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AXC85xx
600/1200/2400 A High Current SMU Family

VXI Instruments
the test solutions provider



TECHNICAL DATA SHEET –preliminary–

PXI
VXI
LAN
cPCI
PXIe
GPIB
USB
external PCIe

Features

- Output current up to 2 400 A pulse mode
- Programmable output voltage up to 50 V
- Pulse width starting at 300 µs
- Extremely low noise with linear output stage
- Current generator unit with 4 ranges
- Integrated current measurement unit with 4 measuring ranges
- Integrated differential voltage measurement unit with 3 measuring ranges
- Integrated sampling function for voltage and current measurement unit
- Front touch display available
- Hardware trigger I/O available
- Integrated LAN interface
- Further interfaces on request

Product Information

The AXC85xx High Current Source and Measurement Unit family was designed for semiconductor and high throughput testing.

Very fast linear output stage

The very fast rise time allows current pulses up to 2 400 A in two ranges with a programmable pulse length.

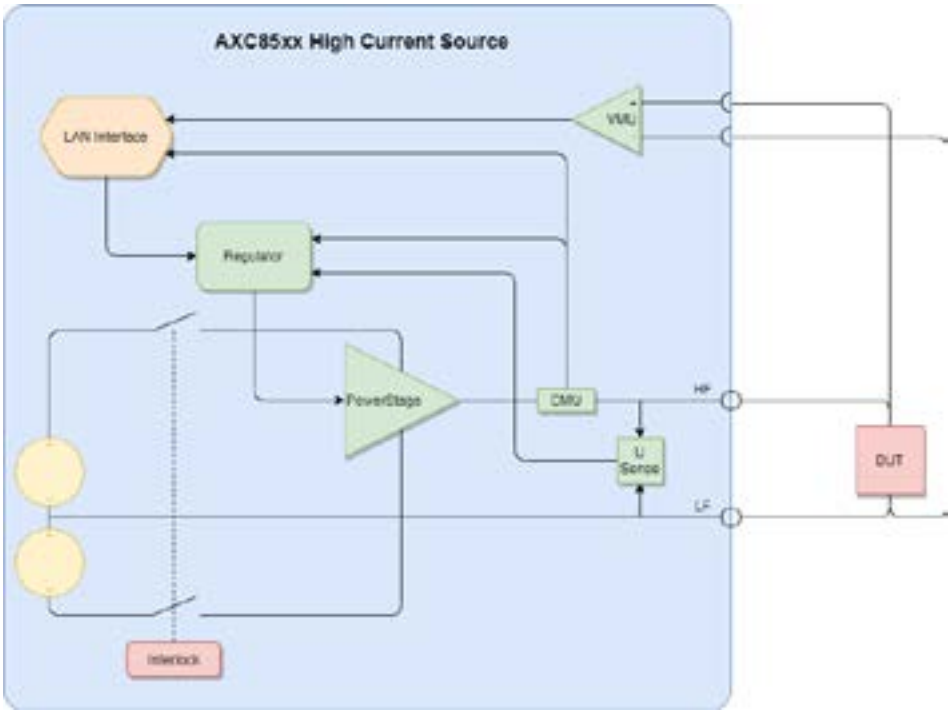
The pulse duration can be configured from 300 µs to 2/4/8 ms at maximum current starting at 300 µs. The AXC85xx is specified for a maximum current time product IxT. In order to avoid an exceeding of the specified IxT limit, a monitoring circuit (IxT Limiter) is integrated. This IxT Limiter switches off the generator when an overload condition occurs.

Integrated measurement units...

Due to the integrated differential voltage measurement unit (VMU) and the integrated current measurement unit (CMU) all high current tests of power semiconductor can be done.
By using the integrated sampling function for voltage and current measurement units, an analysis of current and voltage curves is possible with up to 4000 measuring points with sample rates from 4µs up to 64µs (4µs steps).

Multiple interfaces included

A LAN interface is included to offer an easy communication with most usual control devices.



Ordering Option	Comment
AXC8566	2 400 A / 50 V max.
AXC8546	1 200 A / 50 V max.
AXC8526	600 A / 50 V max.
Option NON-ISOL	Non-isolated device
Option HIGH-ISOL	Isolated device by gas discharge tube
Option Trigger	Hardware Trigger I/O
Option FE	Front touch display
Option RMK	19" rack mounting kit

On Request
GPIB Interface
USB Interface
ePCIe Interface
Other pulse length

General	Specification	Comment
AC line voltage	230 V_{AC} ±10%	
AC line frequency	47 Hz ... 63 Hz	
Power consumption	<2 000 W	
Operating temperature	0 ... 35°C	Up to 50°C but degrading pulse-pause-ratio
Operating altitude	<2 000 m	
Relative humidity	Up to 85% at 35°C	
Storage temperature range	-25 ... 70°C	
Size	19" x 6U x ≈595 mm	≈655 mm with handles
Weight	≈48 kg	
Electrical safety	According EN61010-1	
Isolation output LF to PE	100 V CAT I, Pollution Degree 2	Standard 15kΩ LF to PE Option NON-ISOL: direct connection of LF to PE Option HIGH-ISOL: isolation LF to PE by gas discharge tube

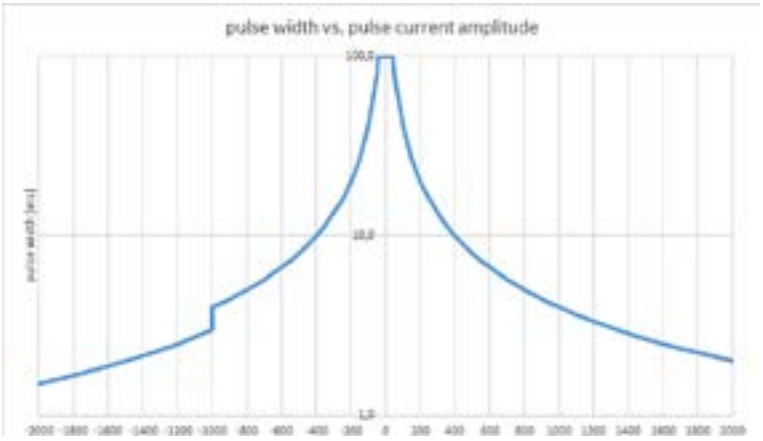
Current Source	AXC8566	AXC8546	AXC8526
Resolution	16 Bit	16 Bit	16 Bit
DC accuracy	1.0% of range	1.0% of range	1.0% of range
Maximum output current			
Range 1	2 400 A	1 200 A	600 A
Range 2	1 200 A	500 A	250 A
Range 3	240 A	120 A	60 A
Range 4	100 A	50 A	25 A
Programmable output current			
Range 1	-2 400 A ... +2 400 A	-1 200 A ... +1 200 A	-600 A ... +600 A
Range 2	-1 200 A ... +1 200 A	-500 A ... +500 A	-250 A ... +250 A
Range 3	-240 A ... + 240 A	-120 A ... + 120 A	-60 A ... + 600 A
Range 4	-100 A ... +100 A	-50 A ... +50 A	-25 A ... +25 A
Minimum pulse length[2]	300 µs	300 µs	300 µs
Pulse length			
Max. Current	2 ms	4 ms	8 ms
Current	20 ms @ 200A	40 ms @ 100A	80 ms @ 50A

Voltage Source	Specification	Comment
Resolution	16 Bit	In all ranges
DC accuracy	0.1 + 0.1	±(% of reading + % of range)
Output Voltage (Pos Limit)	1 V ... 30 V	Programmable output voltage
Output Voltage (Neg Limit)	-30 V ... -1 V	Programmable output voltage
Min. Voltage Limiter difference	5 V	
Maximum Output Voltage	50 V	only with Option 50 V Max. 40 V @ 2400 A

[1] Maximum pulse length see "IxT-Limiter" diagram. See manual for calculation
[2] Lower pulse length on request

Notes: All product data are specified for 1 year at an ambient temperature of 23°C ±5°C (after 1 hour warm-up time).
Product specification and description in this document are subject to change without notice.

Ixt Limiter Diagram



The integrated "Ixt limiter" provides a multitude of current -pulse length combinations while monitoring the maximum current-time product.

Current Measurement	Specification
Resolution	16 Bit
Filter frequencies	100 Hz, 1 kHz, 10 kHz, 100 kHz
DC accuracy[1] Range 1-4	±0.5% of reading ±1.0% of range

Voltage Measurement	Specification
Resolution	16 Bit
Filter frequencies	100 Hz, 1 kHz, 10 kHz, 100 kHz
Common mode voltage range	60 V
CMRR	>80 dB
Overload protection	100V
DC accuracy[1]	
Range 1 V	±0.1% of reading ±0.1% of range
Range 10 V	±0.1% of reading ±0.1% of range
Range 50 V	±0.1% of reading ±0.1% of range

[1] With 100 Hz filter and 20 samples with an interval of 1 ms.

Trigger Specification

Trigger Input	Specification
Input Type	Buffered CMOS input
Input Termination	50 Ω
Max. Input Voltage	5.5 V
High-Level Input Threshold	2 V
Low-Level Input Threshold	0.8 V

Trigger Output	Specification
Output Type	Push-Pull output driver
Output Termination	50 Ω
Max. Input Voltage	5 V

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