



# SPECIFICATION

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## **GH588A(A32)**

### LED-Converter – Analog-Dimming

Version:

Date: 11.05.2023

Note: This specification is subject to change without prior notice

**TO : Customer**

**DATE : 2023.05.11**

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# **DOCUMENTATION FOR APPROVAL**

**PRODUCT : LED BACKLIGHT DRIVER (RoHS)**

**MODEL NAME : GH588A(A32)**

**GCCT NAME : GCCT588BG**

<b>APPROVAL</b>	<b>CHECKED</b>	<b>WRITTEN</b>

**PLEASE RETURN ONE DOCUMENT AFTER APPROVED SIGN.**

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		Reforming Date	

NO	Date	REVISION	Page

**REVISION HISTORY**

<b>REV.</b>														
<b>Page</b>														
<b>REV.</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Page</b>	1	2	3	4	5	6	7	8	9	10	11	12	13	14
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## 1. APPLICATION

This Document Specified The Detailed Product Requirement of LED driver  
GH588A(A32)

## 2. SUITABLE LOAD

LCD MODULE : 4 Strings LED BLU TFT LCD

## 3. ELECTRICAL CHARATERISTICS

### 3.1. Absolute Maximum Ratings

Item	Symbol	Spec.	Unit	Remarks
Input Voltage 1	Vin	10.8~26.4	V	
Input Voltage 2	ON/OFF	5.25	V	
Operating Temperature	Top	-20~70	℃	
Storage Temperature	Tstg	-30~80	℃	
Relative Humidity	RH	80	%	

### 3.2. Control Signal

PIN No.	Symbol	Status	Action	Remarks
CN1 #9	ON/OFF	HIGH	LED - ON	2.4 ~ 5.25V
		LOW	LED - OFF	0.8 V Max

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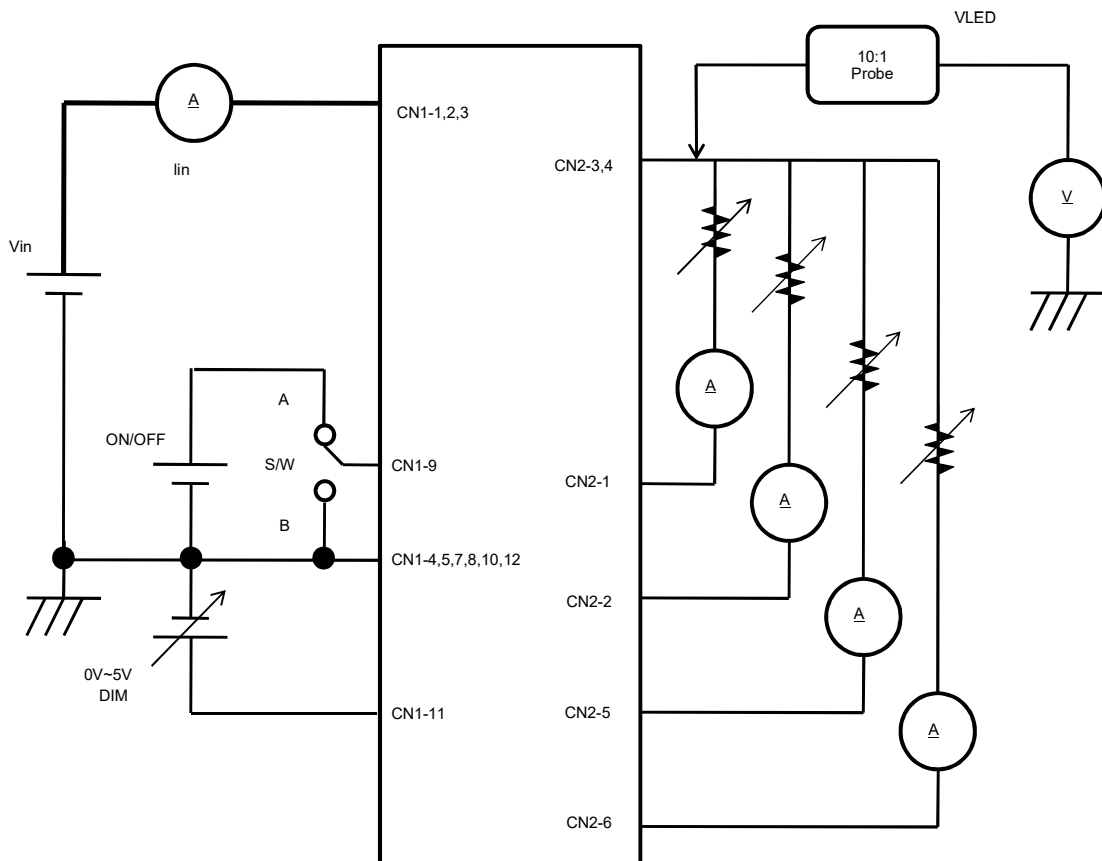
### 3.3. Output Characteristics

Item	Sym.	Condition	Min.	Typ.	Max.	Unit
Input Voltage	Vin	-	10.8	-	26.4	Vdc
Input Current	Iin	Vin=12V, Dim=0V	-	-	1.0	A
Output Current	Iout (Max)	Vin=12V, Dim=0V	36.0	41.0	46.0	mAmean
	Iout (Min)	Vin=12V, Dim=5V	22.0	27.0	32.0	
Backlight ON/OFF Control	ON	-	2.4	-	5.25	Vdc
	OFF	-	-0.3	-	0.8	

\* Output Voltage is greater than Input Voltage for at least 3V or more.

### 3.4. Test Circuit

- S/W : A --> BLU ON  
B --> BLU OFF



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#### 4. INTERFACE

##### 4.1. CN1 Connector (Input) : 12505WR-12(P) (YEONHO) or Equivalent

PIN No.	Symbol	Description
1,2,3	VIN	Voltage Input : 12V, 24V (typ.)
4,5,7,8,10,12	GND	Ground
6	N.C	No Connection
9	ON/OFF	LED DRIVER ON/OFF Control
11	DIM	0V(MAX)~5V(MIN)

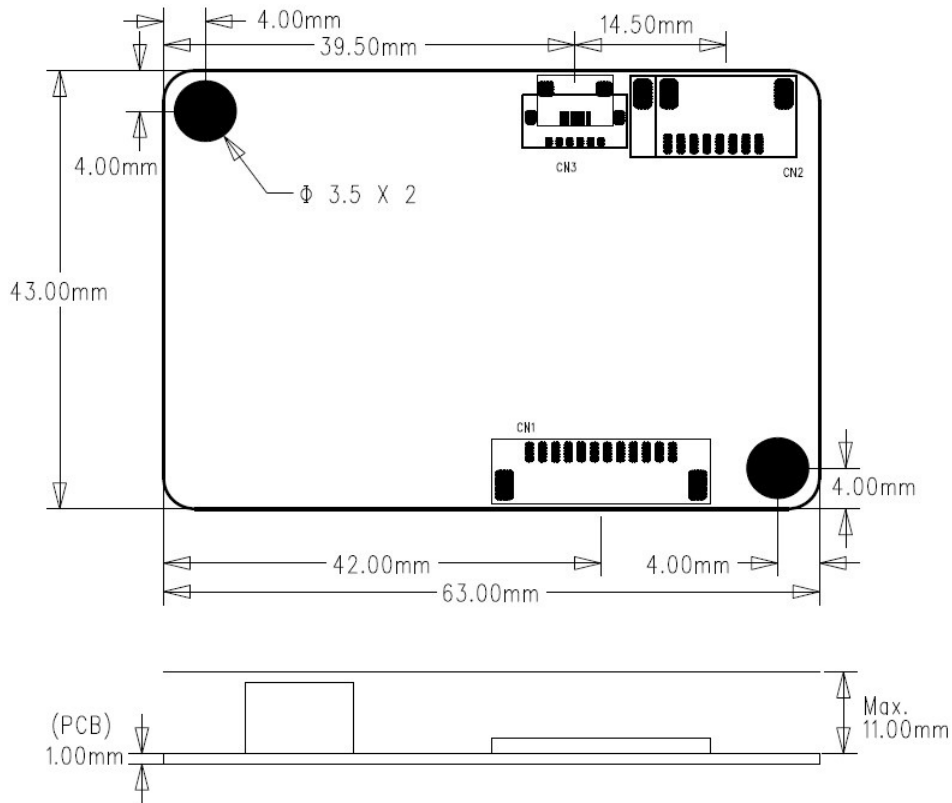
##### 4.2. CN2 Connector (Output) : 12507WR-06L (YEONHO) or Equivalent

PIN No.	Symbol	Description
1	FB1	Feedback 1 (Return 1)
2	FB2	Feedback 2 (Return 2)
3	VLED	System Output
4	VLED	System Output
5	FB3	Feedback 3 (Return 3)
6	FB4	Feedback 4 (Return 4)

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### 5. APPERANCE (Unit : mm)

(Tolerance : +0.8mm, -0.2mm)



### 6. NOTATION OF LOT NUMBER

MARKING:BOTTOM

	<b>GH588A(A32)</b>	→ ① USER MODEL CODE
	<b>G 20 01 A</b>	→ ② PRODUCTION MANAGEMENT CODE
	<b>0001 BG</b>	→ ③ SERIAL NUMBER OR CONTROL CODE

①	GH588A(A32)	: USER MODEL CODE
	G	: MANUFACTURER CODE (GREEN C&C TECH)
	20	: YEAR OF PRODUCT
②		20 → 2020 , 21 → 2021 , ... , 29 → 2029
	01	: WEEK OF PRODUCT 01,02,03,04,...52
	A	: PUBLICATION NUMBER A,B,C,...,Z,0,1,2,...,9
③	0001	: SERIAL NUMBER 0001,0002.....9998,9999
	BG	: GCCT CONTROL MODEL CODE

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## 7. PART LIST

SYMBOL	NAME	1st		2nd		
		TYPE No	MAKER	TYPE No	MAKER	
U1	IC	BD9394EFV	ROHM			
Q1	FET	AP9997GH	APEC	Equivalent		
Q2	TR	MMBT2907A	DIODES	Equivalent		
D1	DIODE	B2100	DIODES	Equivalent		
C1	C-ELEC	NXH Series 220uF/35V	SAMYOUNG	Equivalent		
C2		NXA Series 15uF/100V	SAMYOUNG	"		
C3	MLCC	CL31B105KC	SEMCO	Equivalent		
C4,C30		CL10B104KB	"	"		
C6		CL10B474KO	"	"		
C7		CL21B105KB	"	"		
C8		CL10C101JB	"	"		
C10		CL21A225KA	"	"		
C23		CL10B103KB	"	"		
C27		CL10A105KA	"	"		
R1		CHIP-R	RM10JTN100	TA-I Tech	Equivalent	
R5			RM06JTN274	"	"	
R6	RM06JTN511		"	"		
R7	RM06JTN753		"	"		
R8	RM06JTN101		"	"		
R9	RM06JTN100		"	"		
R10,R22, R23,R26,R30	RM06JTN104		"	"		
R11,R12	RL12FTNR200		"	"		
R16,R17	RM06JTN104		"	"		
R18	RM06JTN113		"	"		
R24	RM06JTN184		"	"		
R27	RM06JTN563		"	"		
R29	RM06JTN102		"	"		
R31	RM06JTN394		"	"		
C9	RM06JTN0		"	"		

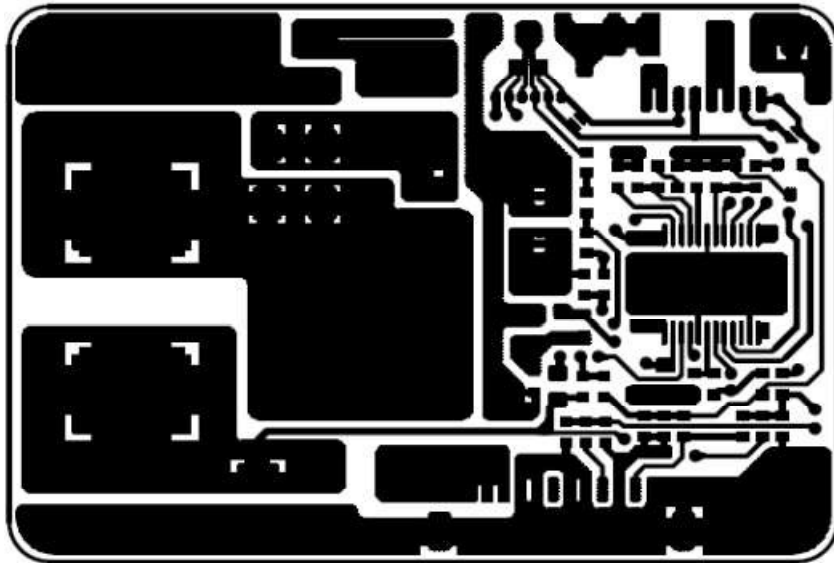


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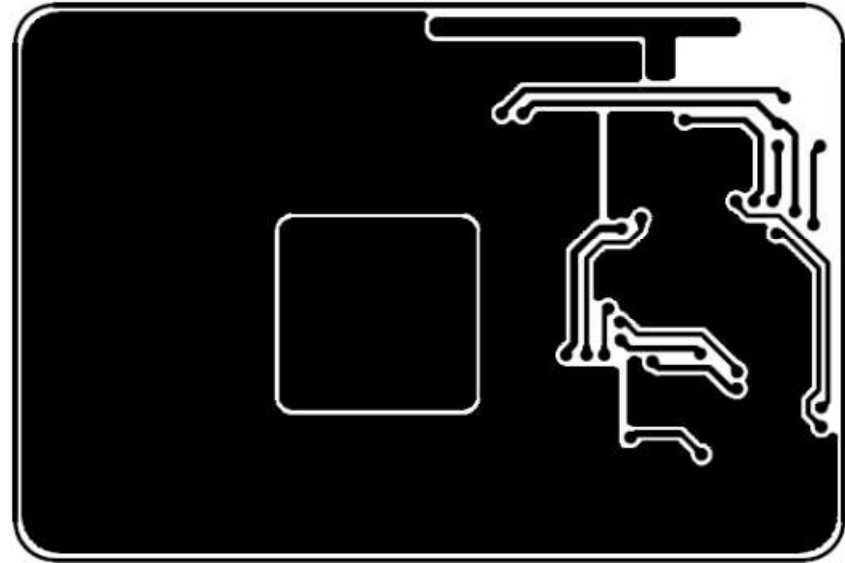
SYMBOL	NAME	1st		2nd	
		TYPE No	MAKER	TYPE No	MAKER
F1	FUSE	CCF1N4	KOA	CB61F4A	Cooper Bussmann
		451004	LITTELFUSE	453004	LITTELFUSE
L1	Inductor	SPI-1260SDN-470	SEJIN Elec	Equivalent	
L2		PNL4020-100M	Dong An Elec	"	
CN1	Connector	12505WR-12(P)	YEONHO	Equivalent	
CN2		12507WR-06L	YEONHO	"	
PCB	PCB	GH588A REV0.0	SEOKANG	GH588A REV0.0	JDM
		GH588A REV0.0	JAEIN CIRCUIT	GH588A REV0.0	SKY TECHNOLOGY

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## 8. PCB LAYOUT



TOP LAYER



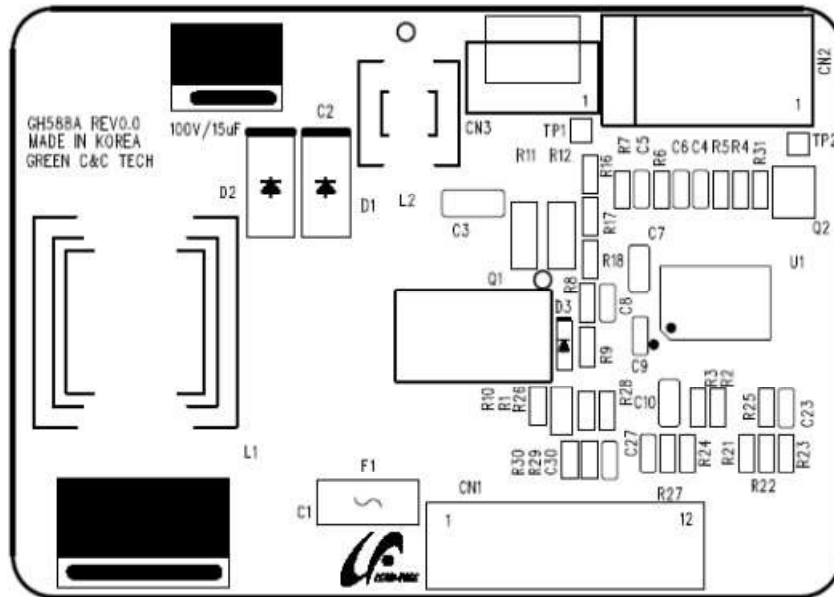
BOTTOM LAYER

GREEN C&C TECH

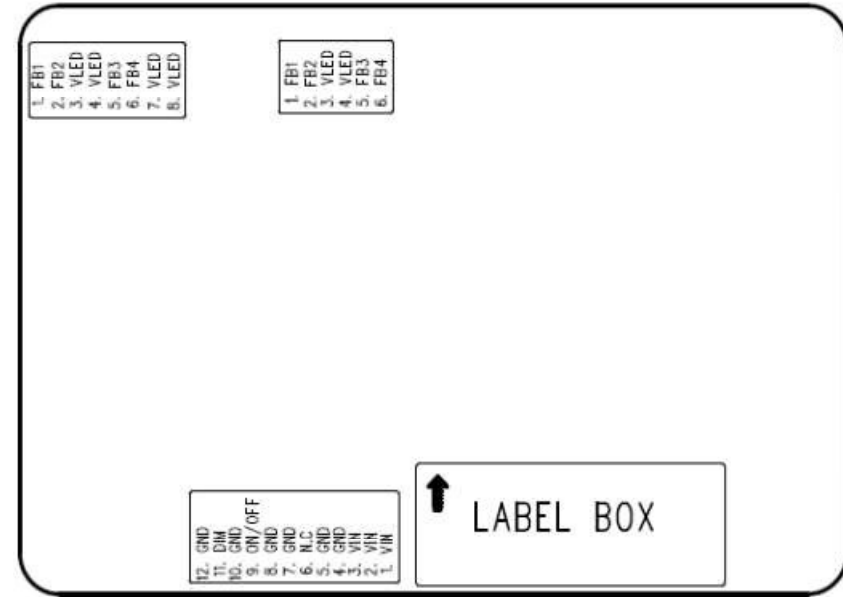
LED DRIVER SPECIFICATION  
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Reforming Date

2023.05.11

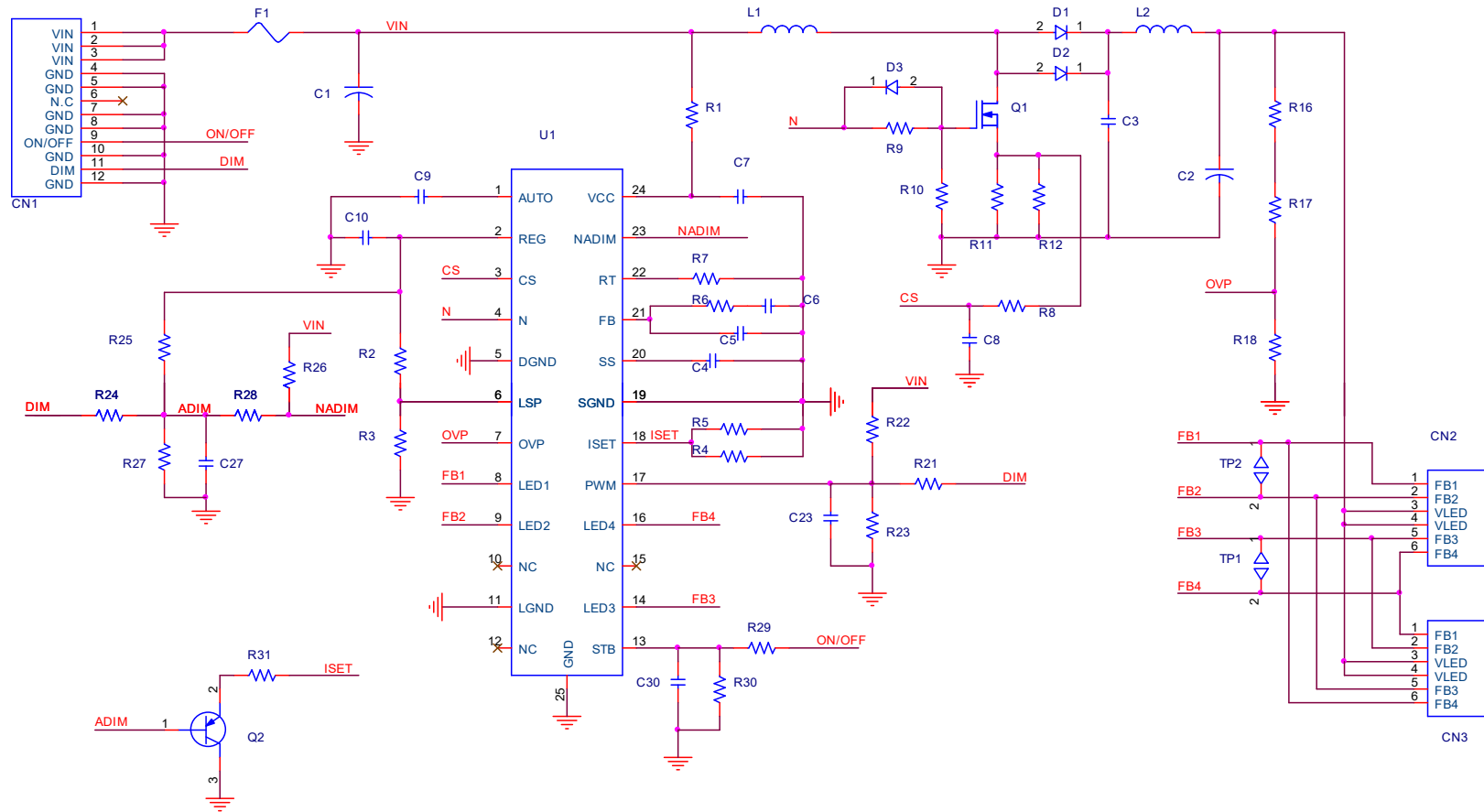


SILK SCREEN TOP



SILK SCREEN BOTTOM

9. CIRCUIT



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## 10. RELIABILITY TEST SPEC.

NO.	ITEM	Conditions and Method
1	High Temperature Storage Test	Temp : 85 °C Duration : 250hrs
2	Low Temperature Storage Test	Temp : -40 °C Duration : 250hrs
3	High Temperature High Humidity Operation Test	Temp : 70 °C Humidity : 95%RH Duration : 250hrs
4	Signal On/Off Test	Temp : Normal Temperature On-Off Signal On 10sec / Off 10sec Power on full Load 30,000 cycles
5	Thermal Shock Test	Temp : -40 °C ↔ 100 °C, 100 cycles (30min) (30min)
6	High Temperature Operation Test	Temp : 70 °C Duration : 250hrs
7	Low Temperature Operation Test	Temp : -20 °C Duration : 250hrs

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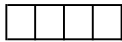
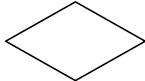
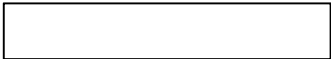
### 11. FLOW CHART

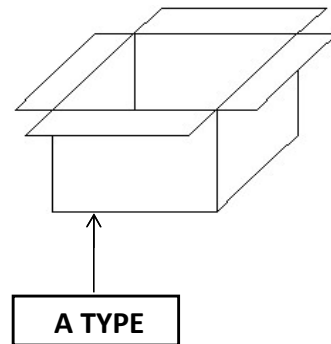
MODEL (TYPE)	GH588A(A32)	REVISION	0
WRITER	S.N.PARK FLOW CHART		
FLOW CHART	PROCESS	EQUIPMENTS	Remark
	Raw Material		PART LIST
	Solder Printing	Cream-solder Printer	
	Surface Mounting	Low-high Mounter	
	Reflow Soldering (CTQ)	Reflower	
	Visual Inspection (AOI)	Microscope, Vision-Master	
	Label attachment	Marking	
	Preparing Process		
	Soldering by Hand for Discrete Parts		
	Spreading Silicon	Silicon Dispenser	
	Insert Lead Parts		
	Wave-Soldering	Wave-Soldering Machine	
	Visual Inspection		
	PCB Division		
	Aging	Power Supply, Aging Box	2hrs
	Electrical Characteristics inspection	Testing System, Testing JIG	
	Insulator Attachment		
Bar-Code Reading	Bar-Code Reader		
Package			
Outgoing Inspection	Testing System, Testing JIG	List of Inspection	
Shipping			
Based on Standard Rule	GCCT588BG		

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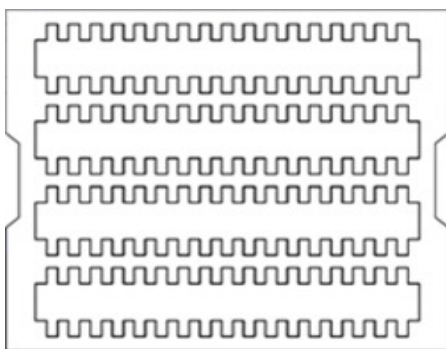
## 12. PACKING

### 12.1. BOX

			 <p>L/C NO : C/T NO : MADE IN KOREA</p>
1. Customer			
2. PART NAME	GH588A(A32)		
3. PO NO			
4. Q'ty	000 EA		
5. Date	00.00.00		
6. LOT NO			



### 12.2. TRAY



SYMBOL	TYPE NO
PACKING-TRAY	393*324*53
PACKING-BOX	415*340*332
PACKING-PAD	400*325*5

1 TRAY : 68EA (GR2052)  
1BOX : 6 TRAY (408EA) - A TYPE

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### 13. Material list for safety GH588A(A32)

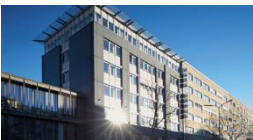
SYMBOL	NAME	TYPE No	MANUFACTURER	DESCRIPTION
F1	FUSE	CCF1N4	KOA	UL FILE NO. : E171861
		451004	LITTELFUSE	UL FILE NO. : E10480
		453004	LITTELFUSE	UL FILE NO. : E10480
		CB61F4A	COOPER BUSSNANN	UL FILE NO. : E19180
PCB	Printed Writing Board	FR4	SEOKANG TECH	UL FILE NO. : E150774
			JDM	UL FILE NO. : E221964
			JAEIN CIRCUIT	UL FILE NO. : E201289
			SKY TECHNOLOGY	UL FILE NO. : E513927
CN1	Connector	12505WR-12(P)	YEONHO	UL FILE NO. : E108706
CN2	Connector	12507WR-06L	YEONHO	UL FILE NO. : E108706



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