

GM300-3N

300kHz 3ns Gating Module

The GM300-3N module is a +12V d.c. powered 250Vp-p 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 +12V/1A power supply and +5V 50Ω input trigger pulse.

The GM300-3N 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 up to 60ns. There is a pulse width loss across the GM300-3 of approximately 10ns.



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.

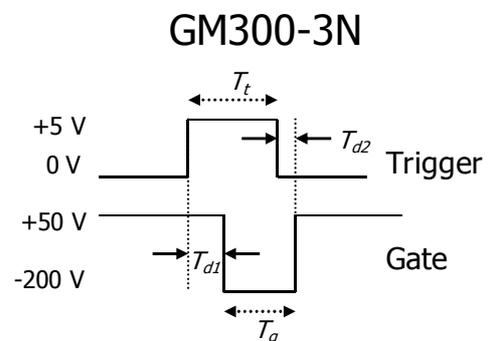
The cathode is biased at +50V nominal with respect to the first MCP and the detector is normally off (MCP In potential = 0V).

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 into 50Ω. The GM300-3 has an input impedance of 50Ω. The propagation delay across the GM300-3 can be as much as 60ns, this is specific to each unit and if precise figures are required the unit must be measured.

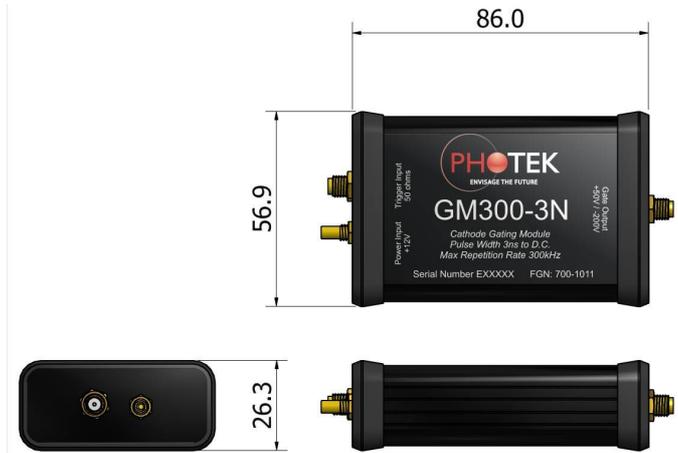
The input pulse to output pulse relationship of the GM300-3 is illustrated below: -

GM300-3N Pulse Characteristics		
	Minimum	Maximum
Input Pulse (T_i)	13ns	D.C.
Output Pulse (T_g)	3ns	D.C.
Pulse Width Loss ($T_i - T_g$)	8ns	12ns
Propagation Delay (T_{d1})	40ns	60ns
Propagation Delay (T_{d2})	30ns	50ns
O/P Pulse Fall time	1.2ns	2ns
O/P Pulse Rise time	1.2ns	2ns
Off Voltage	+40V	+50V
On Voltage	-160V	-200V



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GM300-3N Connectors		
Input Power		
SMB Socket	Center	+12V
	Screen	0V
Input Signal		
SMA Socket	Center	5V (50Ω) Pulse
	Screen	0V
Output Signal		
SMA Socket	Center	HT Pulse
	Screen	0V



Items Supplied

- 1 x GM300-3N Gating Module.
- 1 x BNC to SMA Cable
- 1 x UMGM300-3N – GM300-3N Operating Notes

For GM300-3N units supplied on their own, a 12V PSU is supplied: -

- 1 x EPSU-12V – 12V Power Supply Unit
- 1 x Mains Lead (Country Specific)

Electrical Specifications - Inputs		Electrical Specifications - Outputs	
Supply Voltage	+12V D.C. ±10%	Negative O/P Voltage Max.	-200V
Supply Voltage Absolute Max	+13.2V D.C	Positive O/P Voltage Max.	+50V
Supply Current Maximum (Operating Frequency = 10kHz)	1A	Output Pulse Min.	3ns FWHM
Input Drive Pulse	5V (50Ω)	Output Load Max.	100pF
Input Impedance	50Ω	Jitter (Input to Output)	<1ns
Mechanical Specifications		Operating Frequency Max.	300kHz
Length	106mm	Operating Frequency Min.	D.C.
Width	57mm	Operating Temperature Range	
Height	31.5mm	Temperature Minimum	0°C
Weight	≈110g	Temperature Maximum	70°C

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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.

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