MESSRS :

PRODUCT DRAWING

CUSTOMER'S PRODUCT NAME:

TDK PRODUCT NAME: DC/AC INVERTER UNIT
CXA-0435

TDK Corporation

Corporate Headquarters
13-1,Nihonbashi 1-chome,Chuo-ku,
Tokyo 103, JAPAN
Telephone : 03-3278-5111
2-15-7,Higashi-Ohwada,Ichikawa-shi,
Chiba,272-8558 JAPAN
Telephone : 047-378-9671
Fax : 047-378-9673

PREPARED BY	APPROVED BY	AUTHORIZED BY
Feb. 14, 2006 *H.Mitsumoto*	*Feb. 14, 2006* *E.Takahashi*	*Feb. 14, 2006* *K.Hanabusa*

DWG.No.	CTR-1171-A

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 CXA-0435				

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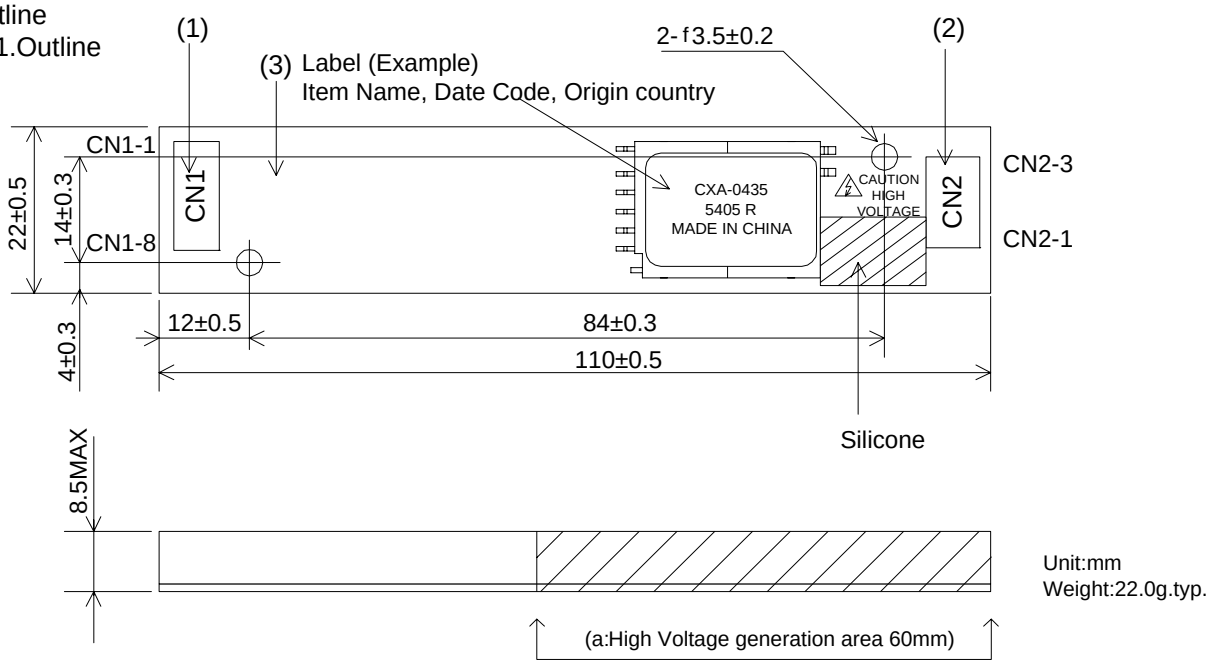
●Features●

・This is the single output (one CCFL) inverter. It has Dimming function and Remote function.
・This product has shutdown function.
It prevents from keeping generating the high voltage when the lamps open.(Refer Note.4-3.)
・With lamp failure detector.
Normal Operation : CN1-8=0V
Some Lamps Open : CN1-8=5V
・The high-voltage area (terminals and patterns) is coated with silicone so as to avoid the defects caused by dust.
・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



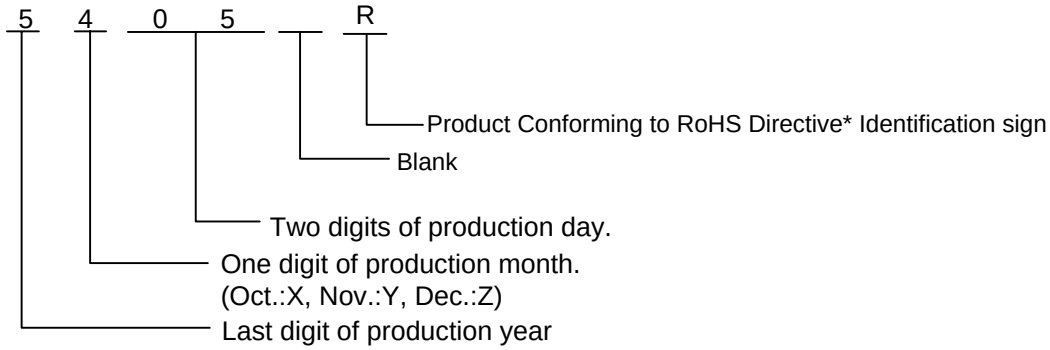
Unit:mm
Weight:22.0g.typ.

Note1-1.Tolerance:±0.3mm

Note1-2.Marking of TDK part No.,and date code.

1)TDK part No.and date code(4degits)is marked on the transformer.

2)A date code example.(ex.Apr.5 ,2005)



3)Origin country 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.

(3)	PWB	1	CEM-3	t=1.0mm
(2)	Output connector	1	SM02(8.0)B-BHS-1-TB(LF)(SN)	JST
(1)	Input connector	1	53261-0871	MOLEX

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1-2.Connector Configuration

Pin No.	Connection		Note
	Symbols	Ratings	
CN1-1	Vin	10.8~13.2V	Input Voltage
CN1-2			
CN1-3	GND	0V	GND
CN1-4			
CN1-5	Vrmt	0V/2.5V～Vin	0~0.4V : OFF 2.5~Vin V : ON
CN1-6	Vbr1 / Rbr1	0~2.5V/ 0~50kΩ	CONTROL/ VR1
CN1-7	Vbr2 / Rbr2	GND / 0~50KΩ	GND / VR2
CN1-8	Vst	0V / 5V	The warning signal 5V in abnormal circumstances
CN2-1	VHIGH1	520Vrms	Output
CN2-2	NC	-----	NC
CN2-3	VLOW	(2V)	Output Return

Note1-3:Warning : High voltage is generate on the section [a], please take any one the following the caution to avoid arcing problem.
Keep 2mm (or more) clearance from the high voltage section as marked the outline [a] to any conductors.Add isolation material such as Myla r.

Note1-4:For proper operation: Don't connect the out put VLOW(CN2-3) terminal to the input GND(CN1-3,4).

Note1-5:Please use the input power supply capacity to 2A or more. The circuit protection element (fuse or IC protector) does not fuse in 2A or less occasionally.

[2]Absolute Maximum Ratings

Items	Symbols	Specifications	Unit
Input Voltage	Vin	0~+14	VDC
	Vrmt	-1 ~ Vin+1	VDC
	Vbr	0~16	VDC
Load Resistance	RL1	100	KΩ
Operating Temp.range	Ta	**-20**~70	°C
Storage Temp.range	Ts	-30~+85	°C
Humidities range.	RH	95 A Maximum wet ball temperature is 38°C.	%RH

[3]Electrical specifications

Items	Symbols	Condition					Specifications			Unit
		Vin(V)	Vrmt(V)	Rbr/Vbr	Ta(°C)	RL(KΩ)//CL	MIN.	TYP.	MAX.	
Output Current	Io1	12±1.2	5±0.25	0Ω/0V	0~60	**80//5**	**6.0**	**6.5**	**7.0**	mA rms
		12±1.2	5±0.25	0Ω/0V	23±5	80//5	**1.8**	**2.5**	**3.2**	
Input Current1	Iin1	12±0.6	5±0.25	0Ω/0V	0~60	80//5	-	**400**	**650**	**mA**
Input Current2	Iin2	12±0.6	0±0.25	0Ω/0V	0~60	80//5	-	-	1	mA
Frequency	F1	12±0.6	5±0.25	0Ω/0V	0~60	80//5	45	50	55	kHz
Frequency(Duty)	F2	12±0.6	5±0.25	50kΩ /2.5V	0~60	80//5	**220**	270	**320**	Hz
Open Circuit Voltage	Vopen	10.8	5±0.25	0Ω/0V	0~60	∞	**1600**	**1700**	-	Vrms
Warning Signal Note3-2	Vst	12±1.2	5±0.25	0Ω/0V	0~60	∞	4.5	5.0	5.5	V DC
		12±1.2	5±0.25	0Ω/0V	0~60	**80//5**	-	0	0.5	

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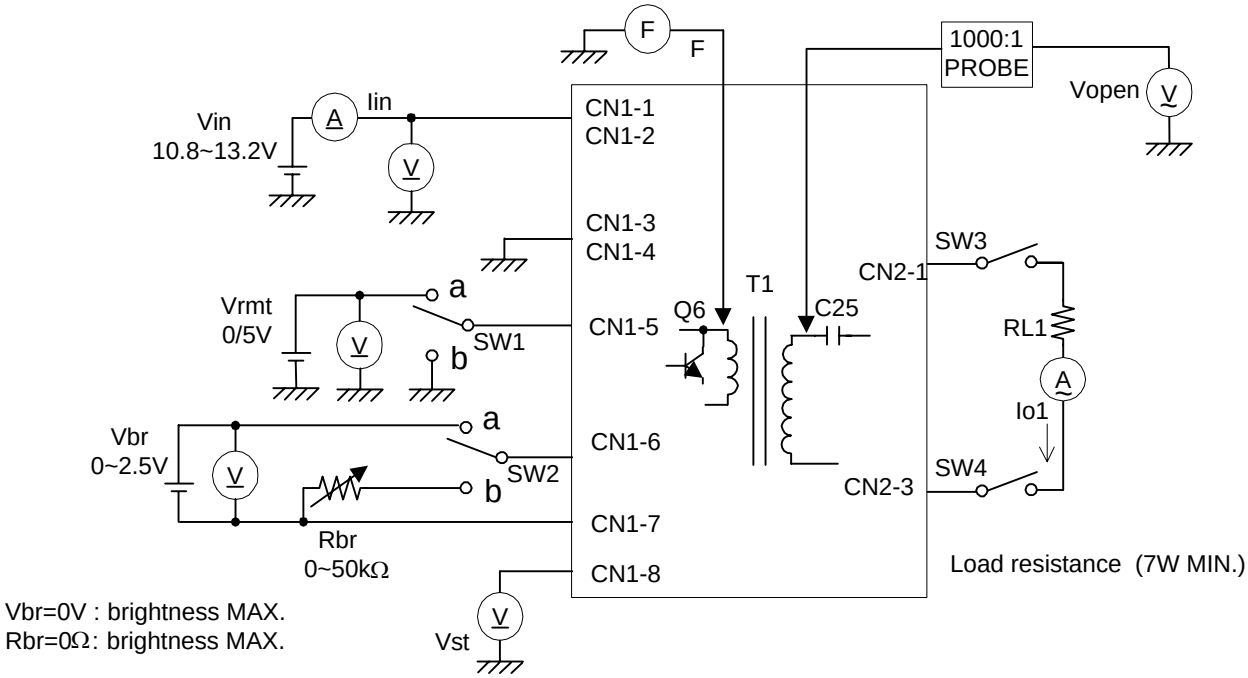
[4]Test Circuit



Note4-1. SW1(ON/OFF) Operation is as following;

SW1	Operation of unit
a	Operation
b	Non operation
Open	Non operation

Note4-2. SW2(ON/OFF) Operation is as following;

SW2	Operation of unit
a	Voltage dimming Vbr=0~2.5V
b	Variable resistance dimming VR=0~50kΩ

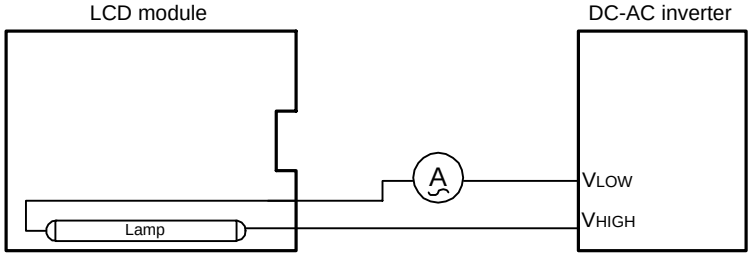
Note4-3. SW3~4(Open/Close) Operation is as following;

SW3~4	Operation of warning signal
Open	Operation (5V output)
Close	Non operation (0V output)

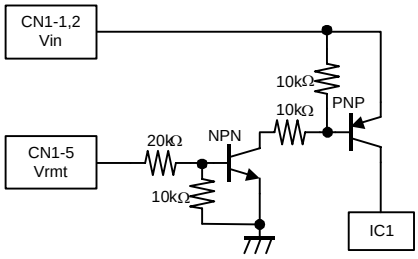
Note4-4.Test Equipments

- (V) Digital Multiple Meter(ADVANTEST R6452A or equivalent)
- (A) DC Current Meter(ADVANTEST R6452A or equivalent)
- (F) Frequency Countor(ADVANTEST R6452A or equivalent)
- (V~) True RMS Meter(NF Circuit M2170 or equivalent.)
- (A~) High Frequency Current Meter(FLUKE 187 or equivalent)
- 1000:1 ：High Voltage Probe(Tektronix P6015A or equivalent)

Connection diagram of LCD module (Reference)



Remote terminal circuit (Reference)



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

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[5]Reliability Test

Following test items are assured.

Items	Conditions	Judgement
Low Temp.Non operational	-40°C 500h	Electrical and appearance should be in the specifications.
Low Temp.operational	-20°C 500h Load Cond.: TYP.	
High Temp.Non operational	85°C 500h	
High Temp.operational	70°C 500h Load Cond.: TYP.	
Heat Shock	-20°C to 75°C 30min. Each 100 Cycles	
Humidity	40°C 90~95%RH 500h	
Vibration	10~55Hz 58~500Hz 1G Sweep:1min **30**min each axis X,Y,Z	
Shock	100G **6**ms Half-Sine Pulse 1 times each axis ±X,±Y,±Z	

[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-0435

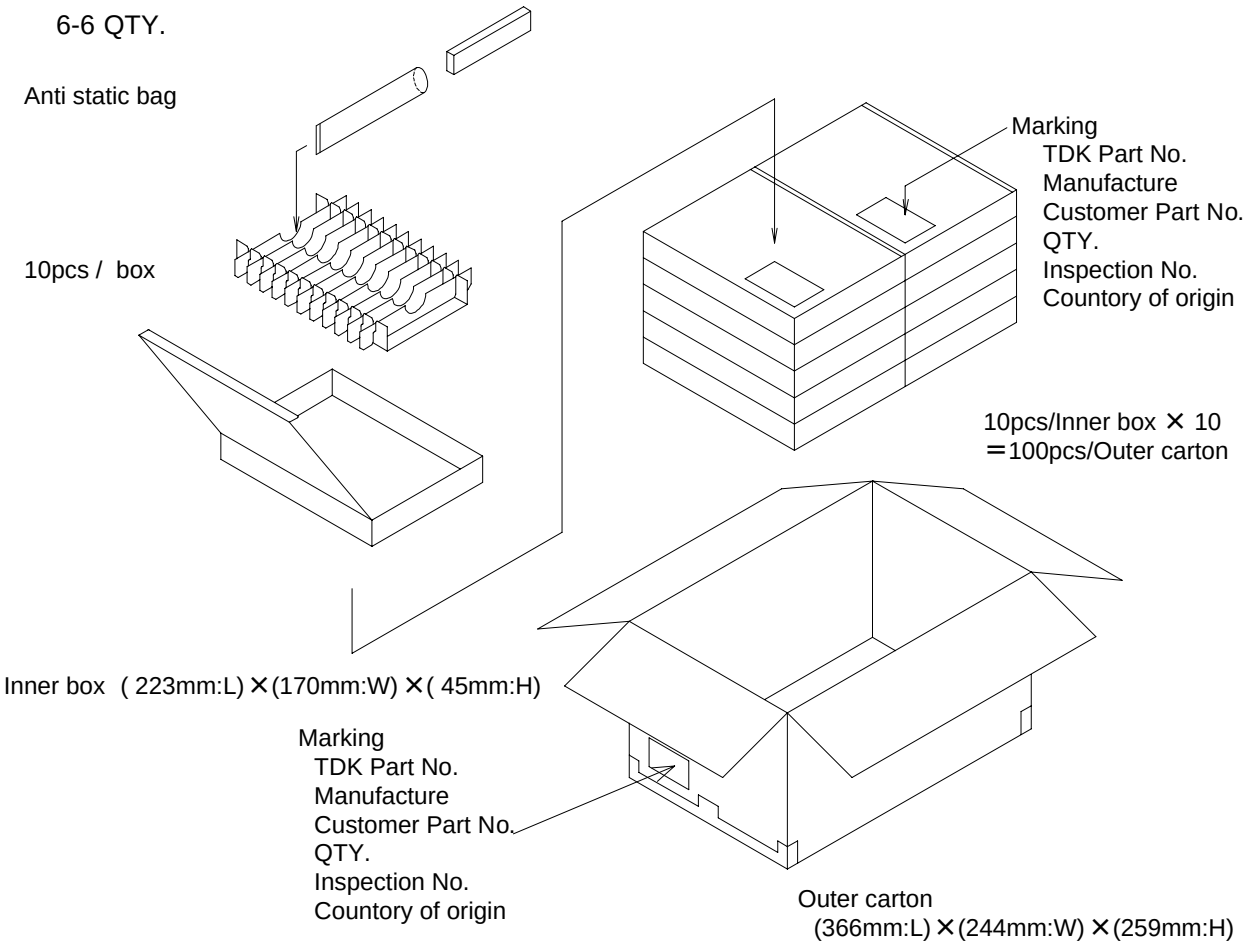
6-2 .Manufacture

6-3. Customer part No.

6-4.Packing Style See under Fig.(180 going in with a standard.)

6-5 .Origin Country

6-6 QTY.



[7] Others

7-1. Test cond.
A normal test condition :Temperature (20±15°C), Humidity (65±20%RH).

7-2. Std warrantry
One year after shipment.This covers any defects in material or workmanship. Defective units will be replaces at no charge.

7-3. MTTF
MTTF which calculated according to MIL-HDBK-217-F is as follows.
TEMPERATURES 25℃
MTTF 2180000hours or more

7-4. Others
TDK and customer are to discuss changes,problems, and modifications and etc, when needed.

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