

TO : Customers

DATE : 2001.11.13

GREEN C&C TECH
2nd FL,898-45,Hogye-Dong
Dongan-Ku,Kyungki-Do,
Anyang,Korea
TEL : 82-31-458-9105,9163
FAX : 82-31-458-9135

DOCUMENTATION FOR APPROVAL

PRODUCT : CCFL BACKLIGHT INVERTER

MODEL NAME : GH010A

GCCT NAME : GCCT010A

APPROVAL	CHECKED	WRITTEN

PLEASE RETURN ONE DOCUMENT AFTER APPROVED SIGN.

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G.C&C TECH	INVERTER SPECIFICATION (GH010A)	R&D DATE : 2001.07.21
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NO	DATE	REVISION	PAGE
1	2001.06.09	-CN1 S5B-PH-SM3 --> 53261-0590 CHANGE -CN2,3 SM02B-BHSS-1-TB --> SM02(8.0)-BHS-1-TB -DIMMENSION CHANGE	4,7 4,7 5

REVISION HISTORY

REV.											
Page											
REV.	0										
Page	12										
REV.	1	0	1	0	1	0	0	0	0	0	0
Page	1	2	3	4	5	6	7	8	9	10	11

G.C&C TECH	INVERTER SPECIFICATION (GH010A)	R&D DATE : 2001.07.21
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1. APPLICATION

This Document Specified The Detailed Product Requirements of Inverter
GH010A

2. SUITABLE LOAD

LCD MODULE : SAMSUNG 12.1" 2LAMP TFT LCD

3. ELECTRICAL CHARACTERISTICS

3-1. Absolute Maximum Ratings

ITEM	SYMBOL	SPEC	UNIT	REMARKS
INPUT VOLTAGE1	Vin1	11.5~12.5	V	
INPUT VOLTAGE2	Vin2	4.9~5.1	V	
OPERATING TEMPERATURE	Top	0 50		
STORAGE TEMPERATURE	Tstg	-30 80		
RELATIVE HUMIDITY	RH	90	%	

3-2. Control Signal

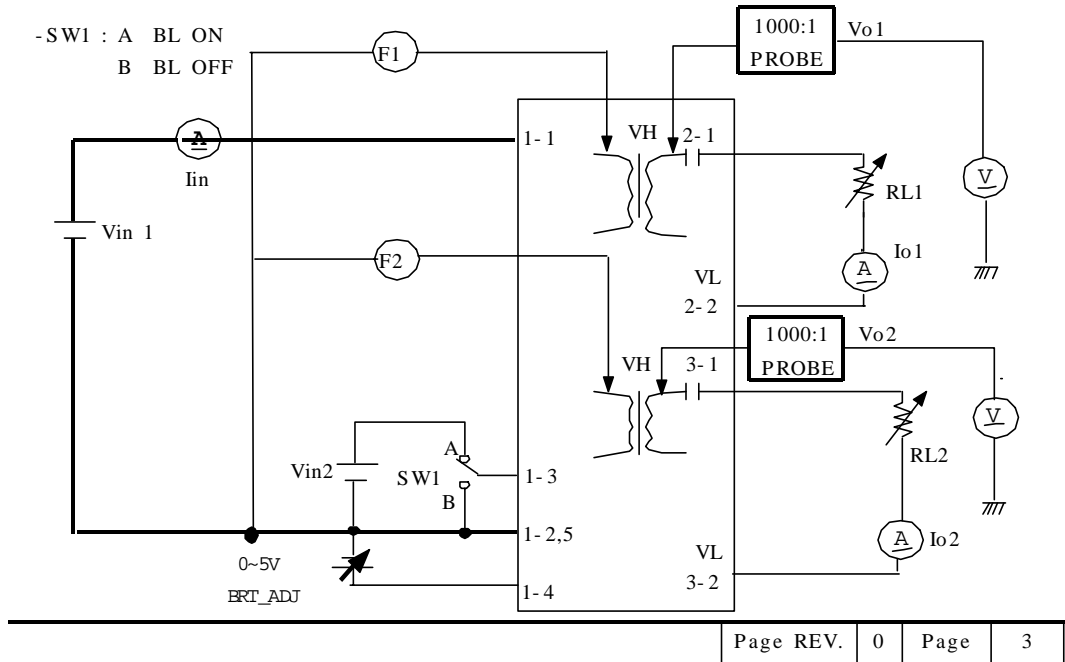
PIN NO.	SYMBOL	STATUS	ACTION	REMARKS
CN1 #3	BKLT_ON	HIGH	LAMP(CCFL)- ON	2.4~5.25V
		LOW	LAMP(CCFL)- OFF	0.8V MAX

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3-3. Output Characteristics

ITEM	SYMBOL	CONDITION			SPECIFICATION			UNIT
		Vin1(V) (DC- IN)	BRT- ADJ	RL1,2()	MIN	TYP	MAX	
OUTPUT CURRENT	Io1(max)	12	0V	80 0.5	6.0	6.5	7.0	mA _{rms}
	Io1(min)	12	5V	80 0.5	2.0	3.0	4.0	
	Io2(max)	12	0V	80 0.5	6.0	6.5	7.0	
	Io2(min)	12	5V	80 0.5	2.0	3.0	4.0	
INPUT CURRENT	Iin(1)	12	0V	80 0.5	700	1	1.3	ADC
FREQUENCY	F(1)	12	0V	80 0.5	44	50	56	KHz
FREQUENCY	F(2)	12	0V	80 0.5	44	50	56	KHz
OPEN OUTPUT VOLTAGE	Vo(1)	12	0V		1.4	-	1.9	kV _{rms}
	Vo(2)	12	0V		1.4	-	1.9	kV _{rms}

3.4 Test Circuit



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4. INTERFACE

4.1 CN1 CONNECTOR :53261-0590(MOLEX)

PIN NO	SYMBOL	REMARK
5	GND	GND
4	BRT_ADJ	0 ~ 5V
3	BL ON/OFF	CCFL Drive SIGNAL(Active HIGHT)
2	GND	GND
1	DC-IN(Vin)	DC INPUT Power (12V)

4.2 CN2 CONNECTOR : SM02(8.0)-BHS-1-TB(JST)

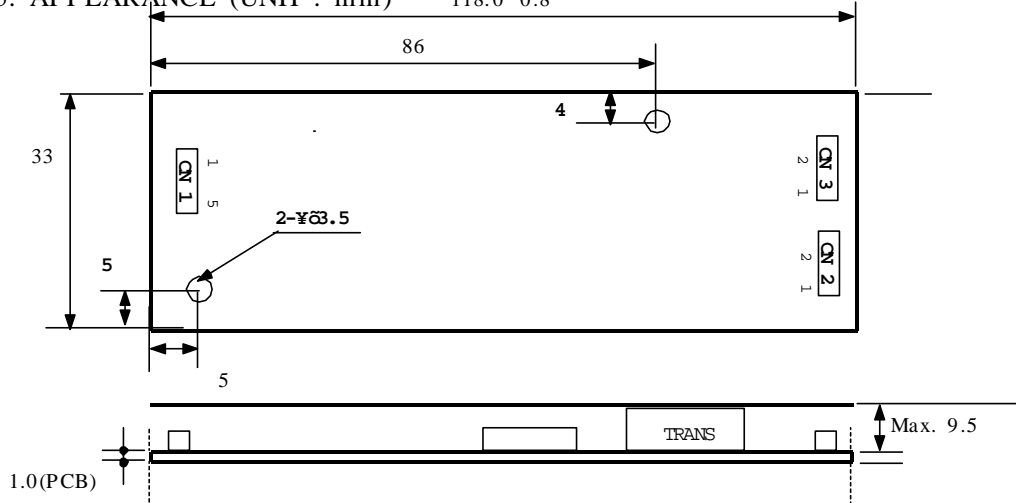
PIN NO.	SYMBOL	REMARK
1	HOT	HIGH
2	COLD	GND

4.3 CN3 CONNECTOR : SM02(8.0)-BHS-1-TB(JST)

PIN NO.	SYMBOL	REMARK
1	HOT	HIGH
2	COLD	GND

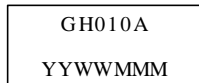
G.C&C TECH	<p style="text-align: center;">INVERTER SPECIFICATION (GH010A)</p>	<p style="text-align: right;">R&D DATE : 2001.07.21</p>
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5. APPEARANCE (UNIT : mm) 118.0 0.8



6. NOTATION OF LOT NUMBER

MARKING : BOTTOM OF PCB.



GH010A : MODEL NAME
YY : YEAR OF PRODUCT 91,'92,'93,'94,...'00,'01
WW : WEEK OF PRODUCT 01,02,03,04,...54,55
MMMM : SERIAL NUMBER 0001,0002.....9998,9999

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10. FLOW CHART

MODEL (TYPE)	(GH010A)		REVISION	0
WRITER	J.H.KIM	(FLOW CHART)		
FLOW CHART	PROCESS	EQUIPMENTS	REFERENCES	
	Raw Material		PART LIST	
	Cream-solder Printing of F-side	Cream-solder Printer		
	Discrete Device Assembly	Low/High Mounter		
	Reflow Soldering	Reflow		
	Visual Inspection	Microscope		
	PCB Marking	Marking Machine		
	Preparing Process			
	Soldering By Hand for Discrete Components			
	Visual Inspection			
	PCB Division			
	Aging	Power Supply, Aging Box	2H	
	Electrical Characteristic	Testing SYSTEM, Testing JIG		
	Inspection			
	Insulator Attachment Package			
	Outgoing Inspection	Testing SYSTEM, Testing JIG	List of Inspection	
Shipping				
Based on standard rule	GCCT010A			

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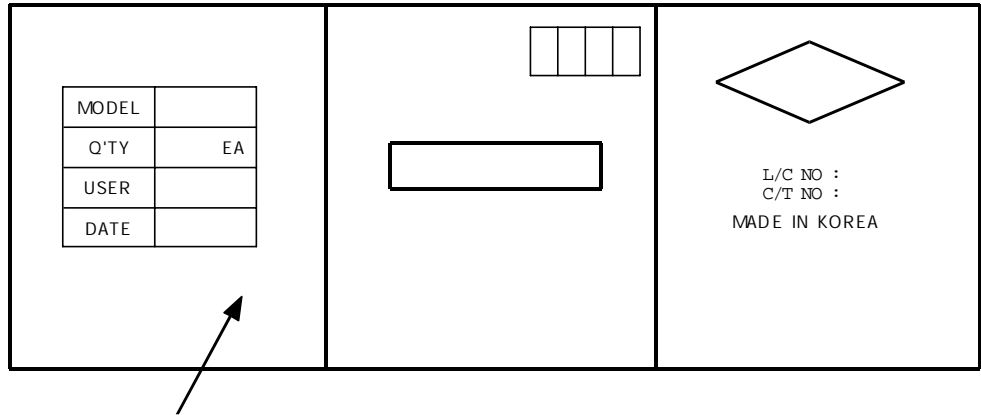
11. RELIABILITY TEST SPEC

NO.	ITEM	CONDITIONS AND METHOD
1	High Temperature Storage Test	Temp : 70°C Duration 500hrs
2	Low Temperature Storage Test	Temp : - 30°C Duration 500hrs
3	High Temperature High Humidity Storage	Temp : 40°C Humid 95%RH Duration 500hrs
4	High Temperature High Humidity Operation test	Temp : 40°C Humid 95%RH Duration 1000hrs
5	Thermal Shock Test	Temp - 30°C → 70°C,250cycle (30min) (30min)
6	Vibration test	Amplitude :1.5mm Frequency :10~ 55Hz Position : three perpendicular planes Duration 1000hrs
7	High Temperature Operation test	Temp : 50°C Duration 72hrs
8	Low Temperature Operation test	Temp : 0°C Duration 72hrs

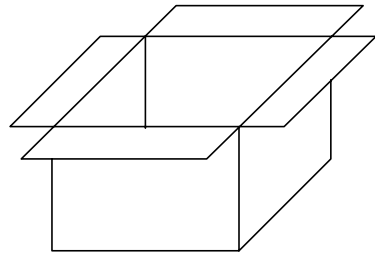
G.C&C TECH	INVERTER SPECIFICATION (GH010A)	R&D DATE : 2001.07.21
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12. PACKING

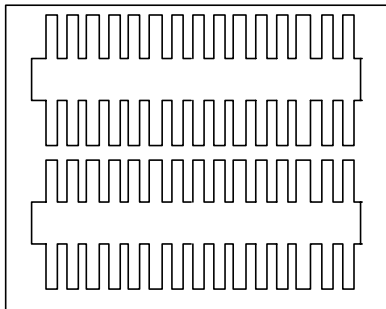
12.1 BOX



MODEL	GH010A
Q.TY	000 EA
USER	
DATE	00.00.00



12.2 TRAY



1 TRAY : 50EA
1 BOX : 8TRAY (400EA)

SYMBOL	TYPE NO	MAKER
PACKING-TRAY	383*319*45	YUJIN
PACKING-BOX	393*324*358	DONGJIN
PACKING-PAD	393*324*3	YUJIN

10 MATERIAL LISTS FOR SAFETY GH010A

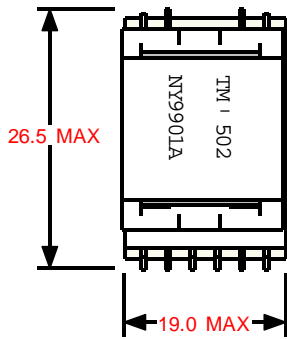
10.1 LISTS

SYMBOL	NAME	TYPE NO.	MANUFACTURER	DESCRIPTION
FI	FUSE	429002	LITTELFUSE INC	UL FILE NO :E10480 CSA FILE NO :LR29862
				UL FILE NO :E20624 CSA FILE NO :LR39772
PCB	PRINTED WIRING BOARD	FR- 4	KIJOO	UL FILE NO :E111636
			WON KYUNG ELECTRONICS	UL FILE NO:E202541
CN1	CONNECTOR	53261-0590	MOLEX	NYLON 4/6 UL94V-0
		12505WR-05	YEONHO	UL:E108706
CN2	CONNECTOR	SM02(8.0)- BHS	JST	UL:E60389 CSA:LR20812
	'''	20015WR- 0504	YEONHO	UL:E108706
	INSULATOR	PC	TEIJIN CHEMICALS	UL FILE NO:E50075(M)
T1	TRANSFORMER	TM502	DAISUNG ELECTRONICS	CLASS A (105 de.C) SEE TRANS SPEC
			NAMYANG ELECTRONICS	CLASS A (105 de.C) SEE TRANS SPEC
			KYUNGIN ELECTRONICS	CLASS A (105 de.C) SEE TRANS SPEC
			DAISHIN DENKEN	CLASS A (105 de.C) SEE TRANS SPEC

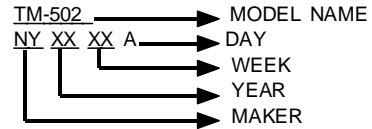
CUSTOMER: GREEN C&C TECH CO.,LTD.		FILE No.	/ 8
SPECIFICATIONS		DATE	2000.12.04
PART NAME	INVERTER TRANS	MODEL NAME	TM-502
PART No.		SPEC (TYPE)	

1. MECHANICAL ASSEMBLY (UNIT : mm)

<< TOP VIEW >>



∅ MARKING



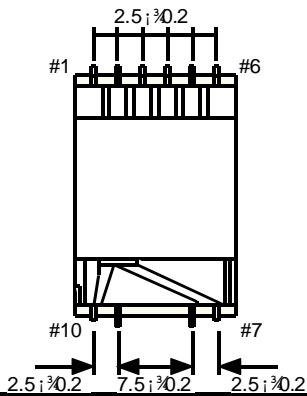
DAY

A	B	C	D	E	F
MON	TUE	WED	THU	FRI	SAT

<< SIDE VIEW >>



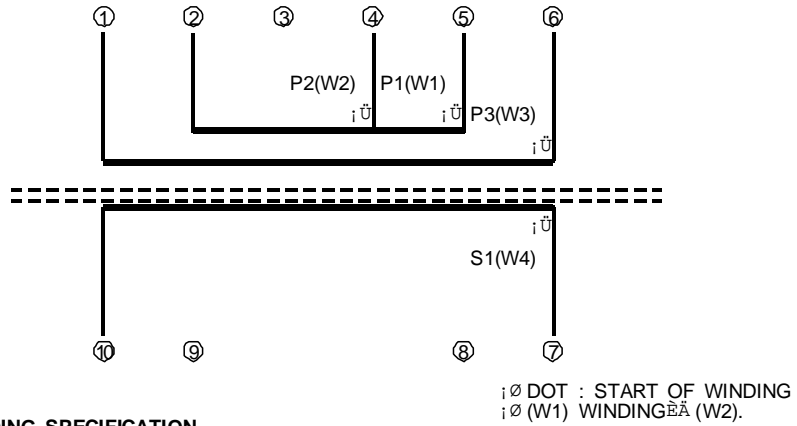
<< BOTTOM VIEW >>



NAM YANG ELECTRONICS CO.,LTD.

CUSTOMER: GREEN C&C TECH CO.,LTD.		FILE No.	/ 8
SPECIFICATIONS		DATE	2001.06.01
PART NAME	INVERTER TRANS	MODEL NAME	TM-502
PART No.		SPEC (TYPE)	

2. SCHEMATIC .



3. WINDING SPECIFICATION.

No.	TERMINAL (S - F)	WIRE	TURNS	WINDING METHOD	INSULATION		
					MATERIAL	T/W (mm)	TURNS
W1	5 - 4	2 UEW 0.30 ^{mm} a (AWG #30)	8	SOLENOID WINDING			
W2	4 - 2	2 UEW 0.30 ^{mm} a (AWG #30)	8	SOLENOID WINDING			
W3	6 - 1	2 UEW 0.15 ^{mm} a (AWG #30)	2	SOLENOID WINDING			
W4	7 - 10	UEW 0.04 ^{mm} a (AWG #44)	1920	SOLENOID WINDING			
	CORE FIXING AFTER INSULATION				P/E TAPE	0.025X12.5	1
	CORE FIXING TAPE				P/E TAPE	0.025X4.0	2

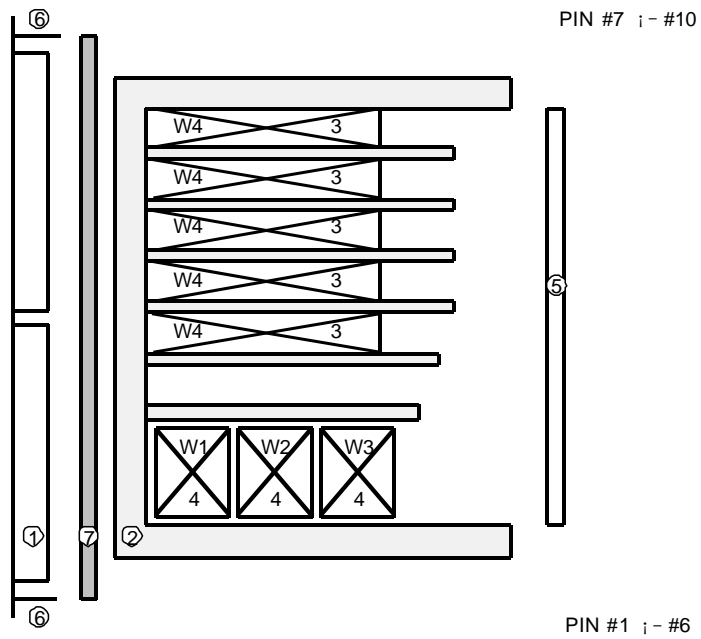
CUSTOMER: GREEN C&C TECH CO.,LTD.		FILE No.	/ 8
SPECIFICATIONS		DATE	2001.06.01
PART NAME	INVERTER TRANS	MODEL NAME	TM-502
PART No.		SPEC (TYPE)	

4. ELECTRICAL CHARACTERISTICS

No.	ITEM	TERMINAL	SPECIFICATION	REMARK
4-1	INDUCTANCE	5 - 2 6 - 1 7 - 10	40 uH $\pm 12\%$ (LS-RS Mode) 0.8 uH Ref. 500 mH $\pm 15\%$ (LP-RP Mode)	LCR-METER at <u>1.0</u> KHz. <u>1.0</u> V (25 \pm 5)
4-3	DC RESISTANCE	5 - 2	0.25 ohm MAX	WHEASTONE BRIDGE (YEW 2755)
4-4	WITHSTANDING VOLTAGE	BETWEEN <u>PRIMARY</u> TO <u>SECONDARY</u> (P1, P2, P3) (S1)	AC <u>2.5</u> KV R.M.S 1 MINUTE	CUT OFF CURRENT <u>5</u> mA
		BETWEEN <u>PRIMARY</u> TO <u>PRIMARY</u> (P1, P2) (P3)	AC <u>0.5</u> KV R.M.S 1 MINUTE	TOS-8850
4-5	INSULATION RESISTANCE	PRIMARY TO SECONDARY COIL TO CORE	100 M ohm MIN at DC 500V	TOS-8850

CUSTOMER: GREEN C&C TECH CO.,LTD.		FILE No.	/ 8
SPECIFICATIONS		DATE	2000.12.04
PART NAME	INVERTER TRANS	MODEL NAME	TM-502
PART No.		SPEC (TYPE)	

5. SECTION DIAGRAM



CUSTOMER: GREEN C&C TECH CO.,LTD.		FILE No.	/ 8
SPECIFICATIONS		DATE	2000.12.04
PART NAME	INVERTER TRANS	MODEL NAME	TM-502
PART No.		SPEC (TYPE)	

6. MATERIAL LISTS

NO.	COMPONENT	MANUFACTURE COMPONENT	NAME OF MATERIAL	MANUFACTURER OF MATERIAL	UL FILE NO.
1	CORE	SAM SUNG CORNING CO., LTD.	SL-2 EPS 16.4 m/m		
2	BOBBIN	JO KWANG ELECTRONICS CO., LTD.	(94V-0) SB EE16 LCP UL	SUMITOMO CHEMICAL CO., LTD.	E 54705 (M)
3	WIRE	L.G CABLE & MACHINERY LTD.	UEW 0.04" a (AWG #44)		E 84441 (S)
4		DONG YANG ELECTRONICS IND CO., LTD.	2 UEW 0.25" a (AWG #30)		E 102761(S)
5	INSULATION TAPE	DUCK SUNG TAPE CO., LTD. (Cat No. DIS-204)	POLYESTER FILM TAPE 0.025 mm X 12.5 mm		E105147(S)
6	CORE FIXING TAPE		POLYESTER FILM TAPE 0.025 mm X 4.0 mm		
7	INSULATOR	SKC LTD	PETP FILM SR50(0.12\$@)		E 74359(S)
8	WAX	MICRO WAX 180	MOBILOR ESSO CO., LTD.		

NAM YANG ELECTRONICS CO.,LTD.

CUSTOMER: GREEN C&C TECH CO.,LTD.		FILE No.	/ 8
SPECIFICATIONS		DATE	2000.12.04
PART NAME	INVERTER TRANS	MODEL NAME	TM-502
PART No.		SPEC (TYPE)	
7. UL - LIST			
OBMW2			
July 19, 1995			
Component - Magnet Wire			
LG CABLE & MACHINERY LTD.			E 84441 (S)
LG TWIN TOWER 20 YOIDO-DONG YOUNGDUNGPO-GU, SEOUL 150-721 KOREA			(A card)
Mtl Dag	EC	Cost type TC	ANSI TYP' TL
UEW	Polyurethane		105
EIW	Polyester-imide		180
AIW	Polyamide-imide		200
SBH-EIW	Polyester-imide	Phenoxy	180
AI-EIW	Polyester-imide	Polyamide-imide	MW-35C 200
PEW	Polyester		130
EIW(F)	Polyester-imide		MW-5 155
NY-EIW(F)	Polyester-imide	Nylon	MW-24 155
NY-UEW	Polyurethane	Nylon	MW-28 130
RRW-H	Polyester-imide	Polyamide-imide	MW-73C 200
OBMW2			
SEPTEMBER 13, 1993			
Component - Magnet Wire			
DONG YANG ELECTRONICS IND CO., LTD.			E 102761(S)
			(B-cont. from A card)
Mtl Dag	EC	Cost type TC	ANSI TYP' TL
UEW	Polyurethane		MW75 130
OANZ2			
January 11, 1996			
Component - Insulating Tape			
DUCK SUNG TAPE CO., LTD.			E 105147(S)
DAESUNG BLDG 677 JAYANG-DONG SUNGDONG. KU, SEOUL 133-190 KOREA			
Polyester film insulating tape, acrylic adhesive Cat. No. DTS-204 rated 130; 1/2			
Acetate cloth insulating tape, acrylic adhesive Cat. No. 231 rated 105; 1/2			
Glass cloth insulating tape, rubber adhesive Cat. No. 220-B rated 130; 1/2			
Glass cloth insulating tape, silicone adhesive rated 180; 1/2 Cat. No. 221H.			
Acetate cloth insulating tape, rubber adhesive Cat. No. DTS-230 rated 105; 1/2			
Nomex (Aramid fiber) film insulating tape, acrylic adhesive Cat.No. DTS-241 rated 130; 1/2			
Polyester film insulating tape, acrylic adhesive Cat. No. DTS-280 rated 130; 1/2			
Marking: Company name or trademark or "E 105147" and catalog designation printed on carton, wrapper or core			

NAM YANG ELECTRONICS CO.,LTD.

CUSTOMER: GREEN C&C TECH CO.,LTD.				FILE No.				/ 8			
SPECIFICATIONS				DATE				2000.12.04			
PART NAME		INVERTER TRANS				MODEL NAME				TM-502	
PART No.						SPEC (TYPE)					
UL - LIST											
SUMITOMO CHEMICAL CO., LTD. 5-33 KITAHAMA 4-CHOME CHUO-KU, OSAKA 541-8550 JAPAN										E 54705 (M)	
		Min	UL94	RTI				H	D		
		Thk	Flam	Elec	Mech	H	H	V	4	C	
Mt1Dag	COL	mm	Class		with w/o	W	A	T	9	T	
					Imp Imp	I	I	R	5	I	
Liquid Crystal Polyester (LCP), designated "EKONOL" or "SUMIKASUPER" furnished in the form of pellets.											
E4000,	NC, BK	0.30	94V-0	130	130	130	-	-	-	-	-
E400X,		0.75	94V-0	130	130	130	3	4	-	-	-
		1.5	94V-0	130	130	130	2	4	-	-	-
		3.0	94V-0	130	130	130	1	4	0	5	4
E4008	NC, WT	0.30	94V-0	130	130	130	-	-	-	-	-
	BK	0.75	94V-0	220	180	220	3	4	-	-	-
		1.5	94V-0	220	200	240	2	4	-	-	-
		3.0	94V-0	220	200	240	1	4	0	5	4
E4010	NC, BK	0.30	94V-0	130	130	130	-	-	-	-	-
		0.75	94V-0	220	180	220	3	4	-	-	-
		1.5	94V-0	220	200	240	2	4	-	-	-
		3.0	94V-0	220	200	240	1	4	0	5	4
E400(Y)L,	NC, BK	0.30	94V-0	130	130	130	-	-	-	-	-
E4008L		0.75	94V-0	130	130	130	3	4	-	-	-
		1.5	94V-0	130	130	130	2	4	-	-	-
		3.0	94V-0	130	130	130	1	4	0	5	4
E4810	NC, BK	0.30	94V-0	130	130	130	-	-	-	-	-
		0.75	94V-0	130	130	130	0	4	-	-	-
		1.5	94V-0	130	130	130	0	4	-	-	-
		3.0	94V-0	130	130	130	1	4	0	4	4

NAM YANG ELECTRONICS CO.,LTD.

