Description

RLCP1235 is a overvoltage / overcurrent protection switch chip, the chip built-in high voltage power MOSFET, chip for the input voltage and output current to continuous monitoring, when the chip monitoring, the input voltage or output current over the preset threshold, through the shut off power MOS tube to cut off the voltage and current path,so as to realize the protection of later devices.RLCP1235 Built-in fixed overcurrent protection threshold. In addition, the chip also has overtemperature protection and underpressure protection and other functions.

Features

- The input voltage is up to 36V
- Overcurrent protection value is 1.2A
- High precision threshold
- Built-in: 300 mΩ MOSFET
- Lead-free products conforming to the European "ROHS" standards

Applications

- Portable electronic devices
- smart mobilephone
- digital camera

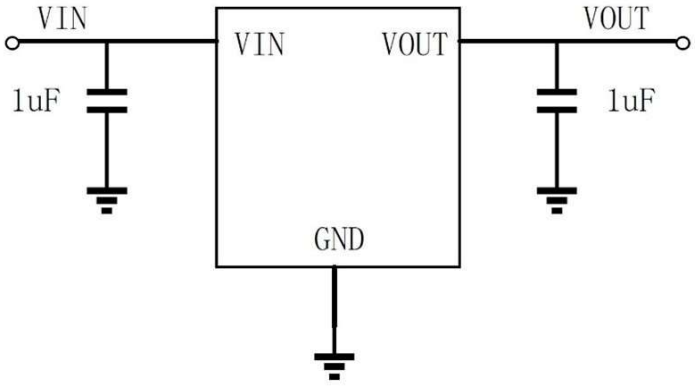
Attention

The maximum continuous load current should not exceed 1A, and the continuous current above 1A may cause overtemperature protection.

Enter The 28-V Touch Test

Input / output capacitor 0.1 uF ~ 1 uF, input 28V touch test passed, customer please rest assured to use.

Typical Application Diagram

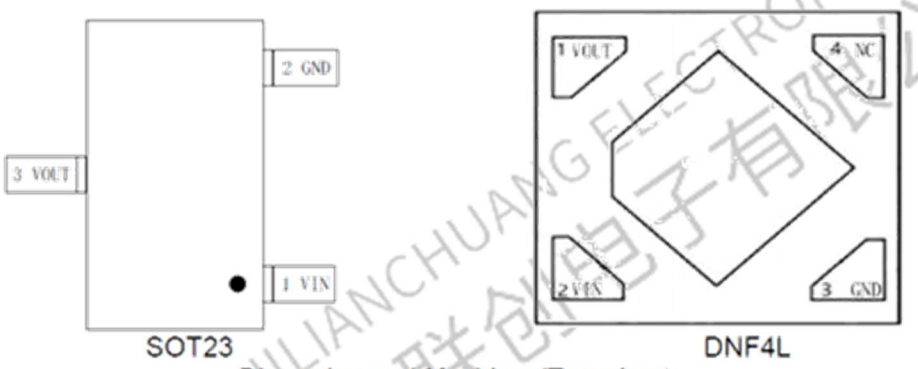


Order Information

Order model	Package	Packing
RLCP1235ST3L/R6	SOT-23-3L	Tape and Reel, 3000pcs
RLCP1235DN4/R6	DFN4L	Tape and Reel, 10Kpcs

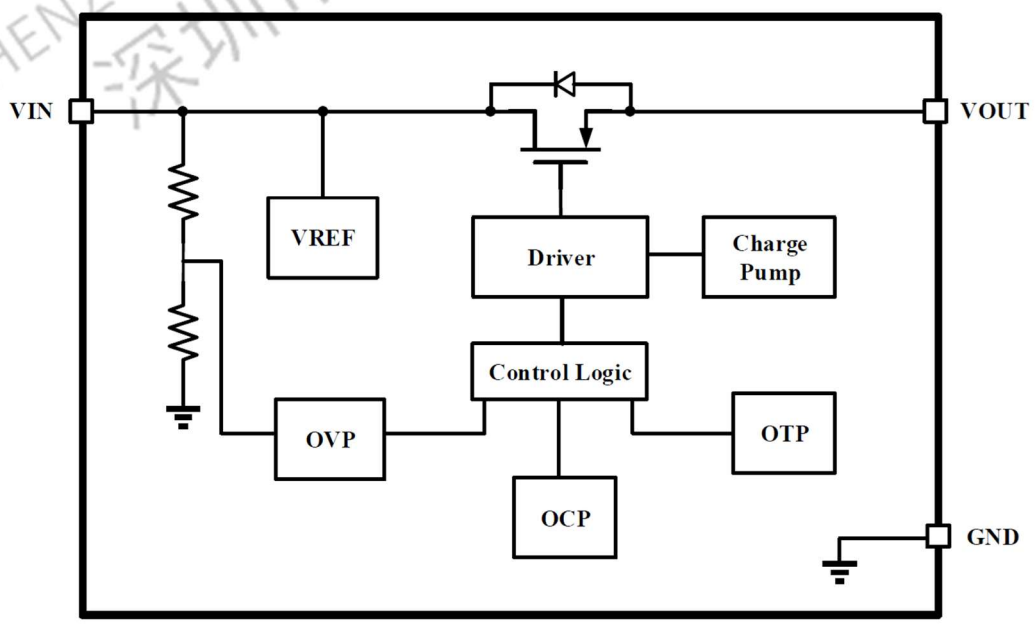
Pin Definitions

Pin No.		Symbol	Description
SOT23	DFN4L		
1	2	VIN	Switch Input and Device Power Supply.
2	3	GND	Ground Terminal.
3	1	VOUT	Switch output Terminal.
-	4	NC	-



Pin order and Marking (Top view)

Application Circuits



■ Absolute Maximum Ratings

Parameter(Note1)	Symbol	Value	Units
VIN , GND Voltage	VDD	-0.3 ~ 36	V
VOUT , GND Voltage	V_{OUT}	-0.3 ~ 10.0	V
Junction temperature	T_J	-40~155	℃
Storage temperature	T_{STG}	-55~155	℃
Power loss T=25 ℃	P_{MAX}	400	mW
ESD Ratings	HBM	±2000	V
	MM	±500	V

Note 1: If each parameter exceeds the range of "absolute maximum", it may cause permanent damage to the chip. The above given is only the limit range, under such limit conditions, the chip technical indicators will not be guaranteed. Long-term work near the "absolute maximum" can affect the reliability of the chip.

■ Recommended Operating Condition

Parameter	Symbol	Value	Units
VDD , GND Voltage	VDD	0~7.0	V
Vout , GND Voltage	V_{OUT}	0~7.0	V
Storage temperature range	T_{STG}	-40~85	℃

■ Electrical Characteristics

（Unless specifically stated， T_A = 27 ℃ , VDD=3.7V）

Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
Basic Function						
Input voltage range	V_{IN}		4.5	5	45	V
Quiescent current	I_Q	V_{IN}=5V, I_{OUT} =0uA		90	125	uA
VIN under voltage	V_{UVLO}	V_{IN} Fall	2.0	2.2	2.4	V
VIN recovery voltage	V_{UVR}	V_{IN} Rise	2.3	2.5	2.7	V
Power up start delay	$T_{Deglitch}$			10		ms
Over temperature protection	T_{SD}			155		℃
Overtemperature protection recovery	T_{SDR}			110		℃
Power MOS						
Switch tube internal resistance	$R_{DS(on)}$	I_{OUT} =0.5A		300	350	mΩ
Defencive Function						
Input voltage overvoltage protection	V_{IOVP}	5V to 10V	5.9	6.2	6.45	V
Input the overvoltage protection lag voltage	ΔV_{IOVP}	10V to 5V		300		mV
OVP Release delay	T_{OVPR}			10		ms
OVP turn-off time	T_{OVP}			50		ns
Overcurrent protection	I_{OCP}		0.9	1.2	1.6	A

Function Descriptions

1. Under-voltage Lockout (UVLO)

The under-voltage lockout (UVLO) circuit disables the power switch until the input voltage reaches the UVLO turn on threshold. Built-in hysteresis prevents unwanted on and off cycling because of input voltage droop during turn on.

2. Over-voltage Lockout (OVLO)

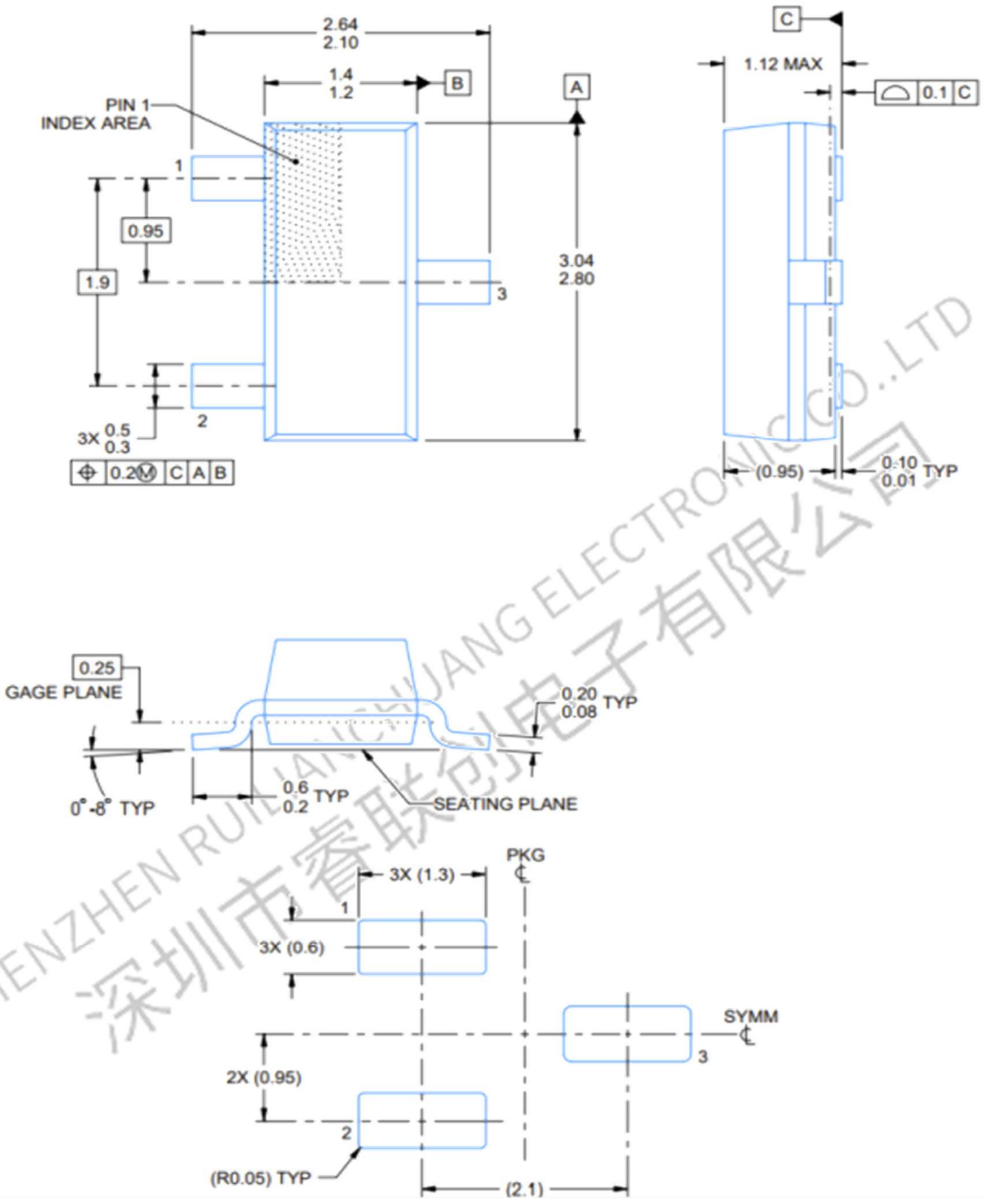
When VIN exceeds the OVP threshold voltage, the over-voltage lockout (OVLO) circuit turns off the protected power switch.

3. Over Temperature Protection (OTP)

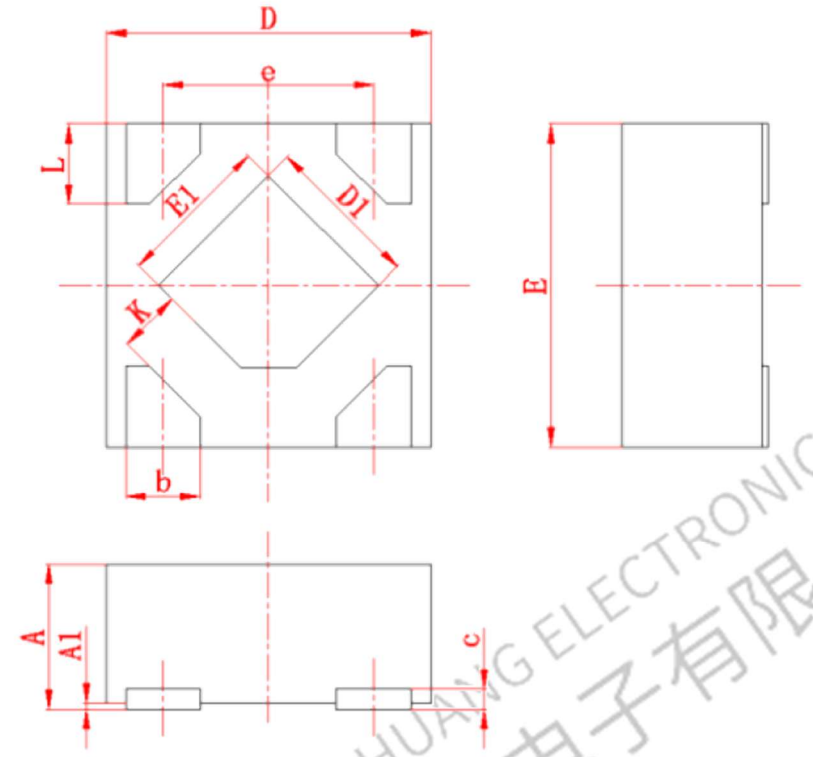
The RLCP1235 monitors its own internal temperature to prevent thermal failures. The chip turns off the power MOSFET when the internal temperature reaches 150°C, and will resume after the internal temperature is cooled down below 20°C.

■ Package Outline Dimensions

SOT-23



DFN4L



（单位：mm）

符号	尺寸		符号	尺寸		符号	尺寸	
	Min	Max		Min	Max		Min	Max
A	0.4	0.5	E	0.9	1.1	b	0.15	0.25
A1	0	0.05	E1	0.43	0.53	c	(0.127)	
D	0.9	1.1	K	(0.2)		L	0.20	0.30
D1	0.43	0.53	e	(0.65)				

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