

Trek Model PM12003

High-Voltage Pulse Generator



The Model PM12003 is a High-Voltage Pulse Generator designed to provide precise control of output voltages in the range of 0 to +1 kV AC with an output current range of 0 to 5 A peak AC or 5 mA DC.

The Model PM12003 features a solid-state output topology for fast rise times.

Key Specifications

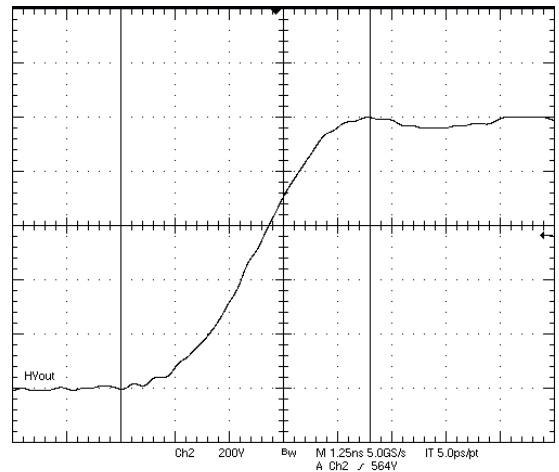
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|-----------------------------------|---------------------------|
| • Output Voltage Range: | 0 to +1 kV |
| • Max Source Current: | 5A peak AC, 5mA DC |
| • Rise Time: | Less than 10ns |
| • Maximum Pulse Repetition Rate : | 1 kHz |
| • Pulse Width Range: | 20 μ s to 350 μ s |

Typical Applications Include

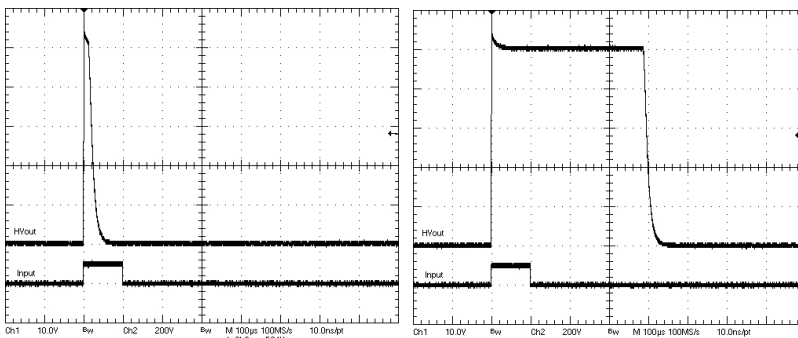
- Dielectric testing
- Electro poration
- Materials research
- Nuclear medicine
- Optics/Photonics
- Plasma applications
- Semiconductor testing - IGBT/Diode tests
- Shock testing of solar panels

Features and Benefits

- Fast rise time
- High peak current
- Adjustable pulse width

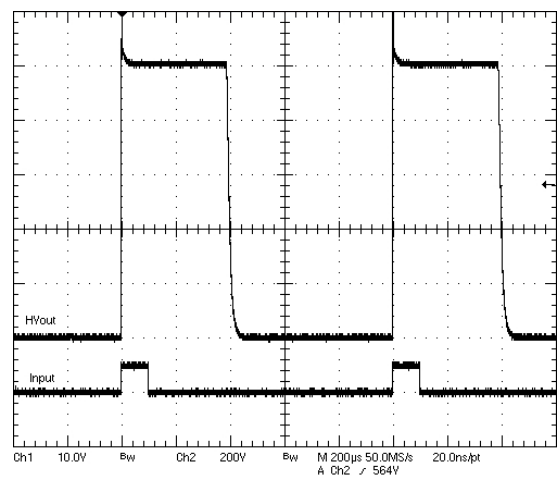


Rise Time of the High Voltage Output



Minimum Pulse Width

Maximum Pulse Width



1kHz Repetition Rate



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Model PM12003 Specifications

Performance

Maximum Output Voltage +1kV peak AC

Note: Actual voltage may be above applied value depending on load configuration(impedance).

Output Voltage Range 0 to +1kV peak AC, adjustable.

Maximum Output Source Current 5A peak AC, 5mA DC

Maximum Output Sink Current 1mA peak AC or DC

Rise Time (10 to 90%, 10pF load) Less than 10ns

Fall Time (10 to 90%, 10pF load) Less than 100µs

Maximum Pulse Repetition Rate 1kHz

Pulse Width Range 20µs to 350µs

Output impedance

Source 50Ω

Sink 100kΩ

Maximum peak output power

Source 10kW

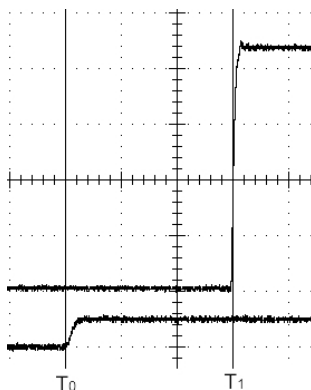
Sink 100mW

Maximum average power 10W

Maximum Jitter 50ns

Propagation Delay The time between the Signal In leading edge (T0) and the High-Voltage Output Pulse leading edge (T1).

Delay Time 600ns ±10%.



Features

High-Voltage ON Indicator A LED will illuminate when the High-Voltage is ON.

Power ON Indicator A LED will illuminate when the Power is ON.

High Voltage Adjust Switch selectable for either local or remote control.

Local Multiturn potentiometer adjusts output pulse voltage from 0 to +1kV.

Remote

Analog Input Voltage Range 0 to +10V.

Voltage Gain 100 V/V

High Voltage Enable

Local Shorting BNC

Remote A TTL compatible input must be provided.

Signal In Triggers pulse at High-Voltage Output when rising edge of signal is detected.

Output type Push-pull

Cooling Air

Mechanical

Dimensions 104mm H x 232mm W x 217mm D (4.10" H x 9.13" W x 8.55" D).

Weight 1.36kg (3 lbs)

HV Output Connector Terminal Block with barrier.

BNC Connectors Signal In, High Voltage Enable, High Voltage Adjust Remote

Operating Conditions

Temperature 0°C to 40°C (32°F to 104°F)

Relative Humidity To 85%, noncondensing

Electrical

Power Requirement 24VDC, 1.75A

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