

AXC755x 500 A High Current SMU Family



TECHNICAL DATA SHEET – preliminary –

Features

PXI

VXI

LAN

cPCI

PXIe

GPIB

USB

RS232
485

external
PCIe

- 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 500A 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 500A with a programmable pulse length.

The pulse duration can be configured from 300 μ s to 2 ms at maximum current (4 ms at the AXC7552 on request).

An integrated "Ixt limiter" monitors the maximum current-time product of 500A x 2 ms (4 ms at the AXC7552 on request). This allows a multitude of current-pulse-length combinations.

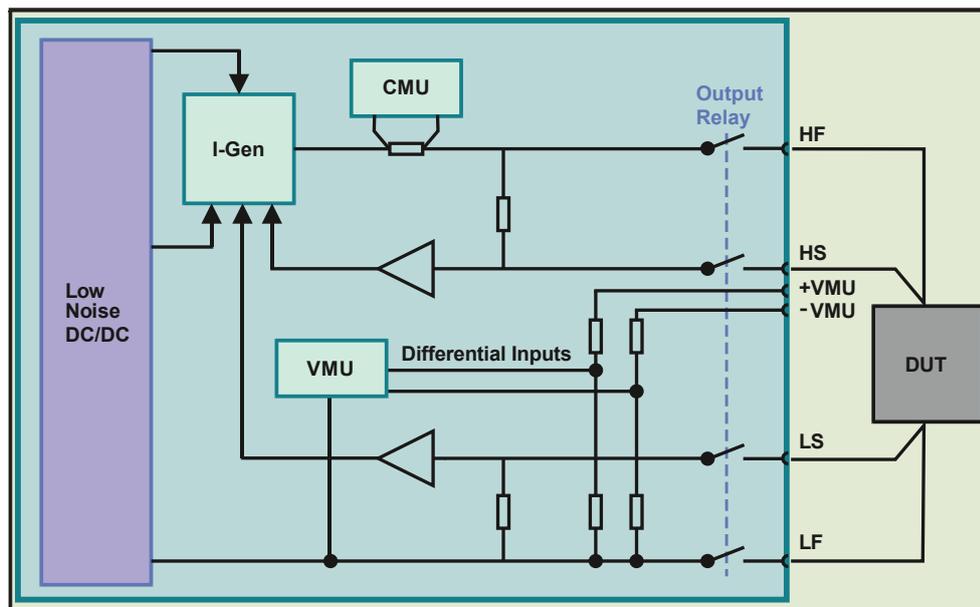
Integrated measurement units...

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 | <2000 W | |
| Operating temperature | 0...35°C | Up to 50°C but degrading pulse-pause-ratio |
| Operating altitude | <2000 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 |

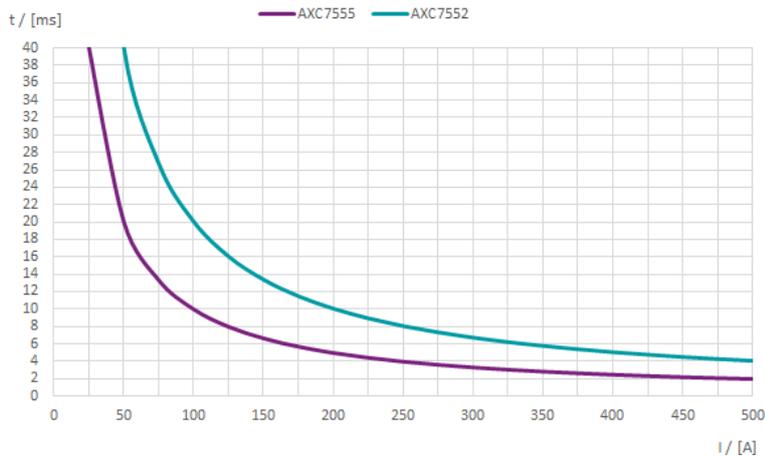
| Voltage Control Unit | Specification | Comment |
|-------------------------|--|------------------------------|
| Resolution | 16 Bit | In all ranges |
| DC accuracy | 0.1 + 0.1 | ±(% of reading + % of range) |
| Output voltage Range | 0 V...20 V (AXC7552) 0 V...50 V (AXC7555) | Programmable output 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 accuracy¹ | |
| 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 accuracy¹ | |
| 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 100Hz 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 accuracy¹ | |
| 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 100Hz 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 |