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AXC755x
500 A High Current SMU Family

VXI Instruments
the test solutions provider



TECHNICAL DATA SHEET –preliminary–

PXI
VXI
LAN
cPCI
PXIe
GPIB
USB
RS232 485
external PCIe

Features

- Extremely low noise with linear output stage
- Output current up to 500 A pulse mode
- Programmable output voltage up to 50 V
- Programmable current pulse
- Integrated current measurement unit
- Integrated differential voltage measurement unit
- Integrated LAN, GPIB and USB interface
- Front touch display available
- Hardware trigger I/O available
- Integrated isolated voltage measurement unit on request

Product Information

The AXC755x 500 A 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 500 A with a programmable pulse length.

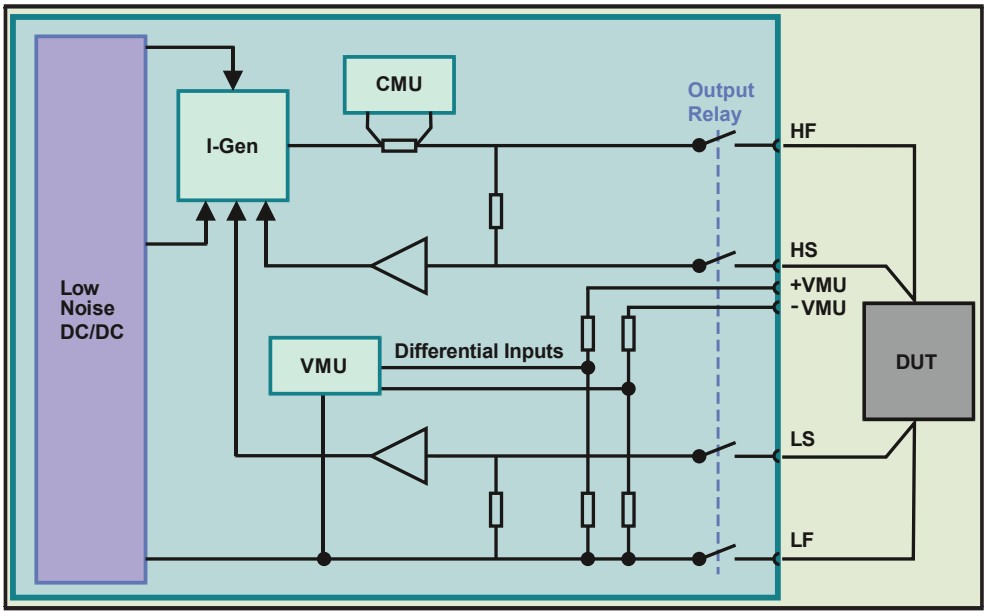
The pulse duration can be configured from 300 µs to 2 ms at maximum current (4 ms at the AXC7552 on request).
An integrated "Ixt limiter" monitors the maximum current-time product of 500 A x 2 ms (4 ms at the AXC7552 on request). This allows a multitude of current-pulse-length combinations.

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.
An optional isolated VMU is available on request. This VMU will have an additional measurement range and a much higher CMRR.

Multiple interfaces included

Interfaces for LAN, GPIB and USB are included to offer an easy communication with most usual control devices.



Ordering Option	Comment
AXC7552	500 A / 20V on request
AXC7555	500 A / 50V
Option VMU-ISOL	Isolated VMU on request
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

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	≈46 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

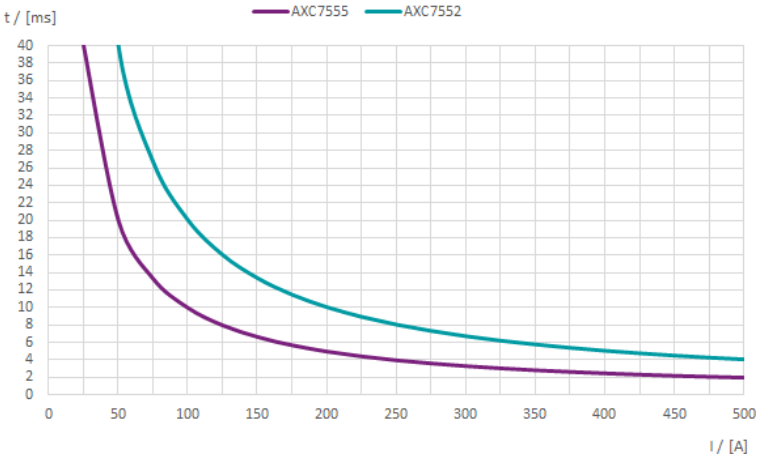
Voltage Control Unit	Specification	Comment
Resolution	16 Bit	In all ranges
DC accuracy	0.1 + 0.1	±(% of reading + % of range)
Output voltage Range	 0 V ... 20 V (AXC7552) 0 V ... 50 V (AXC7555)	Programmable output voltage

Current Control Unit	Specification	Comment
Resolution	16 Bit	
DC accuracy	0.5 + 0.5	±(% of reading + % of range)
Output current		
Maximum pulse current	500 A	Programmable output current 15 ... 500 A[1] Max. pulse length see "IxT-Limiter" diagram
Average output current	10 A	See manual for calculation
Minimum pulse length	300 µs	Lower pulse length on request

[1] Lower currents 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 50 A	±0.5% of reading ±1.0% of range
Range 500 A	±0.5% of reading ±0.5% 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
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.

On Request

Isolated Voltage Measurement	Specification
Resolution	16 Bit
Filter frequencies	100 Hz, 1 kHz, 10 kHz, 100 kHz
Common mode voltage range	60 V
CMRR	>110 dB
DC accuracy[1]	
Range 100 mV	±0.1% of reading ±0.3% of range
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.

Voltage Monitor	Specification
Output voltage	tbd
Internal resistance	tbd
Accuracy	tbd

Current Monitor	Specification
Output voltage	tbd
Internal resistance	tbd
Accuracy	tbd

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