

Pockels cell driver with the extremely low power consumption QBY-4050

Front side



Rear side,
opened cover



APPLICATIONS

- High-voltage pulse source to drive electro-optic modulator based on Pockels effect
- Q-switching, pulse slicing
- Battery powered equipment, some LIDAR systems



FEATURES

- Input 24 V DC
- Output voltage up to 5 kV
- Power consumption < 10 W for 5 pF load in 50 kHz and 4 kV regime
- Performance 50 kHz @ 4 kV
- Fast rise/fall – < 40 ns (< 20 ns on request)
- Compact dimensions – 112x108x25 mm

DESCRIPTION

QBY-4050 is a high-effective Pockels cell driver by OEM Tech, which provides quasi-rectangular bipolar voltage pulses (40 - 1000 ns long) on the outputs to control the birefringence of an electro-optical crystal to change the polarization state of light passing through. It was designed as a compact model with an extremely low power consumption. Maximal power is not exceeded 10 W (for 5 pF load in 50 kHz and 4 kV regime). Output voltage is up to 5 kV, max. rep. rate is up to 50 kHz and is strongly depends on load capacitance (we recommend therefore to use the shortest possible cables and choose a Pockels cell with lower capacitance). The driver provides rise and fall times about 30-40 ns long, it is possible to adjust pulse amplitude by analog input signal and pulse width by external LVDS signal.

INTERFACES

TYPE	CONNECTOR	DESIGNATION / DESCRIPTION	
 Input	D-SUB 15 pins	Power to the module +24 V DC, GND, Enable, Output voltage program, Inverting (-IN) and noninverting (+IN) inputs (LVDS twisted pair), monitors for peak output voltage, buffer voltage and temperatures.	
 HV Output	High voltage D-SUB mixed type connector	PIN1	HV+, Output positive
		PIN2	N/C
		PIN3	HV-, Output negative

SPECIFICATIONS

Input	
Voltage	24 V DC
Current	4 A max
HV output	
Pulse amplitude	V_{MAX} 5 kV
Pulse-to-pulse stability	<1%
Pulse width	40 - 1000 ns (other on request)
Pulse rise time ¹	< 40 ns (< 20 ns on request)
Pulse fall time ¹	< 40 ns (< 20 ns on request)
Max. repetition rate ¹	Up to 50 kHz max at 4 kV
Delay / jitter	< 20 ns / < 0.2 ns
Load capacitance	5 pF recommended; 20 pF maximal
Environmental	
Operating temperature	-40...+60 °C
Cooling	driver should be cooled through the bottom side

¹ depends on output voltage and setup (i.e., on load capacitance).

Feel free to contact us if your needs are different from the specifications above.

DIMENSIONAL DRAWING

