40D2405

CONVERTIDOR DC-DC ENTRADA (18V-36V) 5V 8A 40W

Multiple specifications of power module options

MULTIPLE SPECIFICATIONS AVAILABLE

Wide voltage 24V (18-36V) input 40W regulated output

MODEL	POWER	VOLTAGE	ELECTRICITY
HLK-40D2405	40W	5V	8000mA
HLK-40D2412	40W	12V	3333mA
HLK-40D2415	40W	15V	2667mA
HLK-40D2424	40W	24V	1666mA

*The same series of products have the same size and pin package

*International standard pin size 50.8x50.8x 12.7mm

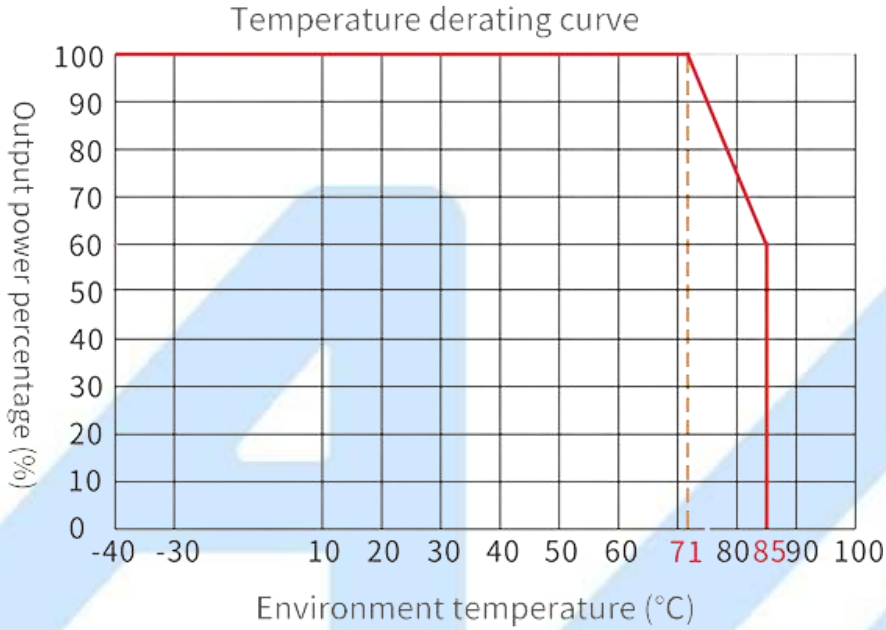
product features

PRODUCT FEATURES

- Ultra-thin international standard size and lead package
- Wide range input voltage: 18~36VDC
- Ultra-low standby power consumption 0.036W (typical value)
- Input and output isolation withstand voltage 1500VDC
- Ultra-fast start: 1ms (typical value)
- High efficiency, conversion efficiency up to 91% (Typ)
- Operating temperature range: -40°C~+85°C
- Good output short circuit and over current protection and self-recovery
- High reliability, long life design, continuous work>100000H
- It is potted with high-quality environmentally friendly waterproof and thermal conductive glue, moisture-proof and vibration-proof, and meets the waterproof and dust-proof IP65 standard
- Meet UL/CE/EMC and safety testing requirements
- Can be used in medical, industrial control, electric power, instrumentation, communication, railway and other fields

Working environment temperature and load characteristics

WORKING ENVIRONMENT tempeRature & LOAD CHARACTERISTICS

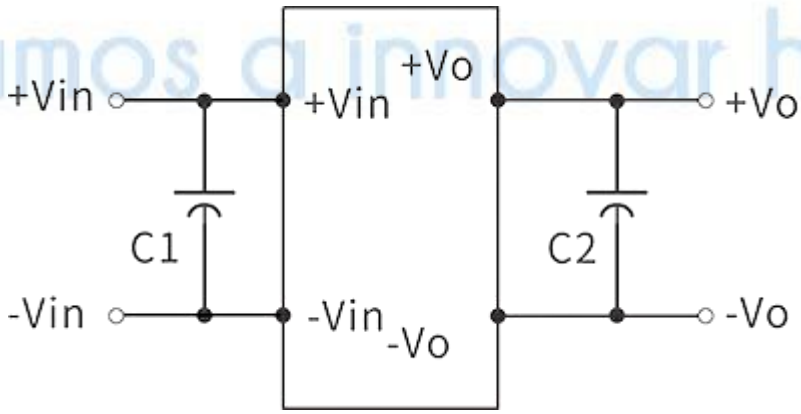


Typical application circuit

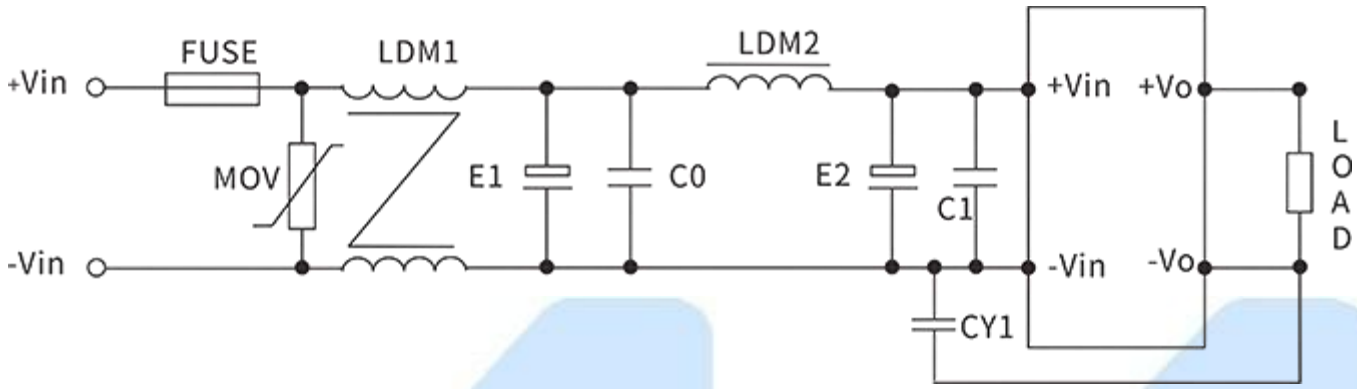
APPLICATION CIRCUIT

Recommended test circuit

Generally recommended capacitance: C1: 47-100μF/50V; C2, C3: 10-22μF.
All DC/DC converters of this series are tested according to the recommended test circuit shown in the figure below before leaving the factory.
If it is required to further reduce the input and output ripple, the input and output external capacitors C1, C2, C3 can be increased or selected in series with capacitors with a small equivalent impedance, but the capacitance cannot be greater than the maximum capacitive load of the product.



EMC solution-recommended circuit



Recommended parameters:

FUSE: Connect the corresponding fuse according to customer needs

MOV varistor: 14D333K

LDM1/common mode inductance: 2mH

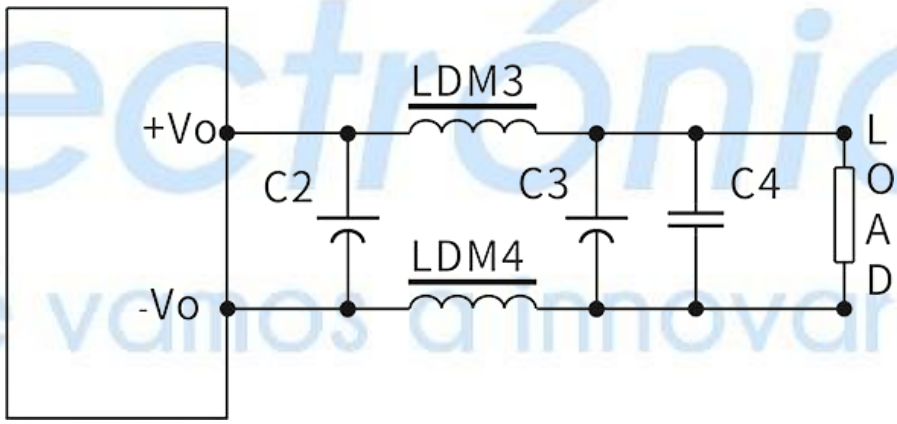
E1, E2 electrolytic capacitors: 470μF/50V

C0, C1 ceramic capacitors: 1μF/50V

LDM2 differential mode inductor: 4.7-68μH

CY1 safety Y2 capacitor: 1nF/250Vac

Output filter peripheral recommended circuit



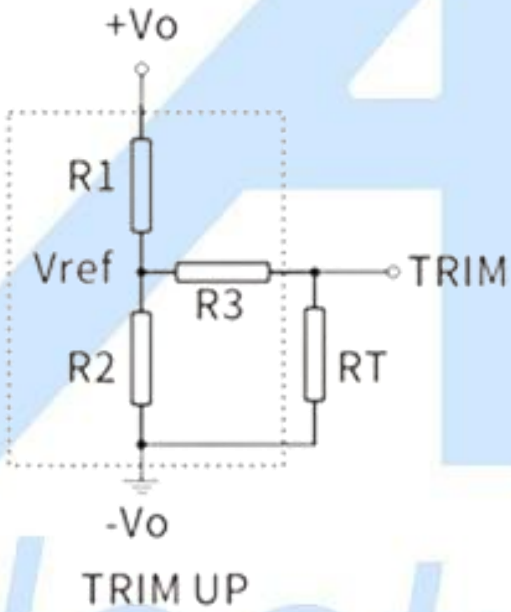
Note:

1. C2 and C3 use high-frequency and low-resistance electrolytic capacitors, and the total capacity cannot exceed the maximum capacitive load marked in the manual, otherwise the module will not start normally.
2. For capacitive load, a minimum load of 3% must be guaranteed, otherwise it will cause abnormal output of the module.

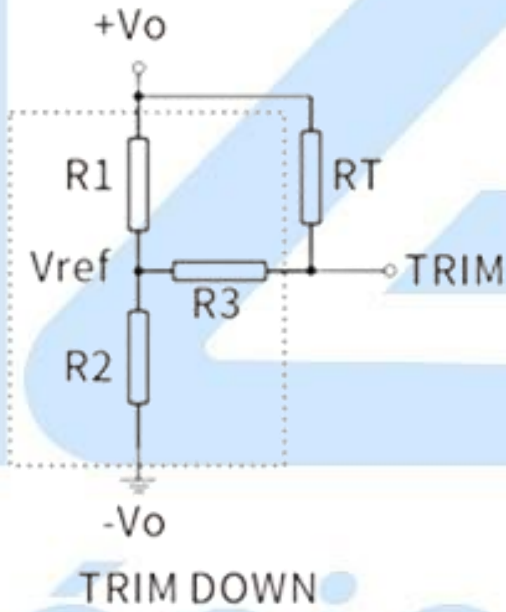
Recommended parameters:

Device code	5V output	9V/12V/15V output	24V output
LDM3/4 inductance	1μH	2.2μH	4.7μH
C2/3 electrolytic capacitor	220μF	100μF	68μF
C4 ceramic capacitor	1μF/50V		

Use of Trim and calculation of Trim resistance



TRIM UP



TRIM DOWN

The calculation formula of Trim resistance:

UP: $RT=\frac{®*R2}{R2-®}-R3$ $®=\frac{Vref}{Vo-Vref}*R1$

down: $RT=\frac{®*R1}{R1-®}-R3$ $®=\frac{Vo-Vref}{Vref}*R2$

RT is TRIM resistance

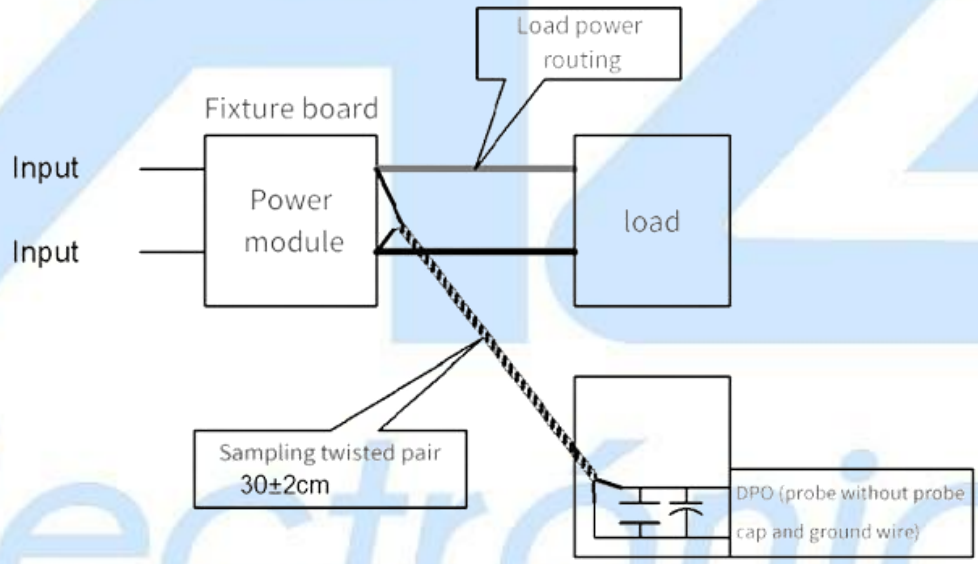
® It is a custom parameter with no real meaning

The Trim output voltage adjustment terminal with Trim terminal

system is as follows:

The output voltage	R1(KΩ)	R2(KΩ)	R3(KΩ)	Vref
5V	45.3	14.778	84.5	1.25
9V	30	11.441	120	2.5
12V	45.3	14.571	84.5	2.5
15V	56	11.441	154	2.5
24V	84.5	9.791	84.5	2.5

Ripple & noise test: twisted pair method 20MHz bandwidth



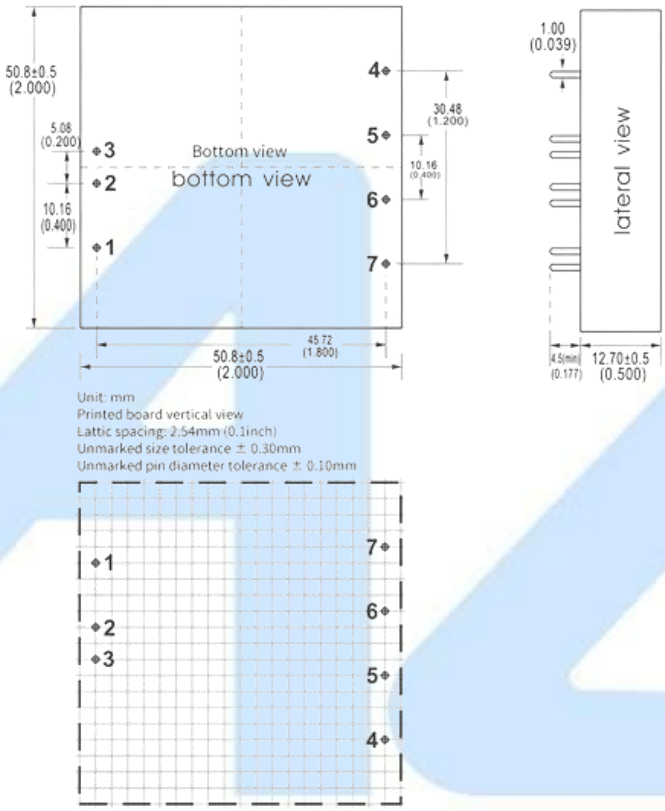
testing method:

1. Ripple noise is connected using 12# twisted pair, the oscilloscope bandwidth is set to 20MHz, 100M bandwidth probe, and 0.1uF polypropylene capacitor and 47uF high frequency low resistance electrolytic capacitor are connected in parallel to the probe end, and the oscilloscope sampling uses Sample sampling mode .

2. Connect the power input terminal to the input power source, and connect the power output to the electronic load through the fixture board. Use a 30cm±2cm sampling line to sample directly from the power output port for testing. The power line selects the corresponding wire diameter wire with insulation according to the output current. (As shown in FIG)

Dimensions and weight

DIMENSIONS & WEIGHT



Pin description:

1: -Vin input negative; 2: +Vin input positive; 3: +Vo output positive; 4: NC; 5: -Vo output negative; 6: NC

*Note: If the definition of each pin of the power module is not consistent with the selection manual, the label on the physical label shall prevail.

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ACOTACIÓN: N/A	http://www.agelectronica.com	ESCALA: N/A	REALIZO: OGJ REV: JFRR
TOLERANCIA: N/A	**CONVERTIDOR DC-DC ENTRADA (18V-36V) 5V 8A 40W**		
TOLERANCIA: N/A	Fecha: 15/06/2022	**No. Parte: 40D2405**	