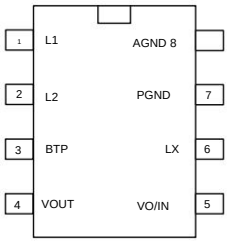
typical application

- Mobile Power
- LED lighting system
- Toys

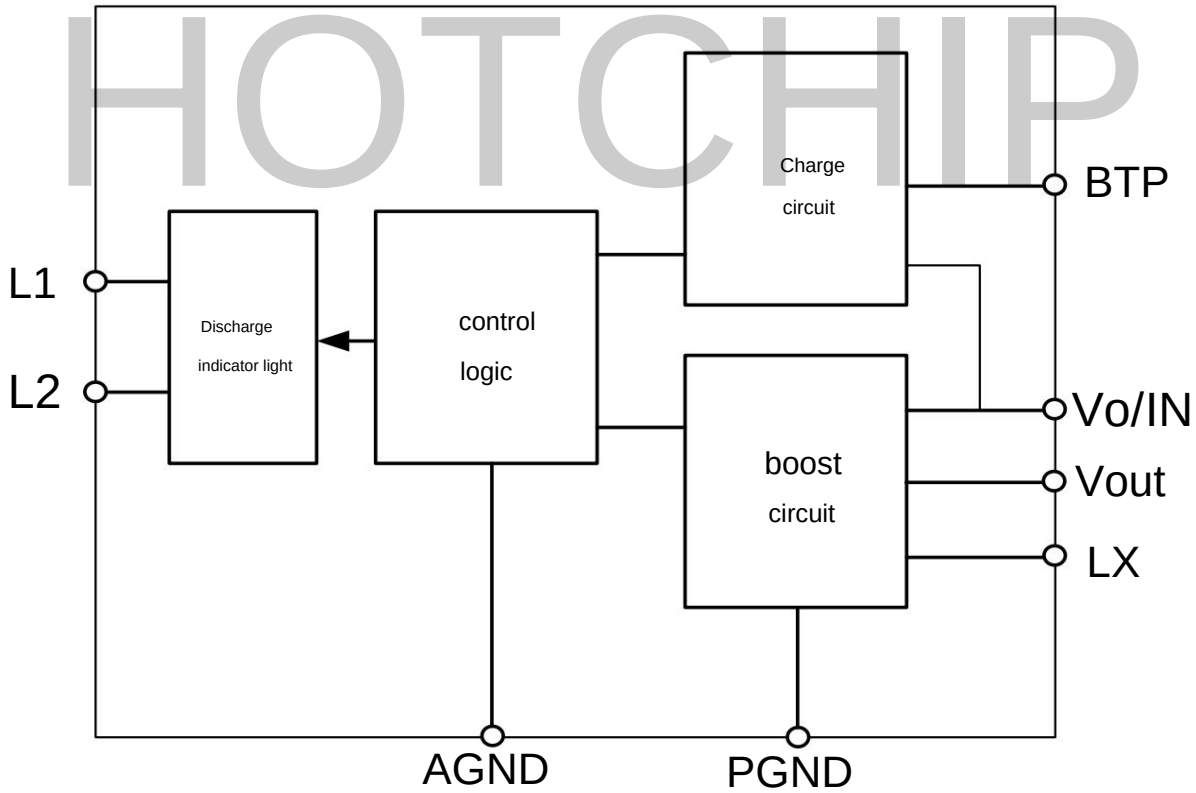
Typical Application Circuit Diagram



pin definition

SOP8	pin name pin number		Function
	L1	1	Description Indicator 1
	L2	2	Indicator 2
	BTP	3	battery side
	VOUT	4	Output voltage feedback
	VO/IN	5	output/input
	LX	6	inductance
	PGND	7	power ground
	AGND	8	Analogously

Circuit internal structure block diagram



Typical parameters

(Unless otherwise specified, all parameters are measured at room temperature, and the potential of the GND terminal is 0 potential)

symbol	characteristic	Test condition	unit	Min	Typ	Max
System parameters						
COME	Input voltage range		In	4.5	5	5.5
Vbat	battery voltage		In	2.95		4.4
Charging parameters						
VIN is powered down monitor	VIN from low to high	Wine>BAT	mV		250	
	VIN from high to low	Wine>BAT	mV		50	
Vfloat	Float Threshold Voltage		V	4.158	4.20	4.242
Drink	recharging current	VIN=4.75-5.25VA			0.8	
VTRKL	Trickle to constant current	VBAT from low to high V			2.8	
VTRHYS	Trickle Charge Hysteresis Voltage		mV		100	
VACCINE	Recharge threshold voltage		IN		4.1	
Discharge parameters						
Vo	Boost system output voltage		In	4.95	5.1	5.25
Iout	Output current	BAT=3.6V Vout>4.8V	A		0.8	
VOVP	Output overvoltage protection		IN		5.8	
VOVP_DIS			IN		5.4	
VUVLO	Boost undervoltage protection	BAT from high to low V			2.95	
VUVLO_R	Boost Brownout Recovery	BAT from low to high V			3.20	
MISCELLANEOUS1		Vout=5.5VýNo switching Vout=4.5Vý	mA		0.2	
IBAT2		switching	mA		1	
Iauto_off	Automatic shutdown load current	BAT=3.6V Cout=20uF	mA		60	
Iq	Quiescent Current	BAT=3.6V	uA		13	30
DARK	working frequency		MHz		1	
OTP	Over temperature protection		tenC		150	
OTP_HYS	Hysteresis		tenC		20	

Functions and parameters

Charge management

module 1. The charging current is internally set to 0.8A 2. The battery voltage is lower than 2.8V with a pre-charge function (current =Ich*10%) 3. Support charging 0V battery

4. Three-stage charging: trickle, constant current, constant voltage charging

5. The charging current decreases as the temperature increases, and begins to decrease at 130°C;

boost module

1. When the load is greater than 10uA (typical value) in standby state, the boost is automatically activated. When the output load is less than 60 mA (typical value), it will automatically enter the standby mode with a delay of 8 seconds. 2. Synchronous rectification and boosting, the conversion efficiency is up to 91% , output Voltage fixed 5.1V

3. After the output current exceeds 0.8A, the voltage will drop. 4. After the output voltage is greater than 5.8V, overvoltage protection will be performed. When the output voltage drops to 5.4V, it will automatically recover. 5. It has output overcurrent protection and short circuit protection functions. Automatic load release

6. The switching frequency is 1MHz.

7. If the temperature reaches 150 degrees during the discharge process, the overheat protection will automatically turn off the output and enter standby.

Automatic conversion module while charging and discharging

1. Supports charging and discharging, that is, external chargers charge the mobile phone at the same time

2. In the process of boosting, it will automatically detect whether the external charger is plugged in input, after detecting that the charger is inserted, according to the size of the external current Automatically distribute current to mobile power supply and mobile phone for charging

3. If the charger is removed, the boost will start automatically

Charge and discharge indicator

1. The indicator lights LD1 and LD2 flash alternately when charging, and the indicator light LD2 is on when the battery is fully charged; 2. When the battery is full, the indicator light LD2 is on during charging, and the indicator light LD2 is off after 8 seconds of unplugging the mobile phone. 3. If the battery voltage is lower than 3.2V during discharge, the indicator LD2 will flash until the 2.95V undervoltage shutdown; when the battery voltage rises to

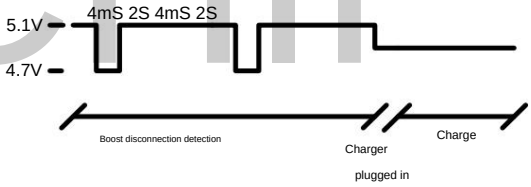
Before 3.2V, the indicator light of LD2 will flash for 8 seconds when the load is inserted, but the boost will not start.

4. If LD1 is not connected, it is a single LED light mode.

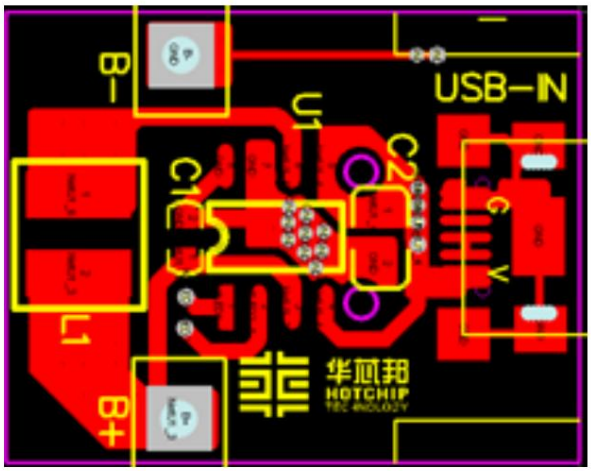
Charger detection during single port discharge

1. During the charging process of the mobile phone, the system will generate a charger detection signal with a period of 2 seconds and a pulse width of 4mS at the output end; 2. When no charger is inserted, at the 4mS pulse, the output voltage drops to 4.7V, and the external Charger not plugged in.

3. When the charger is inserted, at the 4mS pulse, when the output voltage is greater than 4.7V, it is judged that the charger is inserted, and the system automatically enters the state of charging and discharging.



PCB LAYOUT Reference



C1 and C2 should be close to the chip within 2mm, and the traces to the chip pins should be as short as possible; in order to prevent the heat of L1 from affecting the chip, L1 can be slightly farther at about 5-10mm, and connected with thick wires

Electrostatic protection measures

CMOS circuits are electrostatic sensitive devices, and the following precautions should be taken during production and transportation to effectively prevent Damage to CMOS circuits due to electrostatic discharge

Bad:

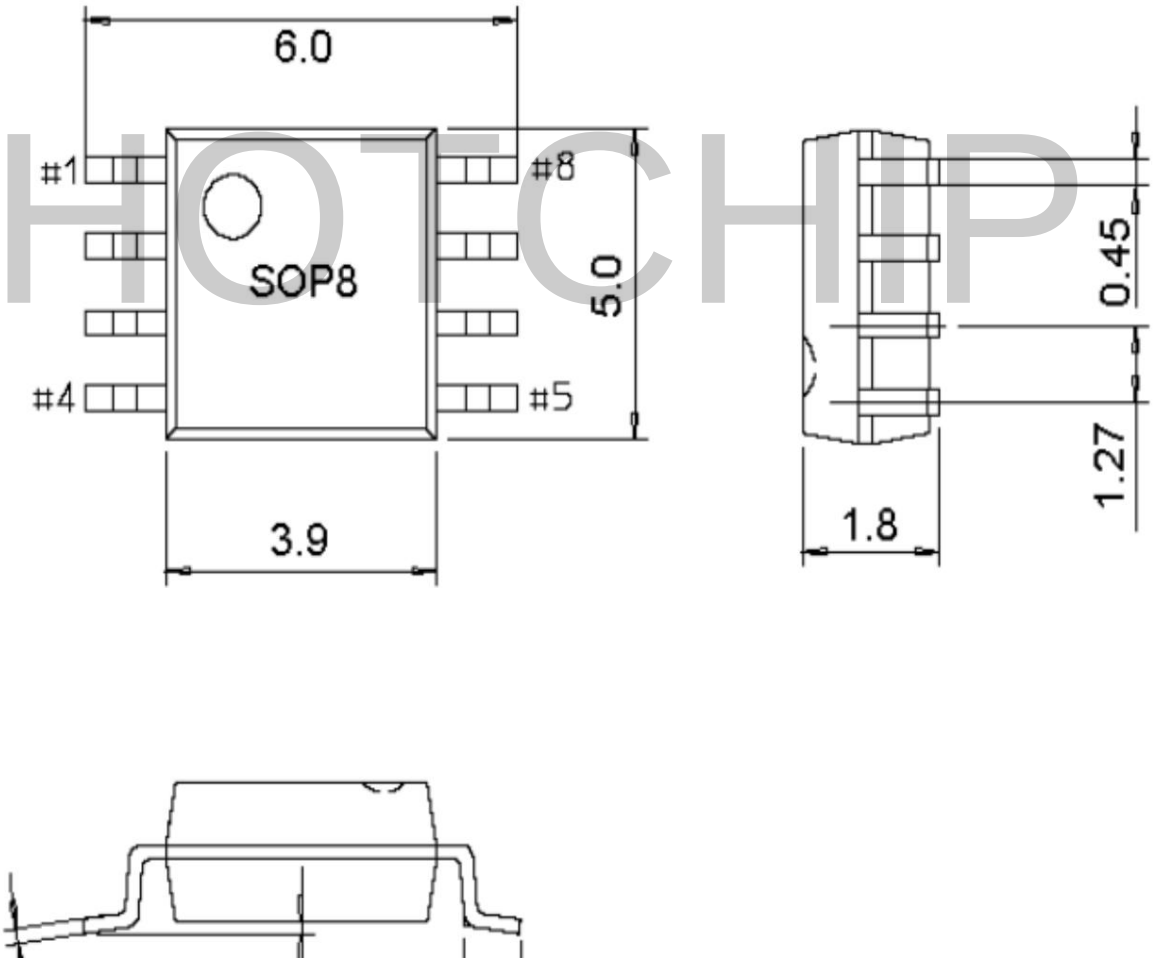
1. The operator should ground the electrostatic wrist strap;

2. The shell of the production equipment must be grounded; 3. The tools used in the assembly process must be grounded; 4. It must be packaged or shipped with semiconductor packaging or antistatic materials.

lose.

Package information

SOP8 Package Appearance



Device Marking and Ordering Information

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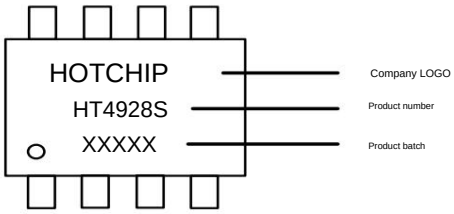

Package form	Chip surface packaging logo form	Packaging device name		Minimum package quantity
SOP8 Pb-free	HT4928S	HT4928S-F0 tray	4000PCS	

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