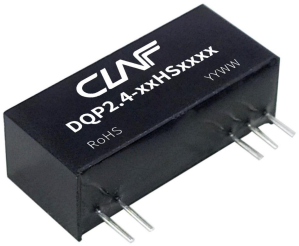
Descriptions

2W isolated，DC/DC Converter



RoHS

Features

- High efficiency up to 87%
- SIP package
- I/O isolation test voltage:5000VAC(reinforced insulation)
- Long-term insulation voltage 1700V
- Max. Capacitive Load: 2200μF
- Ultra-low isolation capacitance
- Operating ambient temperature range: -40℃ to +105℃
- Continuous short-circuit protection

Applications

- Universal converter
- AC servo drive system
- Electric welding machine
- Uninterruptible power supply (UPS)

Selection Guide

Certification	Part No.	Input		Output		Full Load Efficiency (%) Min./Typ.	Max. Capacitive Load(μF)
		Voltage(VDC) (Range)	Current(mA, Typ.) Full Load/No Load	Voltage (VDC) +Vo1/+Vo2	Current (mA) +Io1/+Io2		
--	DQP2.4-15HS1504	15 (13.5-16.5)	171/8	+15.0/-4.0	+120/-120	82/87	2200
	DQP2.4-24HS1504	24 (21.6-26.4)	131/10			77/82	2200

Note: ①The product image is for reference only, please refer to the actual product for details.

Specifications

Product Specifications	Item	Operating Conditions			Min.	Typ.	Max.	Unit
Input Specifications	Input Voltage (1sec. max.)	Vin=15VDC		DC	-0.7	--	21	VDC
		Vin=24VDC		DC	-0.7	--	30	
	Input Filter				Capacitance Filter			
	Hot Plug				Unavailable			
Output Specifications	Output Voltage	DQP2.4-15H S1504	+Vo	Vin=15VDC, Pin10 & Pin9 +Io= +120mA	13.80	14.55	15.30	VDC
			-Vo	Vin=15VDC, Pin9 & Pin8 -Io= -120mA	-3.80	-4.00	-4.20	
		DQP2.4-24H S1504	+Vo	Vin=24VDC, Pin10 & Pin9 +Io= +120mA	14.55	15.30	16.05	
			-Vo	Vin=24VDC, Pin9 & Pin8 -Io= -120mA	-3.96	-4.16	-4.36	
	Voltage Accuracy	10% - 100% load			See output regulation curve (Fig. 2)			%
	Linear Regulation	Full voltage input range		+Vo Output	--	±1.1	±1.5	--
				-Vo Output	--	±1.1	±1.5	
	Load Regulation	10% - 100% load		+Vo Output	--	8	15	%
				-Vo Output	--	8	15	
	Temperature Coefficient	Full load			--	±0.04	±0.1	%/℃
	Ripple & Noise①	20MHz bandwidth			--	50	100	mVp-p
	Short-circuit Protection				Continuous, self-recovery			
General Specifications	Isolation	Input-output, Test for 1 minute with a leakage current of 1mA max(reinforced insulation)			5000	--	--	VAC
	Continuous insulation voltage（IEC61800-5-1）	Input- output			1700	--	--	V
	Insulation Resistance	Input- output resistance at 500VDC			1000	--	--	MΩ
	Isolation capacitor	Input- output capacitor at 100kHz/0.1V			--	3.5	5	pF
	Electrical clearance	Input- output			14.14	14.74	--	mm
	Creepage distance	Input- output			14.14	14.74	--	mm
	CMTI	Input- output			±200	--	--	kV/us
	Operating Temperature	Derating when operating temperature≥85℃, (see Fig. 1)			-40	--	105	℃
	Storage Temperature				-55	--	125	
	Pin Soldering Resistance Temperature②	Soldering spot is 1.5mm away from case for 10 seconds			--	--	300	
		Wave soldering,10 seconds			255	260	265	
	Case Temperature Rise	Ta=25℃, nominal input voltage, full load			--	--	40	
	Storage Humidity	Non-condensing			5	--	95	%RH
	Switching Frequency	Full load, nominal input voltage			--	200	--	kHz
	Safety Standard				EN62368-1 (Report)			
	Safety Class				CLASS III			
	MTBF	MIL-HDBK-217F@25℃			3500	--	--	k hours
Mechanical	Case Material	Black plastic; flame-retardant and heat-resistant						

Specifications	Dimensions	27.40 x 9.50 x 12.00mm
	Weight	5.3 g (Typ.)
	Cooling Method	Free air convection

Notes:

①The "parallel cable" method is used for Ripple and Noise test;

②The pin resistance temperature is not the actual set temperature of the soldering iron, but the temperature required for a good solder joint. The actual set temperature by the customer needs to be comprehensively set based on the thickness of the PCB, the size of the copper cladding, the power of the soldering iron, and the selection of the soldering iron tip.

Electromagnetic Compatibility (EMC)

Emissions	CE	CISPR32/EN55032 CLASS A (see Fig.7 for recommended circuit)
	RE	CISPR32/EN55032 CLASS A (see Fig.7 for recommended circuit)
Immunity	ESD	IEC/EN61000-4-2 Contact ±8kV perf. Criteria B

Characteristic Curve

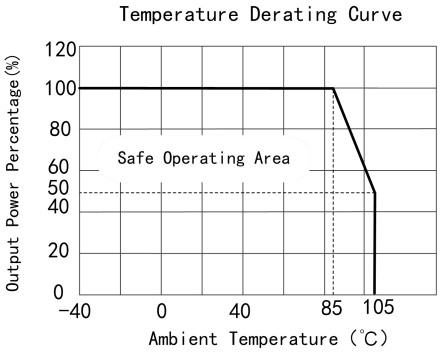
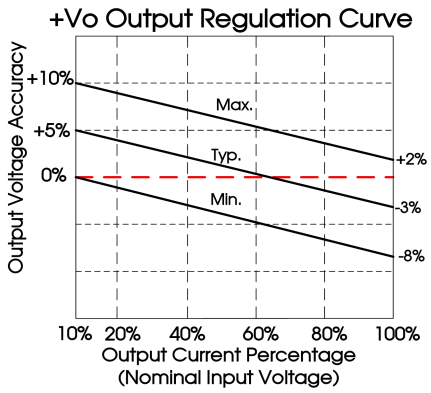
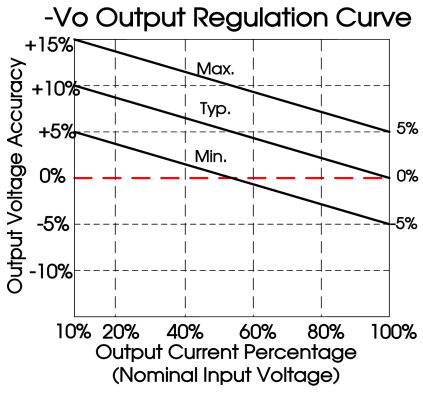


Fig. 1

DQP2.4-15HS1504



DQP2.4-15HS1504



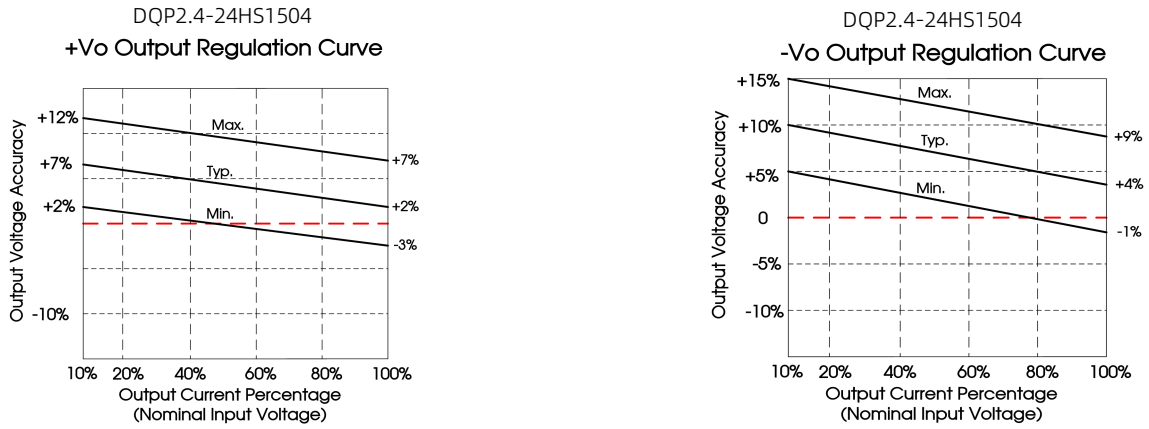


Fig. 2

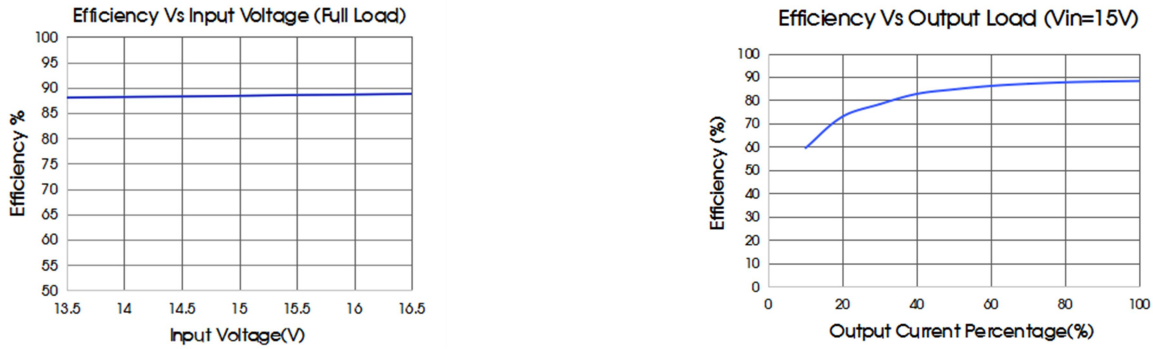


Fig. 3

Design Reference

1. Over-load Protection

There is no over-load protection under normal operating conditions, we suggest to add an circuit breaker outside in the circuit.

2. Test configurations

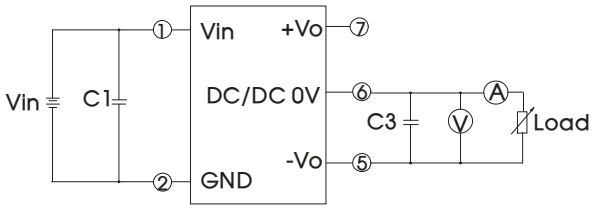


Fig. 3

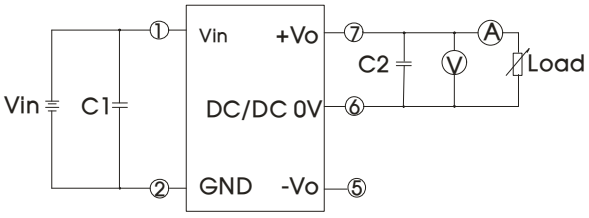


Fig. 4

Note: C1, C2, C3: 100uF/35V

3. Typical application

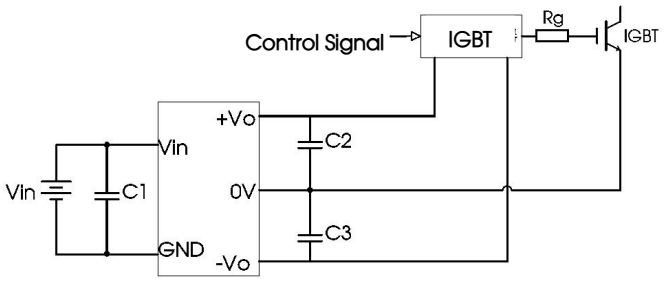


Fig. 5

C1/C2/C3
100μF/35V

4. EMC typical recommended circuit

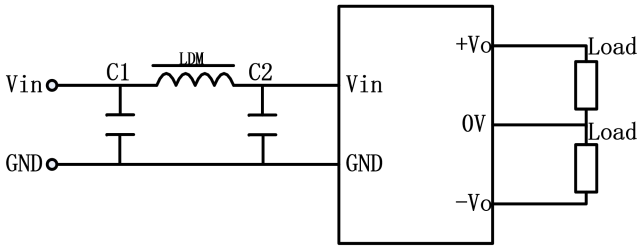


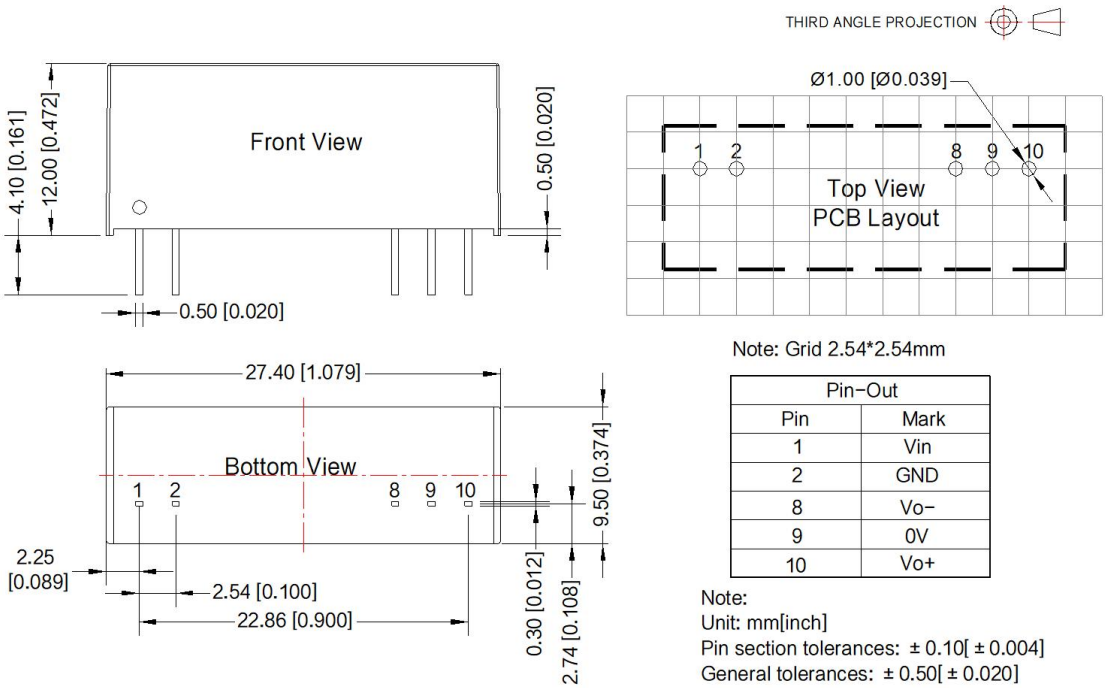
Fig. 6

LDM	33uH
C1/ C2	1.0μF/35V(Low internal resistance capacitance)

5. Electrolytic capacitors are recommended for external capacitors at the input or output of the product. Tantalum capacitors are not, otherwise there is a risk of failure.

6. The products do not support parallel connection of their output for power expansion purpose or hot-plug.

Dimensions and Recommended Layout



Note: Grid 2.54*2.54mm

Pin-Out	
Pin	Mark
1	Vin
2	GND
8	Vo-
9	0V
10	Vo+

Note:
Unit: mm[inch]
Pin section tolerances: ± 0.10[± 0.004]
General tolerances: ± 0.50[± 0.020]

Note:

1.The lead wire connecting the power module and IGBT driver should be as short as possible when in use;

2.The output filter capacitor is as close as possible to the power module and IGBT driver;

3.IGBT driver gate drive current has a high peak value.

4.It is recommended that the output filter capacitor of the power module use a low internal resistance electrolytic capacitor;

5.The average output power of the driver must be lower than that of the power supply module;

6.Consider fixing with glue near the module if being used in vibration occasion;

7.The maximum capacitive load offered were tested at nominal input voltage and full load;

8.Unless otherwise specified, parameters in this datasheet were measured under the conditions of Ta=25℃, humidity<75%RH with nominal input voltage and rated output load;

9.All index testing methods in this datasheet are based on company corporate standards;

10.Products are related to laws and regulations: see "Features" and "EMC";

11.Our products shall be classified according to ISO14001 and related environmental laws and regulations, and shall be handled by qualified units.