S3026P

Single-Channel PXIe Pulse Precision Source

Meter

Version 1.1

Product Description

Semight S3026P is a standard single channel pulse current source/measuring unit for the liDAR market. It supports high precision pulse current output and synchronous measurement of pulse current and DUT voltage drop.

Key Features

Feature	Benefit
Closed loop current control	Higher current accuracy
Minimum 1us pulse width	It is suitable for higher speed devices under test to better avoid the influence of temperature on test results
Greater load adaptability	Test resistance, diode and other different characteristics of the load without overshooting or other distortions in the waveform
Accepts up to 2m of output cable	Can be adapted to different applications, wiring is more flexible
Real-time reading of pulse current and DUT voltage drop	Accurately monitor current test conditions without additional equipment and read back test results in real time
High speed measurement	ADC up to 125MSA/S with user setting of sample rate
high speed sync	Achieve multi-channel, multi-model collaborative measurement
Works with PXIe chassis	Smaller size for easy multi-channel expansion

Technical Specification

Specification conditions:

Temperature :23℃±5℃

Relative humidity < 70%

Temperature coefficient ±(0.15 × accuracy index)/℃ (0℃-18℃,28℃-50℃)

After 60 minutes warmup, ambient temperature change less than ±3℃ during measurement

The calibration period is 1 year

Maximum dc current must be limited to <50mA when the output power port is electrical short

After overtemperature protection, the device enters the standby state

Pulse Current Source Specification (cannot be used with DC voltage source)

Current accuracy	Range	Programming Resolution	Accuracy ± (%RD+mA) (10us pulse width)	Accuracy ± (%RD+mA) (1us pulse width)
	±150mA	20uA	0.1%+0.5mA	1%+2mA
	±750mA	40uA	0.1%+1mA	1%+10mA
	±1.5A	100uA	0.1%+2mA	1%+20mA
Current noise	Range	Typical Noise (resistive load, RMS) 10k-20MHz	Typical Noise (resistive load, RMS) 10k-10MHz	Typical Noise (resistive load, RMS) 10k-1MHz

	±150mA	1mA	0.8mA	0.5mA
	±750mA	3mA	2.5mA	1.4mA
	±1.5A	5mA	4mA	2.4mA
Maximum load voltage	10V			1. Output electrical short; 2. Total cable and DUT inductance < 200nH (100k); 3. Pulse width measurement from rising edge 10% to falling edge 90%
Pulse width Programming Resolution	80ns			
Maximum pulse width Ton-max	500us			
Minimum pulse width Ton-min	1us			
Pulse minimum turn-off time Toff-min	500us			
Pulse width accuracy	100ns			
Pulse width jitter	80ns (typical value)			
Pulse-period jitter	500ns (typical value)			
Rise time (10%-90%)	<200ns			
Pulse overshoot	<0.5%			
Current regulation	linear	0.05% of the range		
	load	±100uA		
Duty cycle	D<3-|Ibias|/[(Vsp-Vload) * (|Iset|-|Ibias|)] Iset: programing current; D: duty cycle; Vsp: source protection voltage; Vload: load voltage			
Maximum number of pulses per scan	64k			

Pulse Source Measurement Specifications

PULSE voltage measure	Range	Display resolution	Accuracy± (%RD+mV) (10us pulse width)	Accuracy± (%RD+mV) (1us pulse width)	Sample rate	Test condition

	Range	Display resolution	Accuracy± (%RD+mV)	Accuracy± (%RD+mV)	Sample rate	Notes
	6V	0.1mV	0.1%+6mV	0.2%+20mV	10MSa/s	1. The sampling rate is the maximum that can be used by the user; 2. The pulse width condition of the accuracy index refers to the time required from the start of measurement to stability to the accuracy requirements
	10V	0.1mV	0.1%+10mV	0.2%+30mV		
PULSE Electric current measure	Range	Display resolution	Accuracy± (%RD+mA) (under 10us pulse width)	Accuracy± (%RD+mA) (under 1us pulse width)	Sample rate	
	150mA	20uA	0.1%+0.5mA	0.2%+1mA	10Msa/s	
	750mA	40uA	0.1%+1mA	0.2%+2.4mA		
	1.5A	100uA	0.1%+2mA	0.2%+5mA		
Remote Voltage Sense (PULSE voltage measurement)	The maximum voltage between HI and SENSE HI =±10v; The maximum voltage between LO and SENSE LO =±10v;					

DC Voltage Source Specification (cannot be used with pulse current source)

Voltage Source (DC)	Range	Programing resolution	Accuracy± (%RD+mV)	Ripple (Vp-p) 10k-20MHz	Maximum current output
	±10V	1mV	0.1%+10mV	<10mV	10mA
Current Measurement (DC)	Range	Display resolution	Accuracy± (%RD+nA)	Sample rate	Normal sampling rate
	100uA	10nA	0.1%+100nA	10Msa/s	10NPLC
	100nA	10pA	0.1%+0.1nA		
Voltage Measurement (DC)	Range	Display resolution	Precision ± (%RD+mV)	Sample rate	
	±10V	1mV	0.1%+10mV	10Msa/s	
Remote Voltage Sense (When measuring DC voltage)	The maximum voltage between HI and SENSE HI =±1v; The maximum voltage between LO and SENSE LO =±1v;				

Bias Current Source Specifications

Current accuracy	Range	Programing resolution	Accuracy ± (%RD+mA) (10us pulse width)	Accuracy ± (%RD+mA) (1us pulse width)
	±50mA	20uA	0.1%+0.5mA	1%+2mA
Current noise	Range	Typical Noise (resistive load, RMS) 10k-20MHz	Typical Noise (resistive load, RMS) 10k-10MHz	Typical Noise (resistive load, RMS) 10k-1MHz
	±50mA	1mA	0.8mA	0.5mA

Trigger Signal Specification

	Signal level	Delay	Trigging mode
Trig_IN/OUT	5V	100ns	Rising edge

Ordering Information

Output Low terminal connector, quick reference, U disk (including PDF manuals, quick I/V Measurement Software and drivers

Model number	
S3026P	Single-channel PXIe pulse precision source meter

Semight

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* This information is subject to change without

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