

# GM10-50B

## 10kHz 50ns Gating Module

The GM10-50 module is a +5V d.c. powered 250V pulse amplifier for periodic operation of MCP devices by biasing the Cathode on and off for specific lengths of time.

This unit requires an external +5V/200mA power supply and +5V TTL input trigger pulse.

The GM10-50 is designed to gate 25mm and 40mm Image Intensifier devices with approximate capacitance between Cathode and MCPIN of 40-100pf.

The output pulse is directly related to the input pulse but will be delayed by approximately 120ns.

There is a pulse width loss across the GM10-50 between 10 and 30ns.



## Operating Characteristics

The gate module is intended to connect directly to the cathode and MCP input of the device being gated by a short length of wire.

The cathode is biased at +50V nominal with respect to the first MCP and the detector is normally off (MCP In potential = 0V).

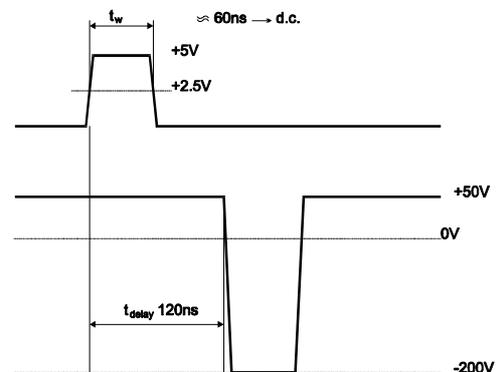
Activation of the gate module will drive the cathode -200V nominal. w.r.t. MCP In and thus turn the detector on.

The gate pulse drive required is 5V TTL. The GM 10-50 has an input impedance of 4k7.

The propagation delay across the GM10-50 can be as much as 120ns, this is specific to each unit and if precise figures are required the unit must be measured.

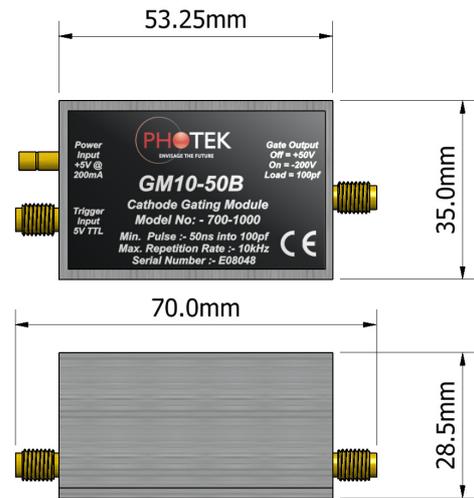
The input pulse to output pulse relationship of the GM10-50 is illustrated below: -

GM10-50 Pulse Characteristics		
	Minimum	Maximum
Input Pulse	60-80ns	D.C.
Output Pulse	50ns	D.C.
Pulse Width Loss	10ns	30ns
Propagation Delay	100ns	120ns
O/P Pulse Fall-time	30ns	50ns
O/P Pulse Rise-time	30ns	50ns
Off Voltage	40V	50V
On Voltage	180V	200V



User Manual	UMGM10-50B
Issue:	4
Date:	4-9-2018
Author:	P Simpson

GM10-50 Connectors		
<b>Input Power</b>		
<b>SMB Socket</b>	Center	+5V
	Screen	0V
<b>Input Signal</b>		
<b>SMA Socket</b>	Center	TTL Pulse
	Screen	0V
<b>Output Signal</b>		
<b>SMA Socket</b>	Center	HT Pulse
	Screen	0V



### Items Supplied

- 1 x 700-1000 - GM10-50B Gating Module.
- 1 x 723-1007 - EPSU-05V – Universal a.c. to 5Vd.c. Power Supply. *\*see note*
- 1 x ED588 – BNC to SMA Trigger Cable – 2m.
- 1x B3000 or B3001 or B3002 - UK /US/EU IEC Power Lead.
- 1 x UMG10-50B – GM10-50 User Manual.

*\*Note: - EPSU-05V is not supplied if the unit is to be used with any mains powered Photek unit. An appropriate power cable will be supplied to connect the GM10-50 to the mains powered unit*

Electrical Specifications - Inputs		Electrical Specifications - Outputs	
Supply Voltage	+5V D.C. ±10%	Negative O/P Voltage Max.	-200V
Supply Voltage Absolute Max	+5.5V D.C	Positive O/P Voltage Max.	+50V
Supply Current Maximum (Operating Frequency = 10kHz)	200mA	Output Current Max.	3mA
Input Drive Pulse	5V TTL	Output Pulse Min.	50ns FWHM
Input Impedance	4.7kΩ	Output Load Max.	100pF
<b>Mechanical Specifications</b>		Jitter (Input to Output )	<10ns
		Operating Frequency Max.	10kHz
		Operating Frequency Min.	D.C.
		<b>Operating Temperature Range</b>	
		Temperature Minimum	0°C
Temperature Maximum	70°C		
Length	53.25mm		
Length (Incl. Connectors)	70.3mm		
Width	35.0mm		
Height	28.5mm		
Weight	67g		

© Photek Ltd. September 2018

**Any unauthorised adjustment or modification to this unit will void all warranties and will only be supported at Photeks discretion.**

**Photek reserves the right to amend general information contained in this manual without prior notice.**

User Manual	UMGM10-50B
Issue:	4
Date:	4-9-2018
Author:	P Simpson