

■ Description

L1013 series is a high voltage linear constant current source, suitable for direct power supply, powered LED driver with simple peripheral circuits and no magnetic parts, the advantage of no EMI problems.

The L1013 series integrates a single constant current source (the P version also integrates high voltage resistance, with constant power compensation function), for the convenience of use, The L1013 series is available in 110, 135 and 150 degrees over-temperature protection versions are available.

The L1013 series uses a dedicated semiconductor process to improve the built-in high energy withstand capability of the voltage MOS has excellent surge performance.

The P version has a built-in constant power resistor, when the voltage across the chip exceeds the voltage after the set value, the chip current drops to stabilize the input power.

■ Features

- Strong surge capability
- Built-in constant power resistor (P version)
- $\pm 4\%$ current accuracy
- Over temperature protection

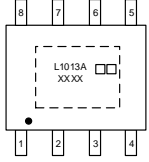
Application areas :

- Spotlights
- LED bulb
- LED Filament Lamp

■ Ordering Information

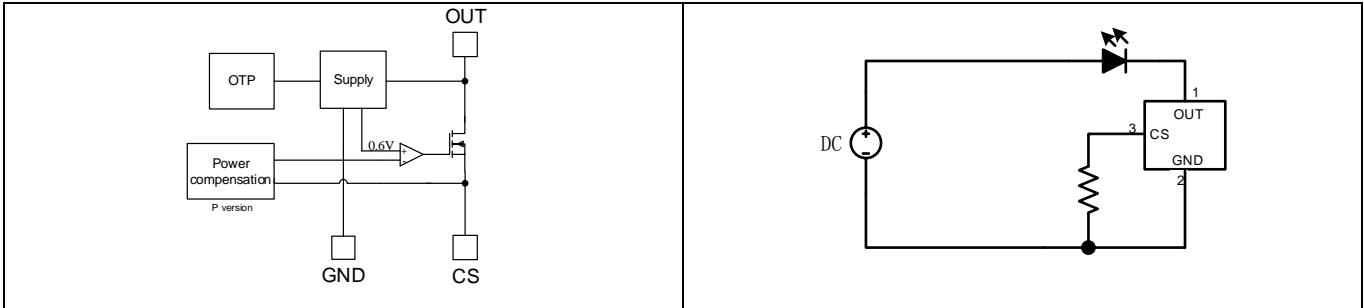
Part number	Over-temperature protection point	Constant power	Package	Packaging	Packaging quantity
L1013AHP	150°C	YES	ESOP-8	reel	4000
L1013ALP	135°C	YES	ESOP-8	reel	4000
L1013ANP	110°C	YES	ESOP-8	reel	4000
L1013AHC	150°C	YES	ESOP-8	reel	4000
L1013ALC	135°C	YES	ESOP-8	reel	4000
L1013ANC	110°C	YES	ESOP-8	reel	4000

■ Pins and Identification

L1013A□□	1	GND	ground	
	2	CS	current setting terminal	
	7	OUT	output	
	3, 4, 5, 6 8	NC	null	

Note : XXXX is the internal code

■ Diagram



■ Limit parameters

Parameter	Limit value
OUT to GND	-0.3V~500V
CS to GND	-0.3V~5V
Maximum Junction Temperature	150°C
Storage Temperature	-40°C~85°C
Lead Temperature & Time	260°C, 10Sec

Note 1: The maximum limit value is beyond the working range, the chip may be damaged. Electrical parameters define the DC and AC parameter specifications for the device over the operating range and under test conditions that guarantee specified performance specifications. The specification does not guarantee the accuracy of parameters for which upper and lower limits are not given, but Typical values reflect device performance.

■ Electrical parameters (Ta=25°C, unless otherwise specified)

PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OUT breakdown voltage		500			V
OUT current capability	V _{OUT} =15V	80			m-A
CS regulated voltage	R _{CS} =30Ω	576	600	624	m-V
Power compensation threshold (P version)			75		V
Over temperature derating threshold	L1013AHP, L1013AHC		150		°C
	L1013ALP, L1013ALC		135		°C
	L1013ANP, L1013ANC		110		°C

Note 2: For parameters without upper limit (MAX) and lower limit (MIN), the typical value (TYP) reflects the parametric performance of the device, but the specification does not guarantee its accuracy. Package information

■ Package diameters

Package	ESOP-8	Devices per reel	4000Pcs	Unit	mm
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Package diameters :

SYMBOL	MILLIMETER	
	MIN	MAX
A	-	1.75
A1	0.00	0.15
A2	1.25	1.55
b	0.33	0.51
c	0.17	0.26
D	4.70	5.10
E	5.80	6.20
E1	3.70	4.10
e	1.27BSC	
L	0.50	0.80
θ	0	8°
D1	3.10	3.50
E2	2.30	2.52

■ 修订记录

Version number	Modification content	Date
V0.1	draft	2018-12-20
V1.0	first release	2019-2-11
V1.1	The chip selection is added, and models with different suffixes are given according to the difference of the over-temperature protection point and whether it has a constant power function.	2019-2-19
V1.2	Corrected a bug in the description of pin 1 of L1013A in "Pin and Identification".	2019-5-22
V1.3	Removed the information of L1013BXX and L1013CXX	2020-3-5
V2.0	Added L1013ANP, L1013ANC models; added "limit parameters" and "electrical parameters"; revised block diagram and application circuit.	2020-8-24

■ Statement

The company reserves the right to improve, correct or otherwise modify the products and specifications without prior notice.

To ensure product performance and service, please purchase from the purchase channels designated by LooAll.