

| Performance             |                     |                                                                         |                                                          |                                                          |                                                          |                                                                                                  |                                                                                                  |                                                                       |                                             |                                             |
|-------------------------|---------------------|-------------------------------------------------------------------------|----------------------------------------------------------|----------------------------------------------------------|----------------------------------------------------------|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|---------------------------------------------|---------------------------------------------|
| Source                  | Output method       | Bipolar                                                                 | Bipolar                                                  | Bipolar                                                  | Bipolar /asymmetric                                      | Bipolar                                                                                          | Bipolar                                                                                          | Bipolar                                                               | Bipolar                                     | Bipolar                                     |
|                         | Max. Power          | 15W                                                                     | 16W                                                      | 30W                                                      |                                                          | 4 x 5 W                                                                                          | 4 x 5 W                                                                                          | 7 W                                                                   | 7 W                                         | 100W                                        |
|                         | Source Range        | ±15V/±1A DC<br>±10V/±4A 20ms pulse                                      | ±32V/±0.5A                                               | ±6V/±5A                                                  | -15V to +250V/±0.32A                                     | 4 x ±10V/±0.5A<br>(1 A for 4 channels)                                                           | 4 x ±10V/±0.5A<br>(1 A for 4 channels)                                                           | ±32V/±0.22A                                                           | ±32V/±0.22A                                 | ±1200V/±0.12A                               |
|                         | Digits              | 4½                                                                      | 4½                                                       | 4½                                                       | 4½                                                       | 4½                                                                                               | 4½                                                                                               | 4½                                                                    | 5½                                          | 6½                                          |
|                         | Voltage             | Resolution                                                              | 10µV/100µV/1mV                                           | 10µV/100µV/1mV                                           | 10µV/100µV/1mV                                           | 100µV/1mV                                                                                        | 100µV/1mV                                                                                        | 1µV/10µV/100µV/1mV                                                    | 0,1µV/1µV/10µV/100µV                        | 10nV/100nV/1µV/1µV/10µV/100µV/1mV           |
|                         |                     | Range                                                                   | 300mV/3V/15V                                             | 300mV/3V/30V                                             | 300mV/3V/6V                                              | 5V/50V/250V                                                                                      | 3V/10V                                                                                           | 30mV/300mV/3V/30V                                                     | 30mV/300mV/3V/30V                           | 10mV/100mV/1000mV/1V/10V/100V/1000V         |
|                         |                     | Basic Accuracy                                                          | 0,02%                                                    | 0,02%                                                    | 0,02%                                                    | 0,02% (0,025 % in 250V range)                                                                    | 0,02%                                                                                            | 0,025%                                                                | 0,015%                                      | 0,0035%                                     |
|                         | Current             | Resolution                                                              | 1nA/10nA/100nA/1µA/<br>10µA/100µA/200µA                  | 1nA/10nA/100nA/1µA/<br>10µA/20µA                         | 1nA/10nA/100nA/1µA/<br>10µA/200µA                        | 100pA/1nA/10nA/100nA/1µA/<br>10µA                                                                | 100pA/1nA/10nA/100nA/1µA/10µA/20<br>µA                                                           | 100nA/1µA/10µA                                                        | 10nA/100nA/1µA                              | 1nA/10nA/100nA                              |
|                         |                     | Range                                                                   | 30µA/300µA/3mA/30mA/300<br>mA/500mA                      | 30µA/300µA/3mA/30mA/300<br>mA/500mA                      | 30µA/300µA/3mA/30mA/300mA/3A/5A                          | 3µA/30µA/300µA/3mA/30mA/<br>/300mA                                                               | 3µA/30µA/300µA/3mA/30mA/300mA/<br>500mA                                                          | 3mA/3mA/200mA                                                         | 3mA/3mA/200mA                               | 1mA/1mA/100mA                               |
|                         |                     | Basic Accuracy                                                          | 0,03%                                                    | 0,03%                                                    | 0,03%                                                    | 0,03% (0,045% in 250V range)                                                                     | 0,03%                                                                                            | 0,03%                                                                 | 0,02%                                       | 0,0055%                                     |
|                         | Noise (DC to 20MHz) | 3mVpp                                                                   | 3mVpp                                                    | 3mVpp                                                    | 10mVpp                                                   | 3mVpp                                                                                            | 3mVpp                                                                                            | 3mVpp                                                                 | 3mVpp                                       | 3mVpp (10mVpp in 1000V range)               |
| Settling Time           | Voltage Source      | 700µs (@0.1%) SLOW<br>300µs (@0.1%) FAST                                | 1,5ms (@0.1%) SLOW<br>300µs (@0.1%) FAST                 | 800µs (@0.1%) SLOW<br>400µs (@0.1%) FAST                 | 2,2ms(@0.1%) SLOW<br>300µs(@0.1%) FAST                   | 400µs/1ms (@0.1%)SLOW in 3V/10V<br>80µs/200µs (@0.1%)FAST in 3V/10V                              | 400µs/1ms (@0.1%)SLOW in 3V/10V<br>80µs/200µs (@0.1%)FAST in 3V/10V                              | 10ms                                                                  | 10ms                                        | 1sec (10sec in 1000V range)                 |
|                         | Current Source      | 1,5ms (@0.1%)SLOW<br>700µs (@0.1%) FAST                                 | 3ms (@0.1%)SLOW<br>700µs (@0.1%) FAST                    | 1,5ms (@0.1%)SLOW<br>700µs (@0.1%) FAST                  | 4,5ms(@0.1%)<br>FAST@250V<br>120µs(@0.1%) @ 5V           | ≤1,5ms[@0.1%) SLOW in 0.3 to 300mA<br>≤400µs[@0.1%) FAST in 0.3 to 300mA<br>≤20ms[@0.1%) in 3 µA | ≤1,5ms[@0.1%) SLOW in 0.3 to 300mA<br>≤400µs[@0.1%) FAST in 0.3 to 300mA<br>≤20ms[@0.1%) in 3 µA | 10ms                                                                  | 10ms                                        | 1 sec                                       |
| Measurement             | Digits              | 5½                                                                      | 5½                                                       | 5½                                                       | 5½                                                       | 5½                                                                                               | 5½                                                                                               | n.a.                                                                  | n.a.                                        | n.a.                                        |
|                         | Voltage             | Resolution                                                              | 1µV/10µV/100µV                                           | 1µV/10µV/100µV                                           | 1µV/10µV/100µV                                           | 10µV/100µV/1mV                                                                                   | 10µV/100µV                                                                                       | n.a.                                                                  | n.a.                                        | n.a.                                        |
|                         |                     | Range                                                                   | 300mV/3V/15V                                             | 300mV/3V/30V                                             | 300mV/3V/30V                                             | 5V/50V/250V                                                                                      | 3V/10V                                                                                           | n.a.                                                                  | n.a.                                        | n.a.                                        |
|                         |                     | Basic Accuracy                                                          | 0,02%                                                    | 0,02%                                                    | 0,02%                                                    | 0,0002                                                                                           | 0,02%                                                                                            | n.a.                                                                  | n.a.                                        | n.a.                                        |
|                         | Current             | Resolution                                                              | 100pA/1nA/10nA/100nA/<br>1µA/10µA/10µA                   | 100pA/1nA/10nA/100nA/1µA/<br>/1µA                        | 100pA/1nA/10nA/100nA/<br>1µA/10µA/10µA                   | 10pA/100pA/1nA/10nA/100n<br>A/1µA                                                                | 10pA/100pA/1nA/10nA/100nA/1µA/1µ<br>A                                                            | n.a.                                                                  | n.a.                                        | n.a.                                        |
|                         |                     | Range                                                                   | 30µA/300µA/3mA/30mA/<br>300mA/1A/(4A)                    | 30µA/300µA/3mA/30mA/300<br>mA/500mA                      | 30µA/300µA/3mA/30mA/<br>300mA/3A/5A                      | 3µA/30µA/300µA/3mA/30mA<br>/300mA                                                                | 3.2µA/32µA/320µA/3.2mA/32mA/320<br>mA/500mA                                                      | n.a.                                                                  | n.a.                                        | n.a.                                        |
|                         | Basic Accuracy      | 0,03%                                                                   | 0,03%                                                    | 0,03%                                                    | 0,03% (0,045% in 300mA range)                            | 0,03% (0,05% in 500mA range)                                                                     | 0,03% (0,05% in 500mA range)                                                                     | n.a.                                                                  | n.a.                                        | n.a.                                        |
| Function                |                     |                                                                         |                                                          |                                                          |                                                          |                                                                                                  |                                                                                                  |                                                                       |                                             |                                             |
| Source                  | Mode                | DC,Pulse,Sweep (Linear, Random, Fixed), Two-slope linear                | DC,Pulse,Sweep (Linear, Random, Fixed), Two-slope linear | DC,Pulse,Sweep (Linear, Random, Fixed), Two-slope linear | DC,Pulse,Sweep (Linear, Random, Fixed), Two-slope linear | DC,Pulse,Sweep (Linear, Random, Fixed), Two-slope linear                                         | DC,Pulse,Sweep (Linear, Random, Fixed), Two-slope linear                                         | DC, Sweep (Linear, Random, Fixed)                                     | DC, Sweep (Linear, Random, Fixed)           | DC, Sweep (Linear, Random, Fixed)           |
|                         | Pulse width         | 50µs to 60sec                                                           | 50µs to 60sec                                            | 50µs to 60sec                                            | 50µs to 59,998sec                                        | 50µs to 59,998sec                                                                                | 50µs to 59,998sec                                                                                | 20ms to 10sec                                                         | 20ms to 10sec                               | 1sec to 99sec                               |
|                         | Periode             | 500µs to 60sec                                                          | 500µs to 60sec                                           | 500µs to 60sec                                           | 500µs to 60sec                                           | 500µs to 60sec, (min.100µs w/o meas.)                                                            | 500µs to 60sec, (min.100µs w/o meas.)                                                            | 20ms to 10sec                                                         | 20ms to 10sec                               | 1sec to 99sec                               |
| Measurement             | Functions           | V, I, R                                                                 | V, I, R                                                  | V, I, R                                                  | V, I, R                                                  | V, I, R                                                                                          | V, I, R                                                                                          | n.a.                                                                  | n.a.                                        | n.a.                                        |
|                         | Autorange           | in VSIM or ISVM                                                         | in VSIM or ISVM                                          | in VSIM or ISVM                                          |                                                          | in VSIM or ISVM                                                                                  | in VSIM or ISVM                                                                                  | n.a.                                                                  | n.a.                                        | n.a.                                        |
|                         | Integration Time    | 100µs/500µs/1ms/10ms/1PLC/100ms/200ms                                   | 100µs/500µs/1ms/10ms/1PLC/100ms/200ms                    | 100µs/500µs/1ms/10ms/1PLC/100ms/200ms                    | 100µs/500µs/1ms/10ms/1PLC/100ms/200ms                    | 100µs to 740ms, variable setting with 100µs res.                                                 | 100µs to 740ms, variable setting with 100µs res.                                                 | n.a.                                                                  | n.a.                                        | n.a.                                        |
|                         | Sample & Hold       | yes                                                                     | yes                                                      | yes                                                      | yes                                                      | Peak Hold                                                                                        | Peak Hold                                                                                        | n.a.                                                                  | n.a.                                        | n.a.                                        |
| Output OFF status       |                     | Standby/Suspend HiZ/ Suspend LoZ                                        | Standby/Suspend HiZ/ Suspend LoZ                         | Standby/Suspend HiZ/ Suspend LoZ                         | Standby/Suspend HiZ/ Suspend LoZ                         | Standby/Suspend HiZ/ Suspend LoZ                                                                 | Standby/Suspend HiZ/ Suspend LoZ                                                                 | Standby/Suspend HiZ/ Suspend LoZ                                      | Standby/Suspend HiZ/ Suspend LoZ            | Standby                                     |
| Interface               | Ext. control signal | TRIGGER IN<br>INTERLOCK/OPERATE IN/OPERATE OUT<br>COMPLETE OUT/SYNC OUT |                                                          |                                                          |                                                          | TRIGGER IN<br>INTERLOCK/OPERATE IN/OPERATE OUT<br>COMPLETE OUT/SYNC OUT                          |                                                                                                  | TRIGGER IN<br>READ OUT / SYNC OUT<br>INTERLOCK/OPERATE IN/OPERATE OUT |                                             | TRIGGER IN<br>INTERLOCK                     |
|                         | External            | GPIO/USB                                                                | GPIO/USB                                                 | GPIO/USB                                                 | G: GPIO/USB, C: RS232/USB                                | USB                                                                                              | USB; Option: LAN , GPIO                                                                          | GPIO/USB, opt. BCD                                                    | GPIO/USB, opt. BCD                          | GPIO/USB, opt. BCD                          |
| Measurement data memory |                     | 8000 data                                                               | 8000 data                                                | 8000 data                                                | 8000 data                                                | 10000 data per channel                                                                           | 10000 data per channel                                                                           | n.a.                                                                  | n.a.                                        | n.a.                                        |
| Source data memory      |                     | 8000 data                                                               | 8000 data                                                | 8000 data                                                | 8000 data                                                | 10000 data per channel                                                                           | 10000 data per channel                                                                           | 5000 data                                                             | 5000 data                                   | 1000 data                                   |
| Special Features        |                     | Low-Res. Measurm.                                                       |                                                          |                                                          |                                                          | Peak hold funct.<br>Sync. operation among channels                                               | Peak hold funct.; Color Display<br>Sync. operation among channels                                |                                                                       | Thermal electromotive force output function | Thermal electromotive force output function |

