

MESSRS :

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PRODUCT DRAWING

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CUSTOMER'S PRODUCT NAME:

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TDK PRODUCT NAME: DC-AC INVERTER UNIT  
CXA-0217

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***TDK-Lambda***

**TDK Corporation**

Corporate Headquarters  
13-1,Nihonbashi 1-chome,Chuo-ku,  
Tokyo 103,JAPAN  
Telephone : 03-3278-5111

PREPARED BY	APPROVED BY	AUTHORIZED BY
Nov. 17 , 2006 <i>H.Mitsumoto</i>	Nov. 17 , 2006 <i>S.Tsujimura</i>	Nov. 17 , 2006 <i>N.Kitajima</i>

DWG.No.	CTR-0787-D
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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 clearance between the high-voltage section of this product and the frame body on which the product is installed and also the conductor section as per listed on page 2, [1] "Outline".
- 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.

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PRODUCT NAME or MODEL, TITLE				
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1. Part Name

The part name is CXA-0217.

2. Contents

Item	Section	Page
1.Outline		
1-1.Outline	See Section [1]	3
1-2.Connector Configuration	See Section [1]	4
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Absolute Maximum Ratings	See Section [2]	5
3.Electrical specifications	See Section [3]	5
4.Test Circuit	See Section [4]	6
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Listed description are subject to change without notice.

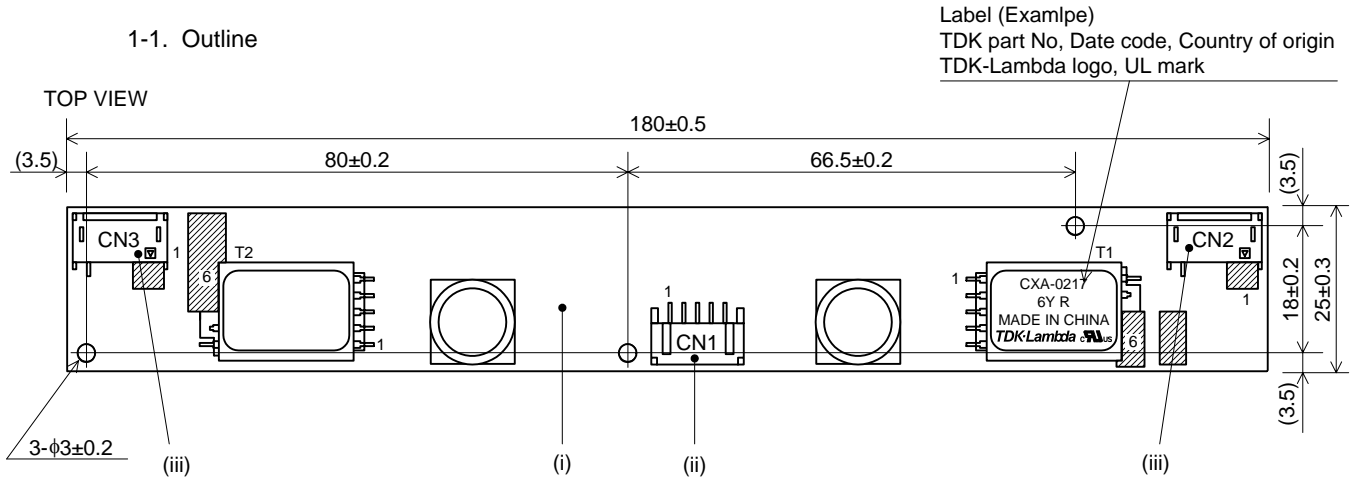
\*\*\*Features\*\*\*

- This inverter is for two lamps. It has Dimming function and Remote function.
- The high-voltage areas (terminals and patterns) are coated with silicone so as to avoid the defects caused by dust.
- This product is conformity to RoHS directive.\*1

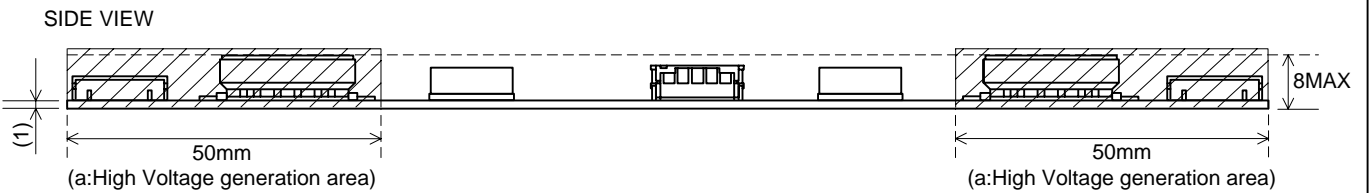
\*1Conformity to RoHS Directive:This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used,except for exempted applications.

[1] Outline

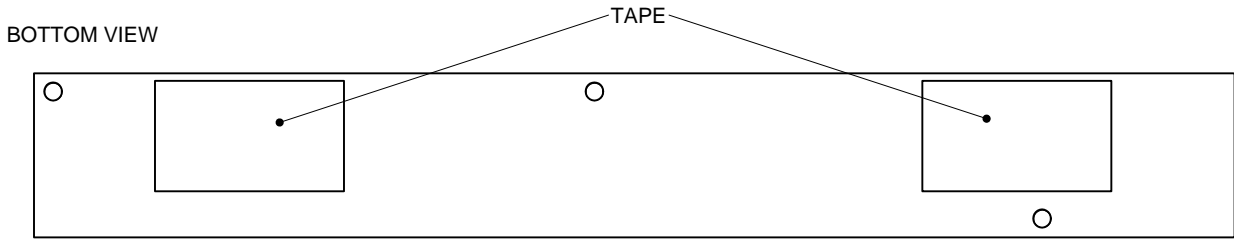
1-1. Outline



Note1-1. A slanted line department in an upper figure expresses silicone application position.



\*\*Please secure 3mm or longer space distance from the high voltage generating area in all directions. Please see Note 1-4 for the details.



Unit:mm

Weight:30.0g.typ.

No.	Part Description	Material	QU.	REMARK	MATES WITH
(i)	PCB	Composite (CEM-3)	1	UL94V-0 t=1.0	-
(ii)	Input Connector CN1	S5B-PH-SM4-TB(LF)(SN)	1	JST	PHR-5
(iii)	Output Connector CN2,CN3	SM02(8.0)B-BHS-1-TB(LF)(SN)	2	JST	BHR-03VS-1

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[2] Absolute maximum ratings

Item	Symbol	Specification	Unit	Notes
Input Voltage	Vin	0~14.4	V	
	Vrmt	0~7		
	Vbr			
Load Resistance	RL1	115	kΩ	
	RL2			
Operating Temp. range	Ta	0~70	°C	
Storage Temp. range	Ts	-30~85	°C	
Humidity range	RH	95	%RH	A maximum wet ball temperature is 38°C. No dew.

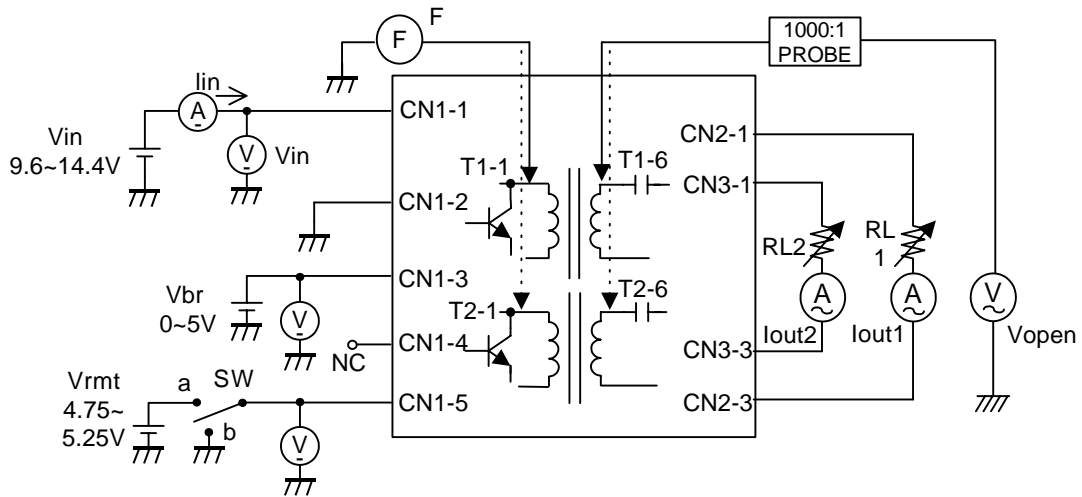
[3] Electrical specifications

Item	Symbol	Condition					Specification			Unit
		Vin(V)	Vrmt(V)	Vbr(V)	Ta( )	RL1,2 (k )	MIN.	TYP.	MAX.	
Output Current (Brightness max.)	Iout1/ Iout2	12 ± 2.4	5 ± 0.25	0	0 ~ 70	76 ~ 114	5.3	6.0	6.7	mArms
		12 ± 1.2	5 ± 0.25	0	0 ~ 70	95 ± 0.5	5.5	6.0	6.5	
Output Current (Brightness min.)	Iout1/ Iout2	12 ± 2.4	5 ± 0.25	3.4	0 ~ 70	250	1.65	2.0	2.45	
		12 ± 1.2	5 ± 0.25	3.4	0 ~ 70	250	1.7	2.0	2.4	
Input Current	Iin	12 ± 2.4	5 ± 0.25	0	0 ~ 70	76 ~ 114	-	0.76	1.3	A
		12 ± 1.2	5 ± 0.25	0	0 ~ 70	76 ~ 114	-	0.76	1.2	
Frequency	F	12 ± 2.4	5 ± 0.25	0	0 ~ 70	95	52	58	64	kHz
Open Circuit Voltage	Vopen	12 ± 2.4	5 ± 0.25	0 ~ 3.4	0 ~ 70		1400	1500	2000	Vrms

Note3-1. A start-up sequence of Vrmt is the sametime of Vin turning on or after.

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[4] Test circuit



\*For the number of the component's position, please refer to Outline diagram [1].

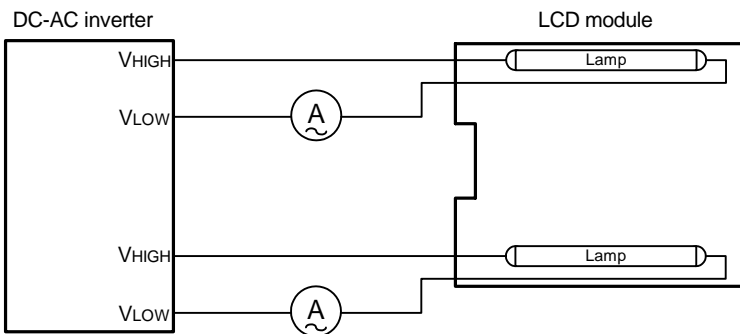
Note4-1. CN1-3 has brightness and remote functions. These functions are operated by voltage of Vbr as below.

Vbr	Operation of unit
0~3.4V	Luminance is max. at 0V. Luminance is min. at 3.4V.
4.75~7.0V	No operation(Vrmt=5±0.25V)

Note4-2. Test Equipments

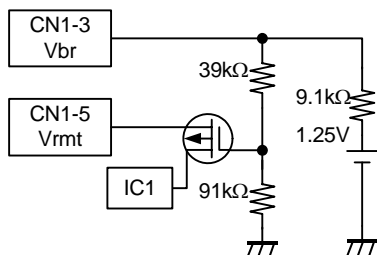
- (V) Digital Multiple Meter(ADVANTEST R6452A or equivalent)
- (A) DC Current Meter(ADVANTEST R6452A or equivalent)
- (F) Frequency Counter(ADVANTEST R6452A or equivalent)
- (V) True RMS Meter(NF Circuit M2170 or equivalent)
- (A) High Frequency Current Meter(FLUKE187 or equivalent)
- (1000:1) High Voltage Probe(Tektronix P6015A or equivalent)

Connection diagram of LCD module (Reference)

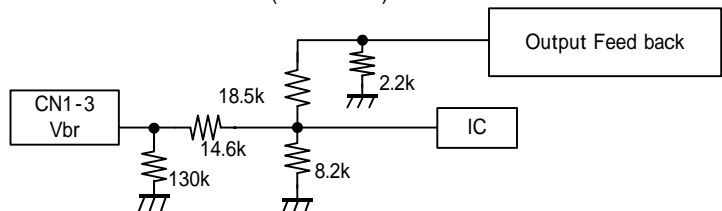


\*Connect the High Frequency Current Meter to the Low-Voltage (VLOW) side.

Vrmt terminal circuit (Reference)



Vbr terminal circuit(Reference)



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[5] Reliability test

Following test items are assured.

Item	Conditions	Judgement
Low Temp.Non operational	-30°C 500h	Electrical and apperance should be in the spec.
Low Temp.operational	0°C 500h Load cond.:TYP	
High Temp.Non operational	85°C 500h	
High Temp.operational	70°C 500h Load cond.:TYP	
Heat shock	-30°C↔70°C 30min.Each 100 Cycles	
Humidity (Non operational)	60°C 90~95%RH 500h	
Vibration	10~57Hz Amplitude 0.75mm 58~500Hz 9.8m/s <sup>2</sup> Sweep:11min 60min each axis X,Y,Z	
Shock	980m/s <sup>2</sup> 11ms Harf-sine pulse 1 time each axis ±X,Y,Z	

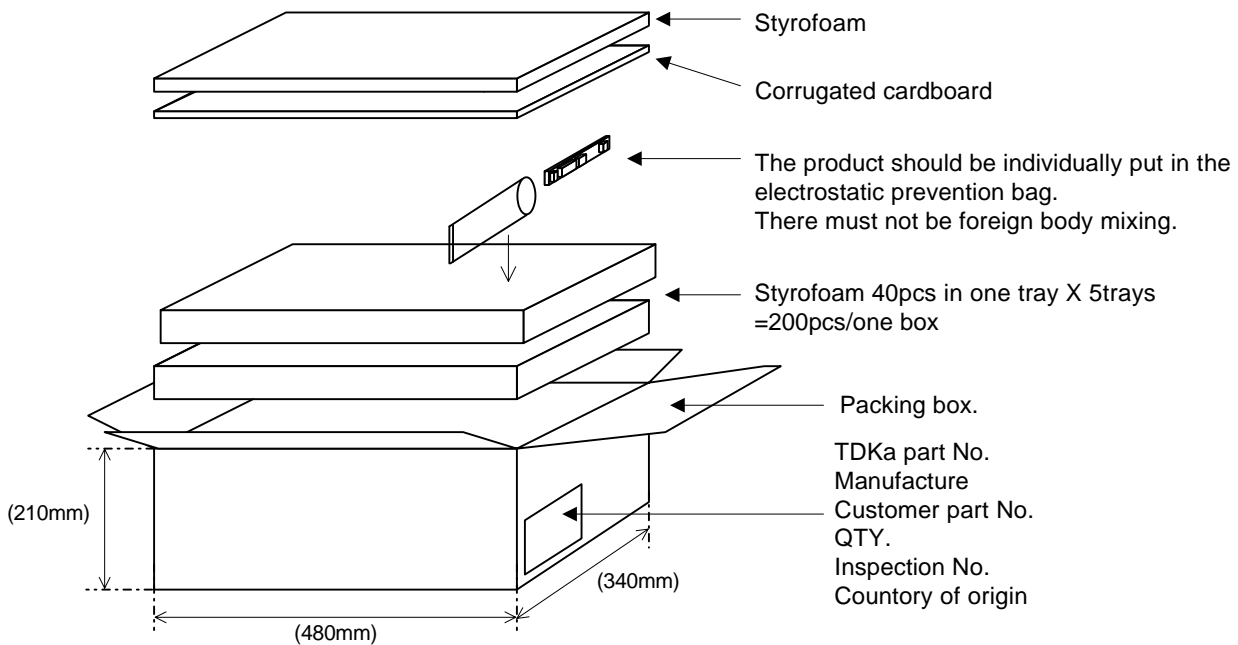
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[6] Packing and Marking

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

- 6-1. TDK part No. CXA-0217
- 6-2. Manufacture TDK
- 6-3. Customer part No.
- 6-4. QTY.
- 6-5. Inspection No.
- 6-6. Country of origin

Packing style as under Fig. (200 going in with a standard.)



[7] Others

7-1. Test conditions

Unless otherwise specified, the temperature to be  $(20 \pm 15)^\circ\text{C}$  and humidity to be  $(65 \pm 20) \% \text{RH}$ .

7-2. Warranty

Warranty shall be for one year after delivery, and those products causing failure during the warranty period and which failures are attributed to the manufacturer's responsibility shall be replaced at no charge.

7-3. Disposition for non-conforming lots

Non-conforming lots, when occurred, shall be discussed and decided upon between both parties.

7-4. MTTF

MTTF which calculated according to MIL-HDBK-217-F is as follows.

TEMPERATURES  $25^\circ\text{C}$   
 MTTF 520000hours or more

7-5. Others

When any doubt arises about this specification, it shall be discussed and decided upon between both parties.

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