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DRIVER UV-C
9L479X

Descrizione

Driver in corrente per LED UV-C con carica-batteria integrato per batterie Li-ion (singola cella@4.2V) ad elevate efficienza.
Il dispositivo permette di alimentare un carico Led con tensione massima di 12V e con correnti di 350/500/700 mA attraverso una batteria Li-ion@4.2V. La ricarica del dispositivo avviene alla tensione di 5 VDC tramite connettore micro USB-B (Micro USB). Ingresso di controllo per accensione /spegnimento tramite interruttore normalmente aperto.
Il dispositivo è in grado di selezionare in maniera automatica la corrente di carica dando priorità al carico led (Prioritized Power Path from Input to Output). Equipaggiato di 4 LED di segnalazione dello stato di carica della batteria (vedi tabella LED di segnalazione).

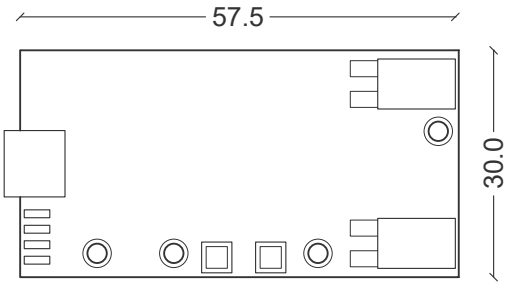
Caratteristiche tecniche

- Driver per Led in configurazione Buck-boost con back-up a battery Li-ion con sistema di ricarica tramite connettore USB-B
- Range di alimentazione e carica della batteria 4.8 / 5.1 VDC
- Protezione batteria da sovracorrente, sovratensione e cortocircuito
- Range di tensione carico: 2 - 12 VDC
- Corrente ricarica batteria Li-ion: 1A
- PowerPath priorizzata tra input e output
- Ciclo completo di ricarica: Preconditioning, Fast Charge, Top off and End of Charge
- Corrente di uscita 350 - 500 - 700 mA (vedi tabella codici)
- Corrente di uscita customizzabili su richiesta
- Protezione termica su carica batteria a 110°C
- Ingressi di Controllo: Interruttore non isolato x1
- Circuito Stampato UL
- Classe di protezione: IP20
- Protezione circuito aperto
- Protezione da picchi tensione
- Protezione corto circuito

Caratteristiche

Tensione di alimentazione modulo	+5Vdc 500mA
Batteria ricaricabile (optional)	LiPO 3,7v 1850mA
Alimentazione	USB C TYPE / alimentatore +5Vdc min. 500mA
Output per LED UV-C	1 canale corrente costante settabile, corrente massima 100mA. tensione autoregolante (Max depending on current)
Potenza max	3W (+/-10%)
Accensione modulo (optional)	Pulsante switch (Push button) per accensione e avvio programma
Gestione sicurezza (optional)	Sensore di sicurezza per avvio ciclo costituito da diodo e fotodiodo ad interruzione ottica (IR)
Segnalazione di stato (optional)	Led RGB per segnalazioni di stato e funzionamento programma

Spessore PCB 1.6mm



Versioni disponibili a catalogo

cod.prodotto	tensione di ingresso	corrente in uscita	potenza in uscita	dimensioni
9L479MA00C1A00X	4.8 - 5.1 VDC	350mA	4.2W@12VDC	30 x 58 mm (sp.6mm)
9L479MB00C1A00X	4.8 - 5.1 VDC	500mA	6W@12VDC	
9L479MC00C1A00X	4.8 - 5.1 VDC	700mA	8.4W@12VDC	

Possibili applicazioni

- Sanificazione e disinfezione
- Sanificazione e disinfezione di strumenti o oggetti
- Sanificazione e disinfezione dell'acqua (tramite opportuna resinatura)
- Sanificazione e disinfezione delle superfici

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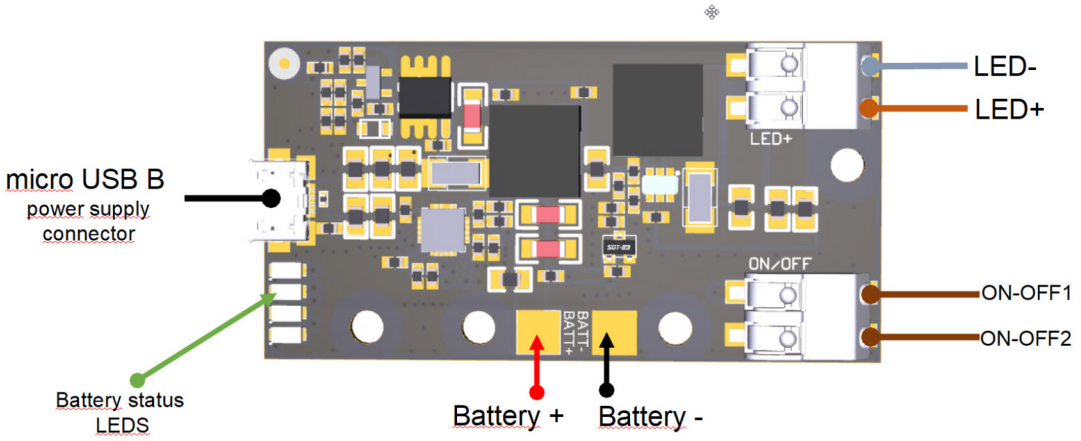
Tabella LED di segnalazione stato della ricarica				
voltage VDC	**Led 1**	**Led 2**	**Led 3**	**Led 4**
VBAT<2.9	Flash	Off	Off	Off
2.9<=VBAT<3.65	Flash	Off	Off	Off
3.65<=VBAT<3.75	On	Flash	Off	Off
3.75<=VBAT<3.90	On	On	Flash	Off
3.90<=VBAT<4.10	On	On	On	Flash
VBAT>=4.10	On	On	On	Flash
VBAT>=4.10 End of Charge	On	On	On	On

Tabella LED di segnalazione stato della batteria				
voltage VDC	**Led 1**	**Led 2**	**Led 3**	**Led 4**
VBAT<2.9	Off	Off	Off	Off
2.9<=VBAT<3.65	Flash	Off	Off	Off
3.65<=VBAT<3.75	On	Off	Off	Off
3.75<=VBAT<3.90	On	On	Off	Off
3.90<=VBAT<4.10	On	On	On	Off
VBAT>=4.10	On	On	On	On
VBAT>=4.10 End of Charge	On	On	On	On



Schema cablaggio connessioni modulo	
ingresso	**descrizione**
Micro USB B connector	Ingresso di alimentazione e ricarica
Battery +	Collegamento anodo batteria Li-ion singola cella (4.2V)
Battery -	Collegamento catodo batteria Li-ion singola cella (4.2V)
LED+	Anodo carico LED connettore ad innesto rapido
LED-	Catodo carico LED connettore ad innesto rapido
ON-OFF 1	Interruttore normalmente aperto
ON-OFF 2	Interruttore normalmente aperto
Battery status LED	LED di segnalazione stato di carica della batteria

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Installation must be carried out under observation ot the relevant regulations and standards. The LED modules are designed for operation within a casing or luminaire. Installation musi be carried out in a voltage-free state (i.e. disconnection from the mains).
The following advice must be observed; non-observance can result in the destruction ot the LED assembly modules, fire and/or other hazards.

- Consider safety regulations acc. EN 60598 in the luminaire design, especially when the operating LED driver is not galvanic isolated.
- In mode of operation regard to sufficient isolation.
- Live parts must not be touched in operation mode. Danger in life!!!
- ESD (electrostatic discharge) protection measures must be observed when handling and installing the LED modules. See VS's application notes on ESD protection.
- Adequate anti-static electricity measures, including the use ot conductive shoes, ionizers, work bench grounding, wrist straps, flooring and stools should be used.
- LED assembly modules must not be subjected to any undue mechanical stress, e. g.:
- do not treat as bulk cargo
- avoid shear and compressive forces during handling and installation
- do not damage circuit paths
- avoid any pressure on the light emitting surface
- Safe operation only possible by the use of external constant current sources (Imax. see table "Electrical Characteristics").
- Operation only with power supply units that feature the following protection:
- Short-circuit protection
- Overload protection
- Overheating protection
- The module can be fixed with M3 screws. Fixation only with flat or cylinder head screws (M3) (no countersank screws) Max. torque: 1.2 Nm (M3)
- Please ensure the correct polarity of the leads prior to commissioning. Reversed polarity can destroy the modules.
- For interconnection the LED modules is equipped with push-in terminals (WAGO 2060).
- Safety regulations acc. to EN 60598 (or further standards) has to be observed if the maximum output voltage exceed the permitted touchable value.
- The following points must be observed when connecting LED modules in parallel:
- All LED strings that are wired in parallel must contain the same number of LEDs (symmetrical loading).
- Owing to differing forward biases, there can be a difference of up to 10% in brightness between modules connected in parallel.
- To ensure problem-free operation, the specified maximum temperature at the tp point (see "Operating Life") must be observed (and measured in accordance with EN 60598-l). To satisfy this point, it may be necessary to put measures in place to ensure any heat is dissipated from the PCB to the environment.
- In the event of outdoor applications or applications in damp locations, care must be taken to protect LED assembly modules against humidity, splashes and jets of water. Any corrosion damage resulting from humidity or contact with condensation will not be recognized as a defect or manufacturing fault. LED assembly modules are not specially protected against foreign bodies or dust. Depending on the type of application, further protection must be ensured to prevent dust and foreign bodies from entering.
- Due to the manufacturing process, the PCBs of the LED assembly modules can have sharp edges and corners. Care must therefore be taken during handling and installation to avoid injury.
- For optimal load of used constant current driver the modules can only be connected in series. The quantity of LED modules is limited by the sum of forward voltage and the capacity of used constant current driver. Safety regulations acc. to EN 60598 has to be observed if the sum of forward voltage exceed the permitted touchable value.
- Operating LED modules in the presence of certain chemical substances or in chemically enriched (aggressive) environments can impair module functionality or even cause total module failure.
- The photobiological safety of the LED modules must be classified into risk groups in accordance with IEC / TR 62778: risk group 1 (except HB, 6500 K, > 500 mA: risk group 2)

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Description

Current driver for UV-C LEDs with integrated battery charger for high efficiency Li-ion batteries (single cell@4.2V).
The device allows to power a Led load with a maximum voltage of 12V and with currents of 350/500/700 mA through a battery Li-ion@4.2V. The device is recharged at a voltage of 5 VDC via a micro USB-B connector (Micro USB). Control input for switching on / off via normally open switch.
The device is able to automatically select the charging current by giving priority to the LED load (Prioritized Power Path from Input to Output).
Equipped with 4 LEDs indicating the battery charge status (see LED signaling table).

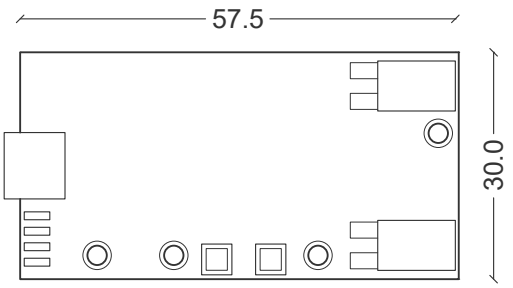
Technical features

- Driver for LEDs in Buck-boost configuration with Li-ion battery back-up with charging system via USB-B connector
- Battery power and charge range 4.8 / 5.1 VDC
- Battery protection from overcurrent, overvoltage and short circuit
- Load voltage range: 2 - 12 VDC
- Li-ion battery charging current: 1A
- PowerPath prioritized between input and output
- Complete charging cycle: Preconditioning, Fast Charge, Top off and End of Charge
- Output current 350 - 500 - 700 mA (see code table)
- Customizable output current on request
- Thermal protection on battery charger at 110 ° C
- Control Inputs: Non-isolated switch x1
- UL Printed Circuit
- Protection class: IP20
- Open circuit protection
- Voltage surge protection
- Short circuit protection

Features

Module power supply voltage	+5Vdc 500mA
Rechargeable battery (optional)	LiPO 3,7v 1850mA
Supply	USB C TYPE / power supply + 5Vdc min. 500mA
UV-C LED output	1 settable constant current channel, maximum current 100mA. self-regulating voltage (Max depending on current)
Max power	3W (+/-10%)
Module ignition (optional)	Switch button (Push button) for switching on and starting the program
Safety management (optional)	Safety sensor for cycle start consisting of diode and photodiode with optical interruption (IR)
Status indication (optional)	RGB LED for status and program operation signals

Spessore PCB 1.6mm



Versions available in the catalog

product code	input voltage	output current	power output	size
9L479MA00C1A00X	4.8 - 5.1 VDC	350mA	4.2W@12VDC	30 x 58 mm (sp.6mm)
9L479MB00C1A00X	4.8 - 5.1 VDC	500mA	6W@12VDC	
9L479MC00C1A00X	4.8 - 5.1 VDC	700mA	8.4W@12VDC	

Possible applications

- Sanitation and disinfection
- Sanitization and disinfection of tools or objects
- Sanitation and disinfection of water (through appropriate resin coating)
- Surface sanitation and disinfection

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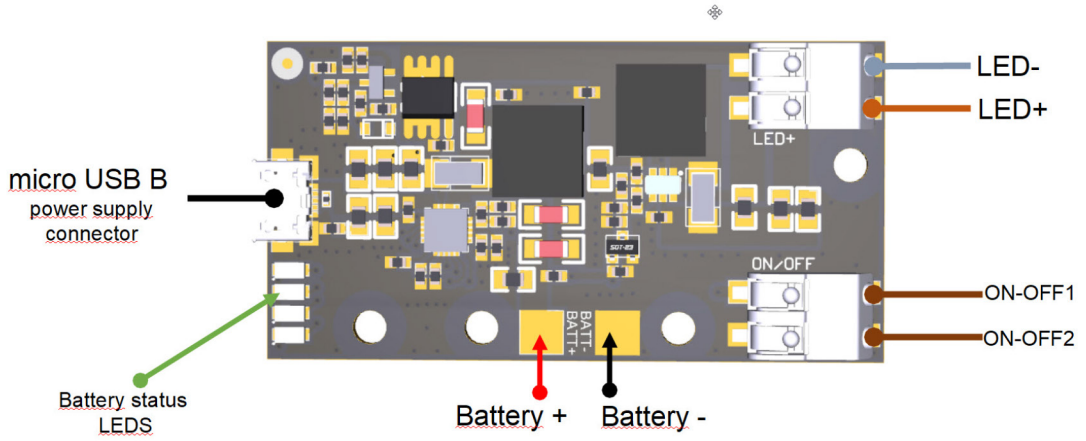
Charging status indicator LED table				
voltage VDC	**Led 1**	**Led 2**	**Led 3**	**Led 4**
VBAT<2.9	Flash	Off	Off	Off
2.9<=VBAT<3.65	Flash	Off	Off	Off
3.65<=VBAT<3.75	On	Flash	Off	Off
3.75<=VBAT<3.90	On	On	Flash	Off
3.90<=VBAT<4.10	On	On	On	Flash
VBAT>=4.10	On	On	On	Flash
VBAT>=4.10 End of Charge	On	On	On	On

Battery status indicator LED table				
voltage VDC	**Led 1**	**Led 2**	**Led 3**	**Led 4**
VBAT<2.9	Off	Off	Off	Off
2.9<=VBAT<3.65	Flash	Off	Off	Off
3.65<=VBAT<3.75	On	Off	Off	Off
3.75<=VBAT<3.90	On	On	Off	Off
3.90<=VBAT<4.10	On	On	On	Off
VBAT>=4.10	On	On	On	On
VBAT>=4.10 End of Charge	On	On	On	On



Module connections wiring diagram	
entrance	**Description**
Micro USB B connector	Power and charging input
Battery +	Single cell Li-ion battery anode connection (4.2V)
Battery -	Single cell Li-ion battery cathode connection (4.2V)
LED+	Load anode LED quick coupling connector
LED-	Charged cathode LED quick coupling connector
ON-OFF 1	Normally open switch
ON-OFF 2	Normally open switch
Battery status LED	Battery charge status indicator LED

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