

MESSRS :

PRODUCT DRAWING

CUSTOMER'S PRODUCT NAME:

TDK PRODUCT NAME: DC/AC INVERTER UNIT
CXA-L05xx-NJL



TDK Corporation

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DWG.No.	CTR-0732-E
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Precautionary Notes Regarding the Use of This Inverter

When using this product, give due consideration to the precautionary notes described below and ensure a safe design. Inappropriate use may result in electric shock, injury or fire.



Warning



This product is subject to high voltage. Do not touch it while the power is on.
Failing to do so may result in electric shock.



Caution

This product is designed for the lighting of a Cold Cathode Fluorescent Lamp.
Do not use it with any other load.
Store this product under the conditions defined in the specification document.
Do not store this product in an environment where dust, dirt or corrosive gas (salt, acid, base, etc.) is present.
This product is subject to high voltage. If there is a possibility that the user may touch the product, provide a proper indication in order to draw the user's attention.
This product is designed for use with general electronic equipment.
If it is to be used with medical equipment that directly affects human life or for the control of transportation equipment to which passengers entrust their lives, provide thorough fail-safe measures.
Avoid using this product under high temperatures or high humidity or in an environment in which dust, dirt or any corrosive gas (salt, acid, base, etc.) is present.
Also, be careful not to allow the formation of dew condensation. It may result in damage or electric shock.
If the product does not have a built-in protective circuit (circuit breaker, fuse, etc.), it is recommended that a fuse be used at the input stage to prevent the generation of smoke or fire in the event of a malfunction.
Even when the product has a built-in protective circuit (circuit breaker, fuse, etc.), the circuit may not function properly due to inappropriate operating conditions or power-supply capacity. It is recommended that an appropriate protective circuit (circuit breaker, fuse, etc.) be provided separately from the built-in circuit.
Use the product only within the specified input voltage, output power, output voltage and operating temperature ranges. Exceeding these values may result in damage, etc.
Provide a measure for the prevention of surge voltage due to lightning, etc.
Abnormal voltage may result in damage, etc.
To prevent problems arising from short-circuiting of the high-voltage section, provide appropriate measures to prevent the entry of foreign substances following installation.
This product is not designed to provide resistance to radiation.
Ripples could be superimposed on the voltage and the current in the input source connected to the inverter, depending on the impedance in the input source, wiring, etc.
When you select an input source, please check waveforms, etc on the final set.

Handling Precautions

This product uses thin wires. Observe the following precautions and handle it with care so as not to cause wire breakage. Broken wire may result in damage, etc.

- Do not stack multiple products on top of one another.
- Do not allow the product to come in contact with tools, etc.

Do not apply excessive stress during installation.
It may cause chipping and cracking, resulting in damage, etc.
Provide a clearance of 2 mm or more between the high-voltage section of this product and the frame body on which the product is installed and also the conductor section (pattern, pad, etc.).
Please do not use the product, when dropping it, since there is a possibility of the parts damage.
Please confirm abnormality is not found in the product enough when using it by any chance.

	No.	MATERIALS NAME	QU	MATERIAL	REMARK
	PRODUCT NAME or MODEL, TITLE				
	DC-AC INVERTER UNIT CXA-L05xx-NJL				
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• The specifications may be changed without any notice.
 • When placing orders,
 please confirm "Specifications" or Product Drawing" through TDK sales or distributors.

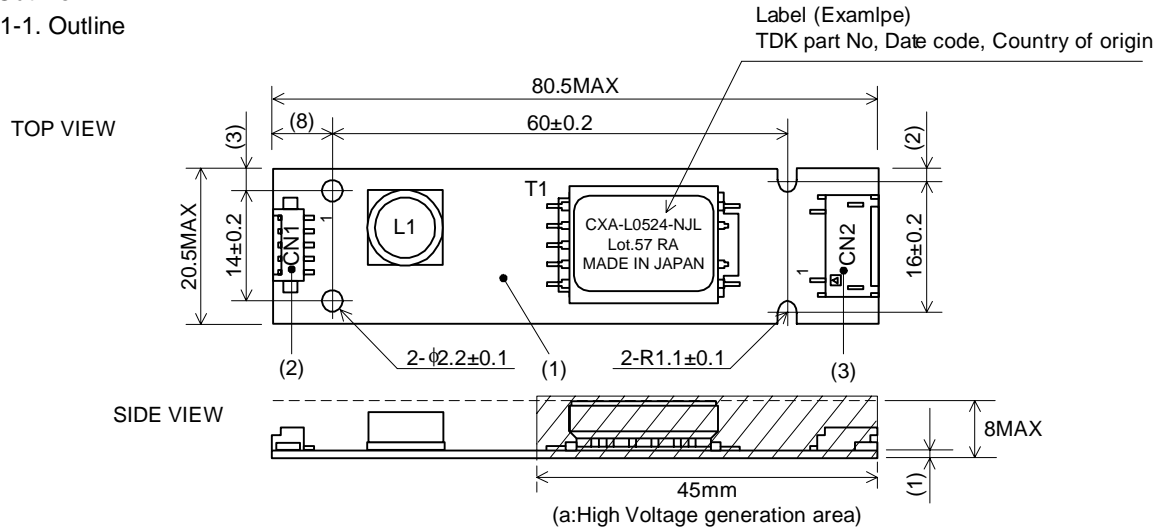
Features

• This product is conformity to RoHS directive.*

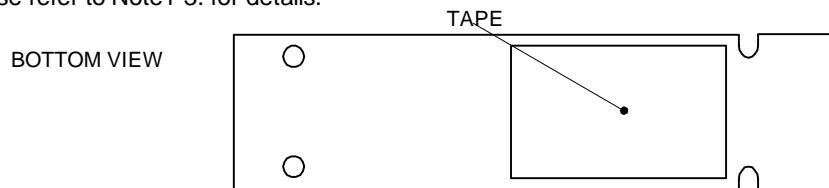
* : Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

[1] Outline

1-1. Outline



*Please secure the air clearance of 2mm or more from the high voltage generation area up and down and right and left.
 Please refer to Note1-3. for details.



Symbols	Product name	Quantity	material	Notes	Product name
(1)	PCB	1	Glass epoxy(FR-4) Composite (CEM-3)	UL94V-0 t=1.0	Common in the Series
(2)	CN1	1	53261-0571	(MOLEX)	
(3)	CN2	1	SM02(8.0)B-BHS-1-TB(LF)(SN)	(JST)	

Example of naming product C X A - L 0 5 x x - N J L

Inverter. _____

Output power : 4~5W. _____

Output current : 5mA rms type. _____

Input voltage : _____
 05-5V type, 12-12V type, 24-24V type.

_____ CN2 high voltage output side terminal position :
 L-Leftside sees from insert terminal.

_____ Output connector : J-JST type.

_____ Adjustment of brightness method : N-Non adjustment type.

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1-2. Connector Configuration

Input side CN1

Pin No.	Symbols	CXA-L0505-NJL	CXA-L0512-NJL	CXA-L0524-NJL
		Ratings	Ratings	Ratings
CN1-1	Vin	5V	12V	24V
CN1-2	GND	0V	0V	0V
CN1-3 CN1-4 CN1-5	N.C.	-	-	-

Output side CN2

Common in the Series		
Pin No.	Symbols	Ratings
CN2-1	V _{HIGH}	600Vrms
CN2-2	N.C.	-
CN2-3	V _{LOW}	(0V)

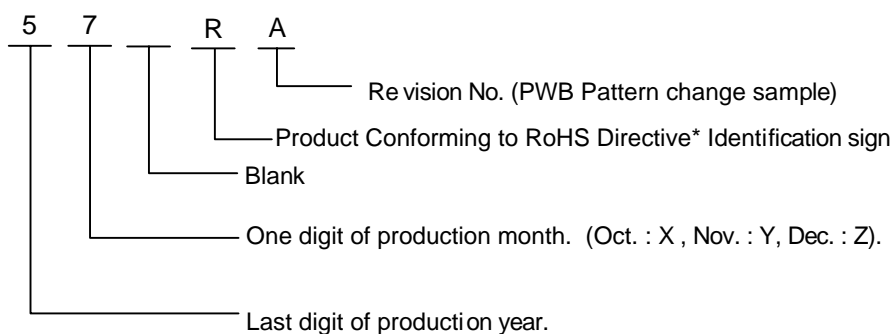
The output side is isolated from the input side.

V_{HIGH} is based on V_{LOW}.

Note1. Marking of TDK part No, Date code, Country of origin.

1) TDK part No., Date code, Country of origin, is marked on the transformer.

2) Date code example. (ex. APR. 2001, Revision No.A)



3) Country of origin code example. (ex. MADE IN JAPAN. MADE IN CHINA).

* : Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

Note2. For circuit connection, please refer to test circuit diagram [5].

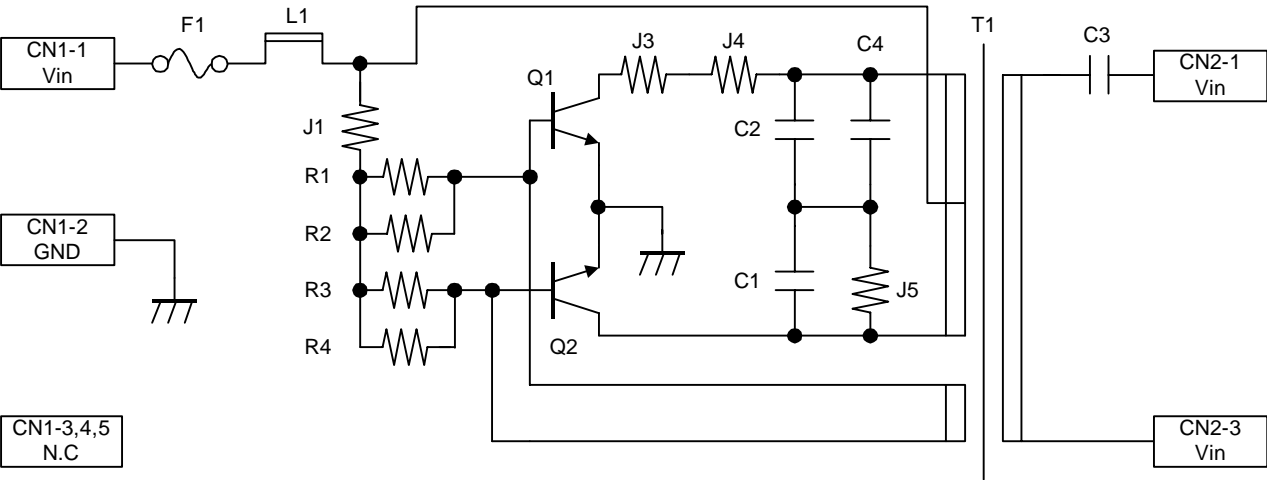
Note3. Please use minimum of 2mm clearance (all directions) between inverter high voltage area and any conductors. Please refer to mechanical drawing for marking of high voltage area.

Note4. Open voltage (strike voltage) is measured across the transformer secondary winding at no load as the reading at the output connector would be less than the actual value.

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- Note5. If the start up voltage falls below Cold Cathode Tube strike voltage, the CCFL will not light up easily specially at lower ambient temperature. Please review mounting instruction to avoid any abnormal operation due to coupling/leakage capacitance of inverter high voltage area to any surrounding conductor.
- Note6. For operation in non-isolated configuration, please connect CN2-3 (V-Low) to input return (ground) as the output of DC/AC inverter is electrically isolated from input.
- Note7. For proper operation of circuit protection (FUSE or IC PROTECTOR) of CXA-L0505-NJL, please use minimum of 2A capacity for input power supply and 1.0A for CXA-L0512-NJL and CXA-L0524-NJL.

[2] Circuit Diagram



[3] Absolute Maximum Ratings

Items	Symbols	Specifications			Unit	Notes
		L0505-NJL	L0512-NJL	L0524-NJL		
Input Voltage	Vin	0~6	0~14.4	0~28.8	Vdc	
Output Power	Pout	3.5	3.5	3.5	W	
Operating Temp range	Ta	0~60	0~60	0~60	°C	
Storage Temp range	Ts	-30~85	-30~85	-30~85		
Humidity range	RH	95	95	95	%RH	A Maximum wet ball temperature is 38°C.

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[4] Electrical specifications

(CXA-L0505-NJL)

Items	Symbols	Conditions			Specifications			Unit
		Vin (V)	Ta (°C)	RL (kΩ)	min	typ	max	
Output current	Iout 1	5±0.05	18~28	120	4.5	5.0	5.5	mArms
	Iout 2	5±0.25	0~60	110~130	4.0	5.0	6.0	
Input current	Iin				-	720	1000	mAdc
Frequency	F				33	40	47	kHz
Open circuit voltage	Vopen			∞	1400	1500	-	Vrms

(CXA-L0512-NJL)

Items	Symbols	Conditions			Specifications			Unit
		Vin (V)	Ta (°C)	RL (kΩ)	min	typ	max	
Output current	Iout 1	12±0.12	18~28	120	4.5	5.0	5.5	mArms
	Iout 2	12±0.6	0~60	110~130	4.0	5.0	6.0	
Input current	Iin				-	300	500	mAdc
Frequency	F				33	40	47	kHz
Open circuit voltage	Vopen			∞	1400	1500	-	Vrms

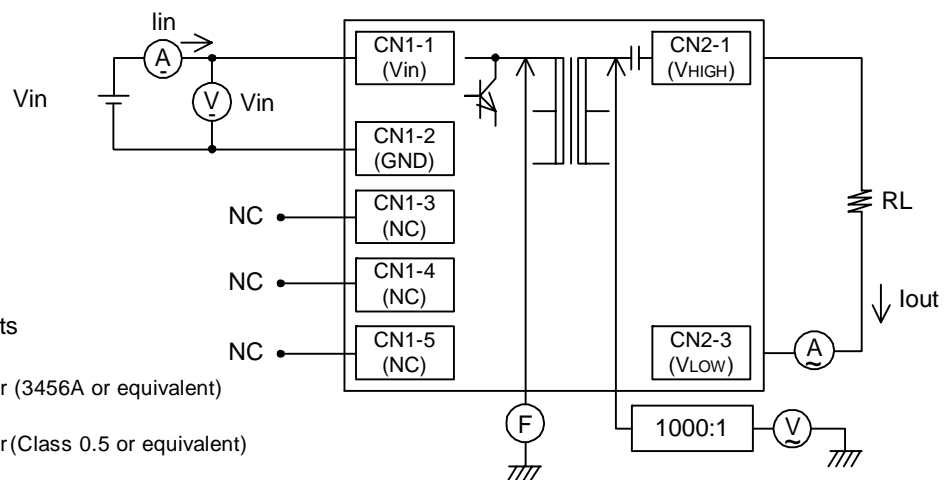
(CXA-L0524-NJL)

Items	Symbols	Conditions			Specifications			Unit
		Vin (V)	Ta (°C)	RL (kΩ)	min	typ	max	
Output current	Iout 1	24±0.24	18~28	120	4.5	5.0	5.5	mArms
	Iout 2	24±1.2	0~60	110~130	4.0	5.0	6.0	
Input current	Iin				-	150	250	mAdc
Frequency	F				26	32	38	kHz
Open circuit voltage	Vopen			∞	1400	1500	-	Vrms

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[5] Test circuit



5-1. Test equipments

- (V) Digital Multi Meter (3456A or equivalent)
- (A) DC Current Meter (Class 0.5 or equivalent)
- (V) True RMS. Meter (3400A or equivalent.)
- (A) High Frequency Current Meter (2016 or equivalent)

1000:1 High Voltage Probe
(HP1137A or equivalent)

The output side is isolated from the input side.

[6] Reliability test

Following test items are assured.

Items	Conditions	Judgement
Low Temp.Non operational	-30°C 500h	Electrical and apperrance should be in the spec.
Low Temp.operational	-10°C 500h Load cond.:TYP	
High Temp.Non operational	85°C 500h	
High Temp.operational	60°C 500h Load cond.:TYP	
Heat shock	-20°C→ 75°C 30min.Each 100 Cycles	
Humidity (Non operational)	40°C 90~95%RH 500h	
Vibration	10~55Hz Amplitude 0.35mm or 5G Sweep:1min 30min each axis X,Y,Z	
Shock	100G 6ms Harf-sine pulse 1 time each axis ±X,Y,Z	

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[7] Packing and Marking

A shipping box is packaged to avoid from damage. Following items are printed on the box.

7-1. TDK part No. (ex.) CXA-L0512-NJL

7-2. Manufacture TDK

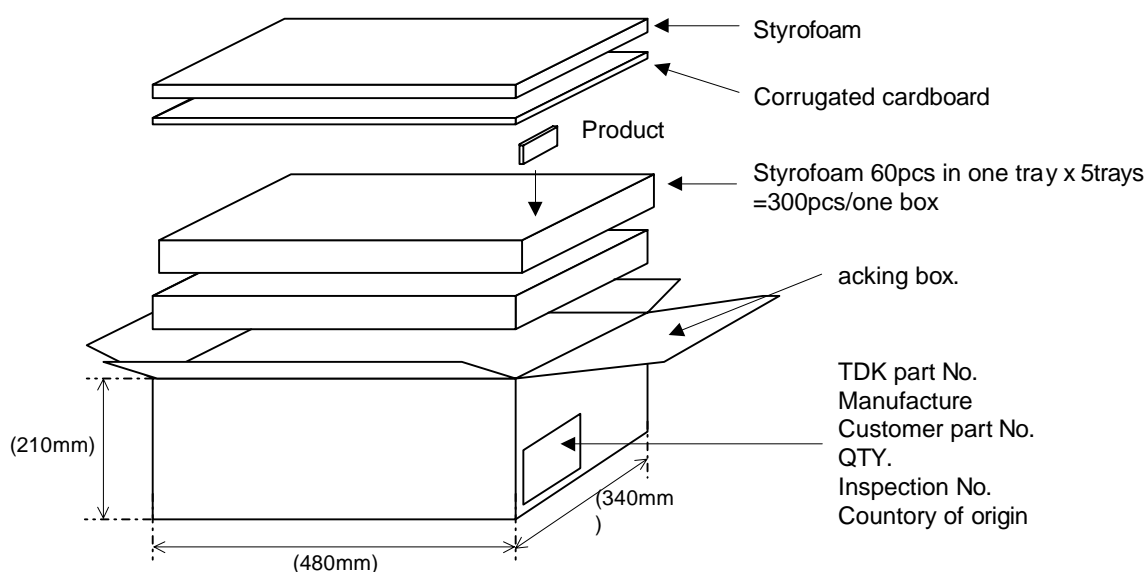
7-3. Customer part No.

7-4. QTY.

7-5. Inspection No.

7-6. Country of origin

Packing style as under Fig. (300 going in with a standard.)



[8] Others

8-1. Test cond.

A normal test condition :Temperature ($20\pm 15^{\circ}\text{C}$), Humidity ($65\pm 20\%\text{RH}$).

8-2. Std warantrty

One year after shipment. This covers any defects in material or workmanship. Defective units will be replaces at no charge.

8-3. Others

TDK and customer are to discuss changes, problems, and modifications and etc, when needed.

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Mouser Electronics

Authorized Distributor

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